

**BRITISH COLUMBIA UTILITIES COMMISSION**  
**IN THE MATTER OF THE UTILITIES COMMISSION ACT**  
**S.B.C. 1996, CHAPTER 473**

**and**

**An Application by British Columbia Hydro and Power  
Authority (BC Hydro) for the Approval of the  
2008 Long-Term Acquisition Plan (2008 LTAP)**

**Vancouver, B.C.**  
**February 26, 2009**

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**PROCEEDINGS AT HEARING**

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**BEFORE:**

<b>A. J. Pullman,</b>	<b>Chairperson</b>
<b>B. Milbourne,</b>	<b>Commissioner</b>
<b>M. Harle,</b>	<b>Commissioner</b>

**VOLUME 8**

## APPEARANCES

G.A. FULTON	Commission Counsel
C. GODSOE K. THRASHER	British Columbia Hydro and Power Authority
D. CURTIS	British Columbia Transmission Corporation
M GHIKAS	Terasen Gas Inc., Terasen Gas (Vancouver island) Inc., Terasen Gas (Whistler) Inc.
G. MacINTYRE	Columbia Power Corporation
E. WALKER	Pristine Power Inc.
C. BOIS	NaiKun Wind Energy Group Inc.
D. AUSTIN	Independent Power Producers of British Columbia
B. WALLACE K. SEYMOUR	Joint Industry Electricity Steering Committee
C. WEAVER	Commercial Energy Consumers of British Columbia
J. QUAIL L. WORTH	B.C. Old Age Pensioners' Organization, the Active Support Against Poverty, B.C. Coalition of People with Disabilities, Council of Seniors' Organizations of B.C., End Legislated Poverty, Federated Anti-Poverty Groups of B.C., and the Tenants' Rights Action Coalition
W. ANDREWS	B.C. Sustainable Energy Association; Sierra Club Of Canada, B.C. Chapter
R. GATHERCOLE	Peace Valley Environmental Association
L. BERTSCH	Horizon Technologies Inc./Energy Solutions for Vancouver Island Society; Okanagan Environmental Industry Alliance; Island Transformation.Org; Rental Owners and Managers Society of BC
M. OULTON L. WINSTANLEY	COPE 378
P. COCHRANE	City of New Westkminster

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**CAARS**

VANCOUVER, B.C.

February 26, 2009

**(PROCEEDINGS RESUMED AT 8:30 A.M.)**

THE CHAIRPERSON: Please be seated.

**B.C. HYDRO PANEL 2 - LOAD/RESOURCE BALANCE AND FORT NELSON**

**KATHERINE PRESTON, Resumed:**

**CHRIS O'RILEY, Resumed:**

**CAM MATHESON, Resumed:**

**JOHN RICH, Resumed:**

**DAVID INCE, Resumed:**

THE CHAIRPERSON: Good morning, Mr. Fulton.

MR. FULTON: Good morning, Mr. Chairman. Good morning, Commissioners. Two preliminary matters this morning, one that I have, one that Mr. Oulton has. The matter that I have relates to a request that came through to me through the Hearing Officer. The request was from Mr. Fletcher for me to ask a follow-up question of this panel. And my practice in terms of questions from other parties is that I do not ask them. It does happen from time to time that people don't ask all the questions that they would have liked to ask in retrospect, but there has to be some finality to that, and it would just place me in a very awkward position in terms of starting to ask questions for people who were here because then I'll get requests from people

1           who were not here to ask questions as well.

2                       So I just wanted to put it on the record  
3           that I will not be asking questions for parties who  
4           are not here to ask the questions themselves, or who  
5           could have asked the question but didn't.

6   THE CHAIRPERSON:    Very good, Mr. Fulton.

7   MR. OULTON:        Good morning, Mr. Chairman, Commissioners.  
8           The preliminary matter that COPE has relates to Dr.  
9           Shaffer's availability. I raised this issue when Mr.  
10          Fulton, I think the day before the hearing started,  
11          which was when I became aware that there might be an  
12          issue. I also raised it with Mr. Godsoe at the outset  
13          of the hearing, and at that time we all estimated that  
14          the panels would go till at least March 11, and there  
15          wouldn't be any problem as a result. Because the  
16          problem is Dr. Shaffer has other commitments and he is  
17          currently out of the country. But he has other  
18          commitments that will prevent him from being here  
19          between March 5<sup>th</sup> and his original availability, he  
20          said he couldn't be here until after March 12<sup>th</sup>.

21                       It's become clear obviously as the hearing  
22          has progressed that matters are going more quickly. I  
23          had raised the issue of having Dr. Shaffer appear  
24          early, much like Dr. Jaccard is. B.C. Hydro's  
25          preference is to not have Dr. Shaffer appear early  
26          because their preference is to close their case. I

1 fully accept that and accept my friend's position,  
2 which leaves us in the position of Dr. Shaffer  
3 appearing at the end.

4 **Proceeding Time 8:32 a.m. T02**

5 I have gone back to Dr. Shaffer and  
6 requested that he do everything in his power to move  
7 that date up, because it -- Mr. Godsoe has advised me  
8 that he expects to be done probably around the ninth.  
9 There will be a further IPPBC witness, as I understand  
10 it, after that. There will also be potentially  
11 BCSEA's witness panel. If they do not finish on the  
12 4<sup>th</sup>, they will be continuing after B.C. Hydro closes  
13 its case.

14 Dr. Shaffer has made arrangements to be  
15 here on the 11<sup>th</sup>, and I'm just hopeful that the panel  
16 will accept that. At best, there will be some down  
17 time, maybe on the 10<sup>th</sup>, but he will be here first  
18 thing in the morning on the 11<sup>th</sup>.

19 And Dr. Shaffer apologizes for the  
20 inconvenience. Part of it, I think, has to do with --  
21 he had booked his availability based on the original  
22 dates of the hearing, and that, of course, got moved.  
23 We did advise him of that, but he didn't realize the  
24 conflict until the outset of the hearing, or close to  
25 the outset of the hearing.

26 THE CHAIRPERSON: Mr. Godsoe?

1 MR. GODSOE: And I did want to support my friend on the  
2 estimates. I think we've all been caught a little bit  
3 by surprise at the speed at which -- with this hearing  
4 is moving, and Mr. Austin did advise me that the IPPBC  
5 panel is going to be split into two, so we're going to  
6 have Dr. Jaccard and Mr. Landry on the 4<sup>th</sup>, but that  
7 Mr. Ball would be subsequent to that. So he would be  
8 on the 9<sup>th</sup>. So I think my friend's right, the only day  
9 that we'd be down is the 10<sup>th</sup>. We're not guaranteed  
10 the BCSEA panel will be completed on the 4<sup>th</sup>, so that  
11 might move to the 9<sup>th</sup> or the 10<sup>th</sup>. So I don't think we  
12 are talking about much down time, and so we support my  
13 friend's position.

14 MR. AUSTIN: If it's any assistance, we could have Mr.  
15 Ball here on the 11<sup>th</sup> as well, so that we have a full  
16 -- in a sense, as much of a full day as possible.  
17 Because he's coming from out of town, and it would be  
18 more convenient to book him to a fixed date than an  
19 unfixed date.

20 THE CHAIRPERSON: I'll take this under advisement and let  
21 you know after the break, if that's okay.

22 **Proceeding Time 8:34 a.m. T3**

23 MR. OULTON: Thank you, Mr. Chairman.

24 **CROSS-EXAMINATION BY MR. OULTON (Continued):**

25 MR. OULTON: Q: Good morning, Panel. To begin today,  
26 I'd like to follow up on a question that I asked

1       yesterday afternoon, and the transcript reference is  
2       Volume 7, page 1213. I believe you'll recall I was  
3       asking some questions about the reliance on Burrard in  
4       the past ten years, versus its actual operations. And  
5       Mr. Matheson, you gave the following answer at page --  
6       or at line 17 of page 1213 where you said:

7                "But I think it's worth pointing out, the  
8                system has tightened up considerably in the  
9                last ten years. In other words, the ability  
10              of our resources to meet the growing load  
11              has become much tighter over that period of  
12              time. So I think it's one thing to look  
13              back to a time when we had a relatively  
14              sizable surplus and say that Burrard  
15              operated very little. And I think Mr.  
16              O'Riley's point is that in the period we're  
17              now heading into, where our load resource  
18              balances are much tighter than they have  
19              been, you've got a very different operating  
20              paradigm."

21                    My question is, is it possible for you to  
22                    provide the load resource balance from the last  
23                    applicable long-term planning document for the final  
24                    six years shown in Figure 5-7, which was the figure we  
25                    were looking at when we were asking --

26 MR. MATHESON:    A:    Well, our think our load resource

1 balances are filed with the Commission for that entire  
2 six-year period, so I don't think it's going to be a  
3 difficult thing to get them.

4 MR. GODSOE: Sorry, if I could just have a moment to turn  
5 to the figure my friend is referencing. It's Figure  
6 5-7?

7 MR. OULTON: Yes, it's on page 5-25 of the application,  
8 Exhibit B-1.

9 MR. GODSOE: So that's the actual annual generation. I'm  
10 unclear as to what my friend is asking for. I think  
11 yesterday we did establish that it goes up to 2007,  
12 and Mr. O'Riley did give a statement about 2008. So  
13 I'm unclear as to what my friend is asking.

14 MR. OULTON: Q: What I'm asking, I was asking questions  
15 yesterday about the distinction between B.C. Hydro's  
16 planning and its actual operation decisions. And Mr.  
17 O'Riley, you had given some evidence about how you  
18 expect going forward an increased reliance on Burrard  
19 will mean increased operation. And I was asking you  
20 questions about the past ten years when you relied on  
21 Burrard for 6100, and I was pointing to the years  
22 shown in Figure 7, the last six years, where the  
23 operation was actually quite low. And that's the  
24 context in which you gave your answer, Mr. Matheson,  
25 and I do appreciate it may well -- the load resource  
26 balances have been filed with the Commission. I

1 didn't have an opportunity overnight to locate those  
2 in the resource library, and I would have thought that  
3 this would have been something that would be readily  
4 available to B.C. Hydro.

5 **Proceeding Time 8:37 a.m. T04**

6 MR. GODSOE: I'm sorry, I'm still unclear what you're  
7 asking. I don't know how we can extend Figure 5-7 out  
8 any further. We've given you the 2008 number, and  
9 there's -- Mr. O'Riley can correct me if I'm wrong,  
10 but I don't think there's any annual generation for  
11 2009. So I'm still unclear on what you're asking.

12 MR. OULTON: I'm not asking for Figure 7 to be extended  
13 out.

14 MR. OULTON: Q: Figure 7, as I understand it, shows the  
15 actual annual generation, that's correct?

16 MR. O'RILEY: A: Yes.

17 MR. OULTON: Q: Yeah. And what I'm asking for, given  
18 Mr. Matheson's comment, is the load resource balance  
19 that was applicable for those years in the -- I  
20 appreciate, as you file new long-term acquisition plan  
21 -- or new long-term plans with the Commission,  
22 eventually that period goes from planning to  
23 operation, and it won't be in there any more. So,  
24 what I'm asking for is the most recent long-term plan  
25 showing the load resource balance that B.C. Hydro  
26 expected in those years.

1 MR. GODSOE: And it's those years that I'm confused  
2 about. Which years?

3 MR. OULTON: The final six years that are shown in Figure  
4 5-7. We have the actual generation. I'm looking for  
5 the load resource balances that were applicable in  
6 those years. The most current ones. Because I  
7 appreciate if you file the long-term acquisition plan  
8 in 1990, 20 years out it would have covered those  
9 years.

10 MR. GODSOE: Right. So I think what you're asking for is  
11 a 1994 or 1995 load resource balance, and I'm  
12 struggling to understand how that's relevant.

13 MR. OULTON: I don't see how you can get 1994 or 1995.

14 MR. GODSOE: Well, you're asking us to project out the  
15 load resource balance, I think, from 2001 to 2007.  
16 And what I'm telling you is that that will likely be  
17 in the 1994 or 1995 IEP, I think, would be the  
18 reference for that.

19 MR. OULTON: So there were no long-term acquisition plans  
20 filed between 1994 and 1995 and 2006?

21 MR. GODSOE: The only one that was filed was the 2006  
22 IEP/LTAP.

23 MR. OULTON: Right. Forgive me, I haven't been involved  
24 in these hearings --

25 THE CHAIRPERSON: I think there might have been one in  
26 2004, but I --

1 MR. GODSOE: Well, yeah. The 2004 REAP wasn't a long-  
2 term resource plan. I'd have to go back and check how  
3 far out it projected the load resource balance. I'm  
4 confident saying the IEP certainly -- the 2006 IEP  
5 certainly did that. Maybe I can take that up with my  
6 friend at the break.

7 THE CHAIRPERSON: Why don't you do that?

8 MR. OULTON: All right. If it's helpful I'll ask one  
9 follow-up question.

10 **Proceeding Time 8:40 a.m. T5**

11 MR. OULTON: Q: Does B.C. Hydro on a regular basis  
12 prepare its projections of the load resource plan  
13 going forward, or does it only do it when it's making  
14 filings with the Commission?

15 MR. MATHESON: A: Well, to my knowledge it's only when  
16 we are filing a document with the Commission like  
17 this.

18 MR. OULTON: Q: All right, I'll discuss it with my  
19 friend at the break.

20 Now, the second follow-up question that I  
21 have from yesterday relates to the *Globe and Mail*  
22 article that's attached to response BCUC IR 1.99.1.  
23 And I don't know if we necessarily need to go to it.  
24 My question is simply this. You gave evidence  
25 yesterday, I believe, Dr. Preston, about the concerns  
26 expressed by the director when you thought that B.C.

1 Hydro was going to restore Burrard to a baseload  
2 function as described in the *Globe and Mail* article.  
3 Is that correct? That's my recollection. Am I fairly  
4 summarizing one of the things you said about the *Globe*  
5 *and Mail* article?

6 MS. PRESTON: A: Well, could you point me to where in  
7 the transcript you're referring to?

8 MR. OULTON: Q: I don't have a transcript reference for  
9 this. I was simply -- I don't -- I'm not following up  
10 on something specific you said. I'm simply -- maybe  
11 I'll ask this.

12 The director had expressed some concerns  
13 regarding his view as seen in the *Globe and Mail*  
14 article, that B.C. Hydro was going to restore Burrard  
15 to a baseload function, and we talked yesterday about  
16 how that was incorrect. Do you recall that?

17 MR. GODSOE: So can we turn to the IR, because I don't  
18 see any reference to baseload function in that news  
19 article. Attachment 1 to Exhibit B-3, BCUC IR 1.99.1.

20 MR. OULTON: Q: Sorry, I thought this would be a little  
21 more straightforward. My apologies. Sorry. The  
22 reference is the fourth paragraph of the article:

23 "However Ray Robb, air quality district  
24 director from Metro Vancouver, is concerned  
25 because the plan suggests the Burrard  
26 Generation Station, which now only operates

1           in periods of peak demand, would once again  
2           become a base source of Hydro's electricity  
3           production."

4           And I apologize if I characterized that as base load.  
5           That's what I took base source to mean.

6                         We talked about this yesterday, is my  
7           recollection, and I believe it was Mr. Matheson you  
8           said that that was an error or a misapprehension on  
9           the part of the director because of some  
10          misinformation in the media.

11 MR. MATHESON:    A:   Well, it wasn't that -- it wasn't  
12                    misapprehension on the part of the director.  It was  
13                    improperly reported in the newspaper article, and he  
14                    was reacting to it.

15 MR. OULTON:     Q:   Yes, I believe that -- I think we're  
16                    saying the same thing in different ways.  He had a  
17                    misapprehension as a result of misinformation that was  
18                    in the media.

19 MR. MATHESON:    A:   Yeah, I mean, to be fair, he was  
20                    responding to the, you know, number of people calling  
21                    him, I think, and other local Tri-City newspapers as  
22                    well, that were all of a sudden concerned about the  
23                    way that the plant was going to operate in the future,  
24                    and he was simply trying to respond to those.

25 MS. PRESTON:    A:   I think what this highlights, though,  
26                    is the fact that it's going to be very difficult for

1 the public to understand this whole concept of  
2 planning for 3,000 but never intending to actually  
3 operate at 3,000, and they're going to wonder why the  
4 need to plan for 3,000 if you're never going to  
5 operate at that level. So I think that's what this  
6 highlights.

7 MR. OULTON: Q: I appreciate you gave evidence about  
8 that yesterday, Dr. Preston. My follow-up question,  
9 now that I'm finally there, is simply, what steps or  
10 efforts has B.C. Hydro taken to explain what the  
11 planning reliance in the LTAP actually means for  
12 Burrard, to the director.

13 MR. MATHESON: A: Well, I had numerous conversations  
14 with the director as he and I met several times over  
15 live radio and subsequent newspaper articles about,  
16 you know, in terms of trying to clarify for the public  
17 what we intend to do with the plant. And during those  
18 I certainly offered him at any point in time to sit  
19 down and meet with Metro Vancouver and discuss any  
20 concerns that they might have. And they have not yet  
21 taken us up on that.

22 **Proceeding Time 8:45 a.m. T06**

23 MR. O'RILEY: A: And all of that was in the context of  
24 3,000 gigawatt hours. So, I mean, we'd have to have  
25 quite a different conversation around 6,000 gigawatt  
26 hours, which is our recommendation that we would

1           undertake if there was a requirement to go there.

2 MR. MATHESON:    A:    But he certainly made the comment,  
3           several times, during those exchanges that were the --  
4           you know, were events to come to pass, that they would  
5           have to, in his words, I think, you know, re-look at  
6           the permit or open up the permit, or determine whether  
7           or not the permit was adequate for the purposes of  
8           Metro Vancouver.  So, in that -- I mean, he mentioned  
9           that many times during these exchanges.

10 MR. OULTON:    Q:    But as you indicated, you have yet to  
11           have face-to-face meetings with them to discuss these  
12           issues directly --

13 MR. MATHESON:   A:    Well, I think -- no, and I -- but I  
14           do think that we are here in front of this Commission  
15           discussing whether this is the right plan for Burrard  
16           thermal going forward, and I would suspect that if,  
17           after the Commission has made its decision here, and  
18           they still had concerns, they would take us up on that  
19           offer.  I didn't get the sense they were shy in any  
20           way to come forward and talk to us about their  
21           concerns.

22 MR. OULTON:    Q:    Well, and I wasn't suggesting that, Mr.  
23           Matheson.

24                        All right, moving on, we were talking  
25           yesterday about some elements of the response given to  
26           BCUC IR 1.102.1, and there are a couple of issues that

1 I failed to address yesterday. So if you could turn  
2 to that reference, please?

3 MR. O'RILEY: A: I've got it.

4 MR. OULTON: Q: All right. On page --

5 MR. O'RILEY: A: I think that we're waiting for the  
6 others.

7 MR. OULTON: Q: Sorry. The page that I'm interested in  
8 is page 2 of the response. Do you have that, Mr.  
9 O'Riley?

10 MR. O'RILEY: A: I do. I do.

11 MR. OULTON: Q: And there are two -- there's a Table 5-  
12 8, and a Figure 5-9. As I understand it, these are  
13 both updated tables from the original application that  
14 have now added in the 6,000 gigawatt hour-per-year  
15 scenario. Is that correct?

16 MR. O'RILEY: A: Yes, and there was another change with  
17 respect to the treatment of the carbon tax, and the  
18 offsets as well. So that's why the figures are  
19 different from what's in the application.

20 MR. OULTON: Q: Right. The carbon tax -- the impact of  
21 the carbon tax was taken out. Is that --

22 MR. O'RILEY: A: Beyond 2016.

23 MR. OULTON: Q: Yes. And that's as a result of some of  
24 the legislative changes.

25 MR. O'RILEY: A: It was a clarification of government's  
26 intent.

1 MR. OULTON: Q: Yes. Now, as I understand Table 5-8,  
2 it shows the weighted present value of the costs of  
3 the various scenarios that were looked at for Burrard,  
4 is that correct? Using a variety of pricing  
5 forecasts.

6 MR. O'RILEY: A: That is correct.

7 MR. OULTON: Q: And if we look at the 3,000 gigawatt  
8 scenario, we see a cost that's 11 -- or, sorry, a  
9 weighted present value of 11,403. And that's in  
10 millions. Is that correct?

11 MR. O'RILEY: A: Yeah, it's \$11 billion.

12 MR. OULTON: Q: Yes. \$11.4 billion.

13 MR. O'RILEY: A: Present value over many, many years.

14 MR. OULTON: Q: Yes. And if you look at the 6,000  
15 gigawatt hour scenario, it's a weighted present value  
16 of the cost of approximately \$10.74 billion?

17 MR. O'RILEY: A: Yes.

18 MR. OULTON: Q: And as I understand it, then, what this  
19 shows is that reducing reliance on Burrard from 6,000  
20 as it was prior to this LTAP to 3,000 will cost B.C.  
21 Hydro in the neighbourhood of \$660 million -- there  
22 are some other credits that I'll come to, but on this  
23 table, there's about a \$660 million difference. Is  
24 that correct?

25 MR. O'RILEY: A: Yeah, and that assumes, of course,  
26 that the 6,000 is an actual viable alternative, which

1 we've provided a bunch of evidence to say that it  
2 isn't. So, the question of whether it's a realistic  
3 alternative is important in understanding the  
4 difference.

5 MR. OULTON: Q: I understand.

6 MR. O'RILEY: A: The other question, and I -- other  
7 point to make here is, these aren't risk-adjusted  
8 differences. So, our view is that, by trying to go  
9 from 3,000 in our proposal to 6,000, we're putting at  
10 risk, serious risk, the social licence for 3,000. So  
11 you need to think about where you might end up as a  
12 result of losing that social licence. And I suggested  
13 that the cost of going from 3,000 to 600 would be an  
14 additional \$900 million, relative to the 11.4 billion  
15 there. And so when you're trading off the benefit of  
16 trying to go to 6,000, you need to think about where  
17 you might end up if that is unsuccessful, and I put to  
18 you that it may not be at 3,000.

19 **Proceeding Time 8:51 a.m. T07**

20 MR. OULTON: Q: And I have your evidence on that, Mr.  
21 O'Riley. You're talking about risks again. Is it  
22 fair to say that the principal risk in B.C. Hydro's  
23 mind in relying on 6,000 versus 3,000 is the risk to  
24 its social licence? That's the primary factor, that's  
25 the primary risk that we've been talking about over  
26 the last few days.

1 MR. O'RILEY: A: The -- yeah. I think the risk is -- I  
2 wouldn't put it that way. I would say that, if you --  
3 if we want to plan to rely on it for 6,000, we need to  
4 demonstrate its capability, and we need to demonstrate  
5 it has technical capability, and we've shown that's a  
6 bit of a stretch, but feasible. We've determined that  
7 we don't have the social licence, so we have to go out  
8 and get that, and that there is risk associated with  
9 the process of going out and getting it. And that  
10 risk goes to the -- we have more confidence that we  
11 can achieve the social licence for 3,000. So the risk  
12 is that, in the course of trying to go out and get the  
13 social licence for 6 you lose your social licence --  
14 you don't end up with a social licence for 3, and you  
15 end up further down. And that has a real significant  
16 cost for ratepayers.

17 MR. OULTON: Q: Right. But I still -- maybe I'm  
18 misunderstanding what you're saying. The principal  
19 risk still is the risk to the social licence --  
20 relating to the social licence.

21 MR. O'RILEY: A: No, the risk is -- the risk is the  
22 impact on our objectives here. And our objectives are  
23 to achieve the lowest cost -- or the lowest-cost  
24 reliable power for our ratepayers. So that the risk,  
25 the adverse outcome that you would experience, is not  
26 your social licence, it's the fact that you'd incur

1 higher costs over time as a result of not ending up at  
2 3,000.

3 MR. OULTON: Q: I appreciate that's B.C. Hydro's  
4 position on the consequences relating to the loss of  
5 social licence.

6 MR. O'RILEY: A: Yeah, and risk just -- I mean, I did  
7 spend a bunch of years as a risk manager, and chief  
8 risk officer in the company, so I'm a bit -- probably  
9 a bit pedantic about this. But the risk is the  
10 consequences that you could experience. It's not the  
11 -- you're talking about a potential pathway to those  
12 risks, which is not achieving the social licence for  
13 3,000. That is the issue.

14 MR. OULTON: Q: And maybe I'm parsing words too much  
15 here, but I appreciate that the consequences are what  
16 you're concerned with.

17 MR. O'RILEY: A: Yes.

18 MR. OULTON: Q: But it's the risk to the social licence  
19 that leads to those consequences.

20 MR. O'RILEY: A: That's --

21 MR. OULTON: Q: That's what you've been talking about.  
22 Whenever I have raised the 6,000 issue with you, you  
23 keep saying, "Well, that's going to put in jeopardy  
24 our social licence for 3, or our ability to get it, if  
25 you assume you don't have it for the moment", and I  
26 don't necessarily accept that, but --

1 MR. O'RILEY: A: So I think we're getting a little  
2 closer. So, what I'm saying is that we don't believe  
3 we have a social licence for 6, and we have to take  
4 action to get it. And that action could lead to not  
5 having -- not ending up with a social licence for 3.  
6 So I think we're relatively close on that, but I --

7 MR. OULTON: Q: Okay, I think --

8 MR. O'RILEY: A: -- I'm going to stick to my  
9 characterization of it.

10 MR. OULTON: Q: All right. Maybe I'll come at this a  
11 different way. Moving to 6,000 gigawatt hours per  
12 year for planning purposes is not going to pose any  
13 significant supply-side risk for B.C. Hydro. If you  
14 can't operate Burrard at 6,000 due to an outage or  
15 something to that effect, there are sources in most  
16 years available to B.C. Hydro to displace that power.  
17 Is that correct?

18 **Proceeding Time 8:46 a.m. T8**

19 MR. O'RILEY: A: Well, it depends. I mean, there is  
20 also a scenario in moving to 6 where you lose -- as  
21 we've said in the documents, where you lose the social  
22 licence for the capacity. So that would -- I mean,  
23 which we almost in the past, and Mr. Elton talked  
24 about the direction we were going in to close the  
25 plant completely beyond 2014. So there actually is --  
26 because as the operator of the system, I actually need

1       that plant, rely on that plant for capacity and short-  
2       term energy. So there is a scenario where, in the  
3       course of trying to achieve 6,000, you lose the social  
4       licence for capacity and you do end up -- there are  
5       environment, there are reliability implications of  
6       that. The system becomes much harder to run without  
7       Burrard.

8   MR. OULTON:    Q:    For the purposes of my question, can we  
9       just assume for the moment -- I know you don't accept  
10      this. Just assume that there isn't a social licence  
11      issue here. That if B.C. Hydro --

12   MR. O'RILEY:   A:    I'm not going to be able to accept  
13      that.

14   MR. OULTON:    Q:    Right. The supply-side risk that  
15      you're talking about then, again, is linked to the  
16      social licence. There isn't, in and of itself, a  
17      significant supply-side risk to B.C. Hydro if you  
18      relied on Burrard to 6,000.

19   MR. O'RILEY:    A:    Well, I just described the link  
20      between trying to achieve a social licence for 6,000,  
21      and the capacity. And there is a -- so there is a  
22      reliability implication of that.

23   MR. OULTON:    Q:    Right, and again it's tied to the  
24      social licence issue.

25   MR. O'RILEY:    A:    The issues are all tied together as --  
26      I mean, I think that's the point we've made, right?

1           You can't kind of pick and choose the parts of this  
2           you like. You have to look at it as a package.

3 MR. OULTON:   Q:   And I'm trying -- I appreciate that and  
4           I'm trying to understand B.C. Hydro's position. And  
5           as I understand pretty much everything you're saying  
6           this morning, everything is tied to the social licence  
7           issue. And what I'm saying is that's the principal  
8           risk here. It has to do -- it all comes back to the  
9           social licence question. There isn't, in and of  
10          itself, if you relied on Burrard for 6,000, that's not  
11          going to have a significant -- you're not going to  
12          suddenly not have enough power, absent losing your  
13          social licence and not being able to operate it.

14 MR. O'RILEY:   A:   Absent losing the -- okay, I can  
15          probably acknowledge that as long as we have the plant  
16          for capacity, as long as we can guarantee that and in  
17          the course of achieving -- trying to achieve 6,000 we  
18          don't lose reliance on the plant for capacity, then  
19          there's not a reliability issue.

20 MR. OULTON:   Q:   I think we finally got to where I was  
21          trying to get.

22 MR. O'RILEY:   A:   But that's a big assumption. So we  
23          just have to appreciate we're making a big assumption  
24          there.

25 MR. OULTON:   Q:   I appreciate your views on the risk to  
26          the social licence. You've been very --

1 MR. O'RILEY: A: Well, again, it's the risk to the  
2 ability to plan reliance on the plant.

3 MR. OULTON: Q: Now, with reference to the technical  
4 capabilities of Burrard, AMEC assessed the current  
5 condition of Burrard and prepared a number of reports  
6 with respect to the scenarios that we're talking about  
7 here, as well as some others, rebuilding and the like.  
8 That's correct, right?

9 MR. O'RILEY: A: That is correct.

10 MR. OULTON: Q: And the scenarios that AMEC looked at  
11 are very similar to the ones that Dr. Preston looked  
12 at. There was a 600, a 3,000 and a 6,000 scenario,  
13 correct?

14 MR. O'RILEY: A: That is correct.

15 MR. OULTON: Q: And in its report, AMEC assumed, when  
16 it was determining the risks of operation and the  
17 like, that in each scenario it was a baseload plant.  
18 It was operating at or around those levels. Is that  
19 correct? Or did it assume displacement of the power?

20 MR. O'RILEY: A: That is correct.

21 MR. OULTON: Q: So it assumed it was the baseload  
22 plant. So when it talks about the technical risks of  
23 outages and part failure and the like for the 6,000  
24 gigawatt hour per year scenario, AMEC was assuming  
25 that it's operating at 6,000, in most years.

26 **Proceeding Time 9:00 a.m. T09**

1 MR. O'RILEY: A: Yes, and they highlighted the  
2 challenges of actually doing that.

3 MR. OULTON: Q: Right. But as I understand your  
4 evidence yesterday, whether you're relying on it for  
5 3,000 or 6,000, absent critical water situations,  
6 you're not expecting to operate Burrard at its  
7 planning level.

8 MR. O'RILEY: A: Yeah, and I'll just reiterate, really,  
9 the argument -- our position there, and it -- if I  
10 summarize it this way, the object of the exercise is  
11 really to determine the capability of Burrard for  
12 energy and capacity in our planning stack. And we  
13 believe that capability includes both technical and  
14 engineering-type issues, and the social licence issue.  
15 And we're not prepared to make an argument in favour  
16 of a certain level of capability that relies on the  
17 assumption that the plant doesn't operate. And our  
18 view is, that's not a principled argument.

19 And the fourth point I would add to that is  
20 the -- although the legal threshold becomes higher for  
21 this after 2016, the same logic applies prior to 2016,  
22 because we do have planning criteria that have been  
23 endorsed by this Commission that require us to come up  
24 with a firm capability for the plant and this -- we  
25 would have to go -- we have to go through the same  
26 process for determining that capability prior to 2016

1 as after. It still depends on the social licence, it  
2 still depends on the technical capability.

3 So, our view is that we can achieve a  
4 social licence for 900 megawatts of capacity and 3,000  
5 gigawatt hours of energy, with some risk, and that is  
6 the amount that we should be relying on, at least  
7 through 2019 when we have ILM in service.

8 MR. OULTON: Q: I understand B.C. Hydro's position as  
9 you've laid out. You've been very clear about that.  
10 But you'll agree with me that, in B.C. Hydro's view,  
11 there are a number of components to capability.  
12 There's technical capability. Can the plant do it?  
13 Correct?

14 MR. O'RILEY: A: Yes.

15 MR. MATHESON: A: I think Mr. O'Riley -- I think he  
16 just went through that.

17 MR. OULTON: Q: I know. And my questions are directed  
18 at the technical capability, and rather than answering  
19 them, I'm getting back, "Well, it's all one big  
20 piece." And I'm just trying to probe the technical  
21 capability side of things. And I appreciate B.C.  
22 Hydro's position. And I appreciate the summary that  
23 you provided. But I'd just like to talk about the  
24 technical capability.

25 MR. O'RILEY: A: Yes. And we're happy to do that.  
26 Happy to do it.

1 MR. OULTON: Q: All right. Again, sticking with AMEC  
2 --

3 MR. O'RILEY: A: Do you have a reference to where  
4 you're in the report that you want to -- should I be  
5 looking at?

6 MR. OULTON: Q: Not for the purposes of the questions  
7 I'm asking right now. If I come to some particulars,  
8 I will take you to that or, as I understand it, the  
9 results of AMEC's work are at least broadly summarized  
10 in Chapter 5 of the application. Correct?

11 MR. O'RILEY: A: Yes.

12 MR. OULTON: Q: In particular, I think it starts around  
13 page 5-29. And as I understand AMEC's conclusions,  
14 it's essentially that, with the investment of some  
15 sustaining capital, Burrard will be capable of  
16 operating under any of the scenarios it examined. Is  
17 that correct?

18 This is on 5-29, I believe.

19 MR. O'RILEY: A: Yes. I mean, they -- their word is,  
20 it would be -- likely -- "it would likely be  
21 technically feasible to maintain Burrard as a source  
22 of 900 megawatts of defensible capability that's  
23 capable of producing 600 to 6,000 gigawatt hours of  
24 firm energy for the 20-year planning horizon." So,  
25 their terms of "would likely be technically feasible",  
26 I think, is exactly what they're saying.

1 MR. OULTON: Q: Yeah. And what it talks about is that  
2 there is some risk from a technical perspective -- if  
3 you're operating at 6,000, that there's going to be an  
4 increased likelihood of failures and outages, because  
5 you're operating at or near the full capability of the  
6 plant, correct?

7 MR. O'RILEY: A: Yes.

8 MR. OULTON: Q: And again, that is based on the  
9 assumption that the plant is operating at 6,000 in  
10 most years, correct?

11 MR. O'RILEY: A: That is correct.

12 MR. OULTON: Q: Would you agree with me that the risks  
13 that AMEC is identifying with respect to outages and  
14 the like, as a result of the operation, will actually  
15 be less if Burrard is operated below 6,000, in most  
16 years?

17 **Proceeding Time 9:05 a.m. T10**

18 MR. O'RILEY: A: Sorry, can you say that again, please?

19 MR. OULTON: Q: Would you agree that the risks that  
20 AMEC has identified in its report with respect to  
21 operating at 6,000 would be less, if Burrard is  
22 actually operated at a lower level in most years, even  
23 if it has a technical capability of going higher?

24 MR. O'RILEY: A: Yeah, I mean, what they're saying -- I  
25 mean, practically, if you run the plant hard, which is  
26 what 6,000 gigawatt hours, you're putting hours on all

1 the rotating components, all the thermal components,  
2 and there is a risk associated with that. I think as  
3 Mr. Austin helpfully pointed out, there is -- I mean,  
4 it is an old plant and there is a baseline level of  
5 risk here that exists regardless and we live with  
6 today. But I would agree with you that if we're  
7 putting hours on the plant, that risk would increase.

8 MR. OULTON: Q: Yes, so if in actual operation Burrard  
9 comes in, whether you're talking the 3,000 planning  
10 scenario or 6,000, significantly below that, the risk  
11 of outages will be correspondingly lower.

12 MR. O'RILEY: A: Yeah.

13 MR. OULTON: Q: That there'll be fewer hours on the  
14 plant.

15 MR. O'RILEY: A: There will be fewer hours. And I  
16 would just make the point that I expect the plant will  
17 run more over time, more hours will get put on the  
18 plant if we rely on it for 6,000 versus 3,000, which I  
19 think I made that point earlier.

20 MR. OULTON: Q: You did.

21 If we turn to page 5-30 of the application,  
22 there's a Table 5-6 here that sets out -- and I  
23 believe these are AMEC's estimates, correct, of the  
24 annual OMA and capital funding that would be required  
25 in the various scenarios?

26 MR. O'RILEY: A: That is correct. They're AMEC

1 estimates.

2 MR. OULTON: Q: And again, these numbers are based on  
3 assumptions that the plant in most years would operate  
4 at or near the planning level that's set out there,  
5 correct?

6 MR. O'RILEY: A: Well, yes and no. I mean, Scenario 1  
7 -- well, yes. The numbers are tied to the operating  
8 hours assumed in the scenario.

9 MR. OULTON: Q: Yeah. Scenario 1 is pretty much the  
10 base number. Going forward, AMEC's saying B.C. Hydro  
11 is likely to incur those expenses over a 20-year  
12 horizon, if it just wanted to operate at 600 gigawatt  
13 hours.

14 MR. O'RILEY: A: Yes.

15 MR. OULTON: Q: And those expenses would be common in  
16 all the other scenarios as well, correct? There would  
17 be a base level of expenditure whether you're talking  
18 600, 3,000 or 6,000.

19 MR. O'RILEY: A: Well, the base -- yeah, Scenario 1 is  
20 the base level of expenditure, and you can see most of  
21 the costs are incurred to get you to Scenario 1, so.

22 MR. OULTON: Q: Yeah, and I believe yesterday in your  
23 discussions, I think it was with Mr. Weafer but I may  
24 be mistaken, you talked about the incremental  
25 difference between 2 and -- or between Scenario 2 and  
26 4,000 was going to be marginal. It would be like a

1 million or 2 million --

2 MR. O'RILEY: A: Well, I said it was in the -- I think  
3 what I said is it's between 2 and 3, and there's --  
4 for example on the capital in the first line there's a  
5 \$4 million difference there. So that's probably  
6 within the margin of error of what we're talking  
7 about, given the amount of work that's been done.

8 MR. OULTON: Q: And similarly between the 3,000  
9 gigawatt hours and 6,000 gigawatt hours, the  
10 difference if you look at capital is \$4 million. If  
11 the plant isn't operated at 6,000 but some lower  
12 number, the number would move closer to the 31 million  
13 for the 3,000 gigawatt hours. Would that be fair to  
14 say?

15 MR. O'RILEY: A: Well, some of the incremental costs  
16 associated with going to 3 would be based on running  
17 hours, so.

18 MR. OULTON: Q: And similarly 3 to 6. And these aren't  
19 hugely material costs in connection with the overall  
20 operations. We're talking a couple million dollars a  
21 year.

22 MR. O'RILEY: A: Yeah. Not in context of the numbers  
23 we talked about in terms of the impacts on the system.

24 MR. OULTON: Q: I'd like to now turn to the social  
25 licence question and just ask a few follow-ups from  
26 yesterday. At one point yesterday I believe, Mr.

1 O'Riley, you pointed me to Figure 8 in the application  
2 which is at 5-28. Figure 5-8 on page 5-28.

3 **Proceeding Time 9:10 a.m. T11**

4 MR. O'RILEY: A: I have that.

5 MR. OULTON: Q: And I believe, when we were talking  
6 about this yesterday, this is a scenario that -- or a  
7 model that was generated that essentially mirrors  
8 Scenario 3B that was put to Dr. Preston. Is that  
9 correct?

10 MR. O'RILEY: A: That is correct.

11 MR. OULTON: Q: And if you turn to the page prior to  
12 the figure, page 5-27 of the application, there's a  
13 description of what that sets out, and from that  
14 paragraph, midway through, there's a sentence that  
15 says:

16 "These capability assessments do not include  
17 displacement by non-firm energy from  
18 external markets."

19 That's an assumption that you gave to Dr. Preston as  
20 well?

21 MR. O'RILEY: A: No. Well, we didn't give that  
22 assumption to Dr. Preston, we created the scenario  
23 based on that assumption and we gave the scenario to  
24 Dr. Preston, and we gave the scenario because, again,  
25 back to the principle that we didn't want to rely on  
26 -- in creating a scenario, we didn't want to rely on

1 the assumption that the plant wouldn't run, in order  
2 to support an argument in favour of its capability at  
3 that level. We needed to come up with a realistic  
4 scenario for that, and we came up with this scenario,  
5 which we believe is realistic, because during critical  
6 water years -- or critical or low-water years, which  
7 is the years here where there's significant generation  
8 from Burrard, that's when you would be most likely to  
9 see adverse prices from the market and thereby choose  
10 not to rely on them, or not to purchase energy from  
11 the market. And instead, purchase energy from  
12 Burrard.

13 So we believed this was a reasonable  
14 scenario to assess social licence risk for the 6,000  
15 gigawatt hour planning reliance, and in fact was more  
16 reasonable than the 6,000 which we felt really set the  
17 bar too high. So that's why we moved from scenario 3A  
18 to 3B.

19 MR. OULTON: Q: Was part of the scenario that you gave  
20 to Dr. Preston -- I take it you gave her the results  
21 of this table showing what the operation was.

22 MS. PRESTON: A: No, no. What they gave me is exactly  
23 what is set out on page 4 of 250, of Appendix J-3.  
24 And it was a statement.

25 "Scenario 3B: as a base-load plant with the  
26 following pattern during a 60-year period,

1           6,100 gigawatt hours per year for four low-  
2           water years, 5,000 gigawatt hours per year  
3           for one low-water year, and no more than  
4           3,000 gigawatt hours per year for the  
5           remaining 55 years."

6           So I was not given that figure.

7 MR. OULTON:   Q:    The "no more than 3,000 gigawatt hours  
8           per year," is that based on the average annual  
9           generation that was determined from figure -- the data  
10          that lies behind Figure 8 of 2,6000 gigawatt hours per  
11          year, which is set out at the end of the last  
12          paragraph on 5-27?

13 MR. O'RILEY:   A:    Well, I should -- so, I mis-spoke  
14          there. We -- yes, we gave the scenario as it was  
15          written there. We drew from this figure to create the  
16          scenario.

17 MR. OULTON:   Q:    Yes. And the assumption that you gave  
18          Dr. Preston of no more than 3,000 gigawatt hours per  
19          year, that's based on the average annual generation of  
20          2,600 gigawatt hours that you've determined?

21 MR. O'RILEY:   A:    Roughly, yes.

22 MR. OULTON:   Q:    And, again, that doesn't include any  
23          displacement by non-firm energy from the markets,  
24          correct?

25 MR. O'RILEY:   A:    That's what -- yes, that's what it  
26          says on page 5-27.

1 MR. OULTON: Q: The reality is, B.C. Hydro intends to  
2 displace Burrard, even on a go-forward basis, in non-  
3 critical water years with non-firm energy from the  
4 markets. Isn't that correct?

5 MR. O'RILEY: A: B.C. Hydro will operate the plant, as  
6 we do today, and dispatch the plant economically,  
7 taking into account all the variable costs, operating  
8 costs, gas costs, carbon tax offsets and such.

9 MS. PRESTON: A: And I would say as well that from a  
10 social licencing perspective, what is key is the  
11 potential to operate at 6100 gigawatt hours per year  
12 for four out of the 60 low-water years. So, the -- we  
13 didn't look at the exact detail of this, so the 3,000  
14 actually isn't that material to our conclusion. So if  
15 you remove that 3,000 from that scenario, our  
16 conclusions would remain the same.

17 MR. OULTON: Q: So it won't have any impact on your  
18 assessment of the social licence if the plant were to  
19 operate on an annual average of 1500 gigawatt hours  
20 per year as opposed to 3,000?

21 MS. PRESTON: A: No, because part of a social licence  
22 depends upon the permitting, and also, again, people  
23 won't understand the difference between planning to  
24 operate at 6,000, but don't worry, we'll never  
25 actually operate at that, or only a few years.  
26 Really, what is key for the public is the maximum

1 possible that the facility could be operated at.

2 MR. O'RILEY: A: We believe that the planned reliance  
3 and the actual reliance are both important inputs into  
4 the social licence equation. So whether it's 3,000 or  
5 600 or 6,000 matters in terms of the social licence.

6 **Proceeding Time 9:15 a.m. T12**

7 MR. OULTON: Q: So I may have misunderstood what you  
8 just said, Mr. O'Riley, but I think if I didn't, it  
9 seems at odds with what Dr. Preston said. You said  
10 the planned reliance and the actual reliance are both  
11 material with respect to social licence.

12 MR. O'RILEY: A: Yeah, and --

13 MR. OULTON: Q: So from your perspective it would be  
14 material if the plant on average was operating at 1500  
15 gigawatt hours per year as opposed to 3,000.

16 MR. O'RILEY: A: Well, I'm saying both matter. I mean,  
17 we can tell -- we know both matter because different  
18 -- like the City of Port Moody, for example, liked the  
19 fact that the plant doesn't run very much. Metro  
20 Vancouver and the Province are both interested in the  
21 plant reliance. So different things matter to  
22 different people. The social licence isn't -- it's  
23 not like a driver's licence you get from one place and  
24 they have one set of criteria. It's something you get  
25 from the broader community, and the air quality people  
26 certainly focus on the planned reliance. Others focus

1 on the actual.

2 MR. MATHESON: A: Maybe I can make the point, this  
3 speaks to why we think we've found a very good and  
4 elegant solution to the question of Burrard in the  
5 long term. There are many different competing  
6 interests when it comes to this plant. And Mr.  
7 Oulton, your clients represent one of those, which is  
8 why you're trying very hard to have us characterize it  
9 at 6,000. There are others who want us to  
10 characterize it, virtually nothing for energy, and we  
11 think we've found a very elegant solution to that by  
12 coming up with a connection between what we can plan  
13 on it for, what it actually operates for, and  
14 hopefully it's the right answer for our ratepayers.

15 MR. O'RILEY: A: I think -- if I can just say what I  
16 think we're doing here follows on what Mr. Matheson  
17 said. There was a comment, I believe from the Chair,  
18 in a discussion with Mr. Elton, about there being  
19 Burrards. And I think there have been two Burrards.  
20 So we have this planning Burrard that we've relied on  
21 in recent years for 900 megawatt and 6,000 gigawatt  
22 hours, and that was during a time between 2003 and  
23 2008 when all the units weren't in service for  
24 generation, were not available for generation. And  
25 then we had an operating -- or physical plant, where  
26 there's peak capacity, we draw up for peak capacity,

1 for short-term energy, for voltage support. And  
2 there's always been a sense among intervenors and  
3 others that there's a disconnect between the two, and  
4 I've heard that personally in -- like the Heritage  
5 Contract inquiry, we spoke about that disconnect.  
6 It's come up, it's highlighted in the Energy Plan, and  
7 Mr. Elton spoke to that. And it's really this lack of  
8 belief in the technical capability, the economic  
9 capability and the social licence, though we didn't  
10 call it that. We didn't have the term "social  
11 licence" so we kind of talked around it. Lack of  
12 capability to deliver the planned amounts. And I  
13 think this concept of social licence really helps us  
14 understand.

15 And I think what we're trying to do here is  
16 we're trying to close this disconnect, trying to bring  
17 these two plants together. And the previous approach  
18 that was recommended in the last IEP was in fact not  
19 to rely on it for anything beyond 2014 and just keep  
20 it as an operational resource so there would be no  
21 disconnect there.

22 The value of the plant, as Mr. Matheson  
23 suggests, has caused us to rethink that. And the  
24 implementation of SD 10 and the definition of "capable  
25 of" forces us to resolve this distinction between the  
26 planning and the operating grounds. It's really no

1 longer tenable to rely on an amount that's much  
2 greater than the technical and social licence  
3 capability.

4 And really, so the recommendation that  
5 we're putting forward here does two things to close  
6 this gap. One, we're reducing the energy reliance  
7 from 6,000 to 3,000 and extending that beyond 2014.  
8 And we're also investing in the plant to improve its  
9 capability.

10 So I think in the future there will be one  
11 Burrard that we talk about, and we've aligned the  
12 planning and operating views through our  
13 recommendation. And I think it's a pretty good  
14 solution that provides a good balance between the  
15 economic benefits offered by the plant to the larger  
16 portfolio, the reliability benefits, particularly on  
17 the capacity side. And that's really important to me  
18 and the many Energy Plan objectives we're trying to  
19 achieve, and the broader social licence questions that  
20 are in play.

21 **Proceeding Time 9:20 a.m. T13**

22 MR. OULTON: Q: One question to follow up on something  
23 before, and I just want to ask it before I forget, and  
24 then I'm going to come back to what you just said, Mr.  
25 O'Riley, and that's you talked before about the  
26 province being interested in the planning reliance.

1           The province is also supportive of B.C. Hydro  
2           continuing to rely on Burrard for its very important  
3           back-up and system support function. Is that fair to  
4           say? We saw that in the Energy Plan.

5 MR. O'RILEY:    A:    I think Mr. Elton dealt with that, on  
6           Panel 1.

7 MR. OULTON:    Q:    But to the extent that you said the  
8           province is interested in the planning reliance,  
9           that's not the only thing that the province is  
10          interested in with respect to Burrard.

11 MR. O'RILEY:   A:    No. But it's a -- yes, they are  
12          interested in a number of aspects of Burrard,  
13          including the environmental implications and the  
14          social licence question, and many other aspects of  
15          Burrard.

16 MR. OULTON:    Q:    Now, turning back to this, two Burrards  
17          versus one Burrard that you just discussed, as I  
18          understand it the two Burrards before was -- there was  
19          a difference between the level you planned to rely on  
20          Burrard for and what it actually operated in in most  
21          years. Correct?

22 MR. O'RILEY:    A:    Well, the distinction I would make  
23          between the two Burrards is, it wasn't in fact capable  
24          of delivering to the planned amount. And that's the  
25          key distinction. It's not the distinction between  
26          what it -- we planned on it for and what it did. In

1 fact, it wasn't capable. And the point I made is,  
2 between 2003 and 2006 we only had three units in  
3 service there, as -- in generating mode. And then  
4 because of load growth in a -- very, very significant  
5 load growth in the last few years, we brought back an  
6 additional unit in each of the three years. So now we  
7 have six units back in service for generating  
8 capability.

9 So the disconnect is more around the  
10 capability than the actual versus planned amounts.

11 MR. OULTON: Q: But going to your point of, there's  
12 going to be one Burrard, Burrard isn't going to be  
13 operated in most years at 3,000 gigawatt hours per  
14 year going forward. Correct?

15 MR. O'RILEY: A: But -- it may not, but it will have  
16 the capability to. And that is the crux of our  
17 argument here. And that, we think, is the requirement  
18 that we've got with SD 10, and in fact I think it's a  
19 requirement under our planning criteria that have been  
20 endorsed by the Commission prior to -- for the period  
21 prior to 2016. That is the key that we're trying to  
22 achieve here.

23 MR. OULTON: Q: I'd like to turn now to a couple of  
24 questions about SD 10. As I understand it, B.C. Hydro  
25 still intends to displace Burrard's capacity where it  
26 makes sense from an economic perspective in any given

1 year, with other, more economic sources of non-firm  
2 market, et cetera.

3 MR. MATHESON: A: Displaces capacity, or energy?

4 MR. O'RILEY: A: I think a number of us have answered  
5 that question. I think Mr. Elton answered that. I've  
6 answered it about six times.

7 MR. OULTON: Q: Yeah, and there's nothing in SD 10 that  
8 changes B.C. Hydro's ability to do that.

9 MR. O'RILEY: A: I think we've answered that question.

10 THE CHAIRPERSON: That is a "yes", then, is it?

11 MR. O'RILEY: A: Yes.

12 MR. OULTON: Q: Yeah.

13 THE CHAIRPERSON: Good.

14 MR. OULTON: Q: I'd like to turn to one last area, and  
15 I'll have a few questions about it, but I expect this  
16 may be something that Mr. Godsoe and I have to address  
17 in argument. But this has to do with the response  
18 given to COPE IR 3.4.1. Do you have that?

19 Do you have that, Mr. Chairman?

20 **Proceeding Time 9:25 a.m. T14**

21 THE CHAIRPERSON: I've got it, yes, thanks, Mr. Oulton.

22 MR. OULTON: Q: Now, the request that was made was  
23 whether there's any provision in the Heritage Contract  
24 or related legislation that prevents B.C. Hydro from  
25 considering the financial impact that a new energy-  
26 intensive industrial load would have on existing

1 customers, and then if it considered it appropriate to  
2 do so, apply to the BCUC not to serve that load. You  
3 appreciate that that was the request that was made?

4 MR. MATHESON: A: Yes.

5 MR. OULTON: Q: All right. And the answer given talks  
6 about assuming that the major new energy-intensive  
7 industrial load would be served at transmission  
8 voltage. The terms and conditions would be prescribed  
9 by the supplements to the tariff referred to in  
10 section 3, Heritage Special Direction HC2. As I read  
11 Heritage Special Direction HC2, and we can look at if  
12 you'd like, I believe it's at Appendix B-4 to the LTAP  
13 application in Exhibit B-1-1, section 3 of that  
14 Special Direction talks about the criteria that must  
15 be applied in setting rates, as I read it, for  
16 transmission rate customers. Section 3(1) says:

17 "In designing rates for the Authority's  
18 transmission rate customers the Commission  
19 must ensure that those rates are consistent  
20 with recommendations 8 to 15 in the  
21 Commission's report.

22 Subsection (2) says,

23 "Without limiting subsection (1), the  
24 Commission must ensure the following: that  
25 the rates are subject to the terms and  
26 conditions found in the supplements."

1                   The request that was made in 3.4.1 deals  
2                   with whether or not there's any provision preventing  
3                   B.C. Hydro from applying for relief from the  
4                   obligation to serve. I don't understand the response,  
5                   is really where I come from, that talks about rates.  
6                   I'm talking about the obligation to serve. If you're  
7                   setting rates, you're presupposing that the obligation  
8                   to serve is there and you're dealing with that, and I  
9                   don't take issue that if there's an obligation to  
10                  serve, the rates are set in accordance with the  
11                  tariffs and the supplements.

12 MR. GODSOE:    Mr. Chair, the relief provisions are found  
13                  in Section 28, and I think this is a matter for legal  
14                  argument.

15 MR. OULTON:    I thought it might be, but I just wanted to  
16                  understand the response, because I didn't think that  
17                  it was fully responsive to the request of --

18 MR. GODSOE:    I think we can have a debate and argument  
19                  over Section 28(3) of the *Utilities Commission Act*,  
20                  which deals with relief, but that's a legal issue.

21 MR. OULTON:    I'm comfortable to leave it to that. The  
22                  only reason I raised it with this panel is it was  
23                  indicated that they were responsible for this IR  
24                  response, and so I didn't know if they had any views  
25                  outside of legal opinion and so on.

26 THE CHAIRPERSON:   Are any of these gentlemen charged with

1 administering the electric tariff?

2 MR. GODSOE: I think we've given a description of the  
3 tariff. I think Mr. Rich could walk you through the  
4 steps. But I don't think that's what my friend is  
5 asking.

6 My friend is asking around relief from  
7 service, and that is a legal issue.

8 THE CHAIRPERSON: Very good.

9 MR. OULTON: Perhaps I can ask this question. I'll leave  
10 it to my friend to consider it.

11 MR. OULTON: Q: You understand there are opportunities  
12 for B.C. Hydro to seek relief from the Commission from  
13 its obligation to serve under the *Utilities Commission*  
14 *Act*?

15 MR. RICH: A: Yes.

16 MR. OULTON: Q: And is it your understanding that B.C.  
17 Hydro would be precluded from doing so in the  
18 circumstances set out in IR Request 3.4.1?

19 MR. RICH: A: I think the IR speaks to the Commission's  
20 jurisdiction. Again I think we're getting into legal  
21 argument.

22 MR. OULTON: Those are my questions, Mr. Chair.

23 THE CHAIRPERSON: Thank you, Mr. Oulton.

24 **Proceeding Time 9:30 a.m. T15**

25 MR. FULTON: Good morning, again.

26 THE CHAIRPERSON: Mr. Fulton. Some time in the next 20

1           minutes, when it's convenient to you, Mr. Fulton, will  
2           you tell me when it makes sense for you -- for us to  
3           take a break?

4 MR. FULTON:    Yes, I shall.

5 THE CHAIRPERSON:   Thank you.

6 **CROSS-EXAMINATION BY MR. FULTON:**

7 MR. FULTON:    Q:    Good morning, panel.  I'd like to begin  
8           with a question that arises in Exhibit -- out of  
9           Exhibit B-12, BCUC IR 3.276.1.  And this, just for  
10          clarification and if Mr. Godsoe wishes to address this  
11          in argument, that's fine.

12                    But the response to 3.276.1 refers to COPE  
13           3.4.1 that you were just addressing with Mr. Oulton a  
14           few moments ago.  And if you turn back to that COPE  
15           response, B.C. Hydro -- and I'll let you read it and  
16           you can tell me, then, when you finish reading it.

17                    All right, thank you.  And would you agree  
18           with me that in the response to COPE, B.C. Hydro  
19           appears to have narrowed the discussion to supply at  
20           transmission voltage?

21 MR. RICH:     A:    Yes, I believe that's correct.

22 MR. FULTON:    Q:    Okay.  And does the same answer also  
23           apply to distribution voltage?  So, if a customer is  
24           connecting at distribution voltage, would the answer  
25           still apply?

26 MR. RICH:     A:    I believe so, subject to check.  I

1 believe that would be the case.

2 MR. FULTON: Q: Okay. And could you tell me why you  
3 believe that to be the case?

4 MR. RICH: A: I believe just on the general principle  
5 of a customer seeking electricity service and meeting  
6 the terms and condition as a distribution voltage  
7 customer would have access to the prevailing tariff.

8 MR. FULTON: Q: Right, thank you.

9 MR. MATHESON: A: We didn't -- we certainly didn't  
10 intend to be restrictive. I think we were trying to  
11 answer the question as it was posed, which was on the  
12 very last sentence, "significant adverse impact that  
13 such a major new industrial load can have". And  
14 that's why we -- I think that's why we crafted the  
15 response the way we did.

16 **Proceeding Time 9:35 a.m. T16**

17 MR. FULTON: Q: Thank you. If I could next ask you to  
18 turn to Exhibit B-10, and the next series of questions  
19 I have relate to electrification, and specifically the  
20 discussion at pages 10 through 12, and I'm just using  
21 those pages as a reference point for you. They relate  
22 to the new electrification scenarios in any event, and  
23 you don't need to turn to those -- that discussion,  
24 but this is what I'm framing my questions on.

25 And yesterday, there was a discussion, and  
26 I'll take you to the transcript references

1           momentarily, between both Mr. Weafer, I believe, and  
2           Mr. Matheson, and also Mr. Bertsch and Mr. Ince and  
3           Mr. Matheson, in the context of -- I believe, of the  
4           plug-in vehicle. So, the reference to transcript  
5           volume 7, the first reference that I want to take you  
6           to is page 1120. And so, just on page 1119, at line  
7           17, there's a discussion about electric vehicles, and  
8           then at lines 7 through 9 of page 1120, your answer,  
9           in part, Mr. Matheson, was:

10                        "But as to whether we've seen any markers  
11                        about that level of penetration when, I  
12                        don't believe that exists out there right  
13                        now."

14                        And then if we turn forward to 1161, Mr.  
15           Bertsch referred the panel first to Exhibit B-12,  
16           which was the ESVI IR 3.1.4, and that's at page 1160  
17           -- about electric plug-in vehicles. And read the  
18           response at page 1181. And then there was a  
19           discussion with a response from Mr. Ince at --  
20           beginning at line 17, talking about electric vehicles  
21           and what the risks might be of -- or the threat might  
22           be of people getting off work and plugging in their  
23           vehicles right away at high demand times.

24                        Do you recall that discussion, Mr. Ince?

25           MR. INCE:    A:    At five to six p.m., and increasing the  
26           capacity requirements for B.C. Hydro.

1 MR. FULTON: Q: Okay. And so, appreciating that what's  
2 being discussed here is -- in the evidentiary update  
3 on electrification initiatives, et cetera, is all sort  
4 of potential demand, that's right.

5 MR. INCE: A: I'm sorry, Mr. Fulton, you said  
6 initiatives. I would characterize these as scenarios.

7 MR. FULTON: Q: Pardon me? Scenarios, yes.

8 MR. INCE: A: We're not actively involved in these.

9 MR. FULTON: Q: Right, okay. But given that you've  
10 considered some of these scenarios for the purposes of  
11 the evidentiary update, presumably, then, you've also,  
12 at least at a high level, considered what might be the  
13 case in terms of potential rate structures, and I  
14 don't mean specific rate structures, but whether, for  
15 example, the rate structures might form part of the  
16 present rate structure classes or they might be  
17 separate, there might be new rate classes.

18 Have you had those considerations at a high  
19 level?

20 MR. INCE: A: So, I'll start out in that -- remember  
21 yesterday we talked about electric vehicles and  
22 encouraging customers to do the right thing, in terms  
23 of the behaviour of these vehicles. And I indicated  
24 they represented an opportunity or a threat, the  
25 threat being, as you indicated, that people would come  
26 home and they would increase their peak demand during

1 the super-peak period. The opportunity potentially  
2 being that these vehicles perhaps could provide a  
3 source of capacity, that they could be connected to  
4 the grid and then feed back into the grid during these  
5 peak periods. But again, these are hypotheticals.

6 In terms of rate structures that might  
7 derive from that, I think the only thinking that we  
8 did in terms of answering this IR was thinking of  
9 those high-level scenarios, that those high-level  
10 solutions to the problem, in terms of a wider  
11 initiative within B.C. Hydro to solve this problem or  
12 brainstorm on this problem, I don't think it's gone  
13 very far.

14 **Proceeding Time 9:40 a.m. T17**

15 MR. MATHESON: A: I think it's a little premature to  
16 try to pin down how we might respond to this issue by  
17 the use of rates and rate structures. I mean, there  
18 are too many unanswered questions, and I think we  
19 talked a little bit about this over the last couple of  
20 days, in the sense that first of all, we don't know  
21 what infrastructure is going to need to be in place  
22 for people to take power from the grid and put it back  
23 on. We also don't know what Smart Meter initiative  
24 might be used to facilitate that, and that's been the  
25 course of some discussion during these hearings. And  
26 we don't know what the penetration rate and what load

1           this actually will represent, and until we start to  
2           get a handle around some of those issues, it'll be  
3           hard for us to sort of talk in specific terms about  
4           how we might use rates and rate structures in order to  
5           respond to it, but it'll come in time.

6 MR. FULTON:    Q:    And I'm not so concerned about the  
7           specific rate structures. I'm just looking at things  
8           at a higher level, given that you've presented these  
9           scenarios in the update.

10                        Has B.C. Hydro considered whether, at this  
11           point at least, at the high level, that the demand  
12           curves might be different for these types of  
13           initiatives than they are presently for the various  
14           classes of customers?

15 MR. INCE:    A:    Yes, they could be very different, and  
16           that's why we talk about encouragement in that they  
17           could be very detrimental in terms of increasing the  
18           peak period, or it could be a benefit in terms of  
19           decreasing it. But again, the devil's in the details  
20           in terms of the technology, the penetration rate of  
21           the technology, implementation of the technology, the  
22           rate structures around that. There's a wide range of  
23           potential problems and solutions to this.

24 MR. MATHESON:   A:    We take your point, Mr. Fulton. A  
25           demand curve could be different here. We don't know,  
26           but it could be.

1 MR. FULTON: Q: Thank you.

2 If I could ask you to move forward to page  
3 29 in Exhibit B-10, and that's Table 2-10, and  
4 approximately halfway down the page you have two  
5 sections. One relates to the demand integrated system  
6 total gross requirements, and you have a high, mid and  
7 low load forecast, and then you also have a load after  
8 DSM scenario at those three load levels, correct?

9 MR. MATHESON: A: Yes, that's correct.

10 MR. FULTON: Q: And can you tell me whether or not  
11 those numbers are before rate impact or after rate  
12 impacts?

13 MR. INCE: A: So in terms of the load, we would have  
14 done on an after rate impact basis.

15 MR. FULTON: Q: And would you agree with me, then, that  
16 the rate impacts represent real price increases?

17 MR. INCE: A: When B.C. Hydro calculated the effects of  
18 the rate increases, it did them on a real rate  
19 increase basis, not nominal, real dollar increases.

20 MR. FULTON: Q: All right.

21 MR. INCE: A: So just to make that completely clear, if  
22 there was a 2.1 percent rate increase which matches  
23 our inflation, we made the assumption that would not  
24 affect rate induced behaviour.

25 MR. FULTON: Q: Can I ask you then to turn to Exhibit  
26 B-4-3, and IR 2.174.1. Now, this was an IR that was

1 directed to Panel 1, and I did ask Panel 1 some  
2 questions on this. But in light of your answer a  
3 moment ago, I just want to seek some clarification, if  
4 I can, of part of that answer. So it's Exhibit B-4-3,  
5 the response to IR 2.174.1. Yes, 2.174.1.

6 MR. MATHESON: A: Sorry.

7 **Proceeding Time 9:45 a.m. T18**

8 MR. FULTON: Q: Okay. And perhaps it would be best if  
9 you read the question and then the -- I'm going to ask  
10 you about the revised response, so if you just read  
11 the question and the revised response, and then I'll  
12 ask my question.

13 And the clarification I'm seeking is the  
14 second -- for the second sentence in the revised  
15 response, where the statement appears:

16 "Additionally, B.C. Hydro does not believe  
17 it would be reasonable to assume real price  
18 increases in the first ten years of the  
19 forecast."

20 Is the reference to "first ten years" correct? Or  
21 should it be last ten years, given the comment that  
22 you made about the real prices that we asked about  
23 earlier?

24 MR. INCE: A: Yes, that's a good catch. This should be  
25 to the last ten years of the forecast.

26 MR. FULTON: Q: All right, thank you.

1 MR. MATHESON: A: That's correct.

2 MR. FULTON: Mr. Chairman, this would be a good time to  
3 take the morning break.

4 THE CHAIRPERSON: Hang on. Wait a minute, sorry, Mr. --  
5 I apologize. I just want to get clear in my mind.  
6 Today is the 26<sup>th</sup>, is it?

7 MR. FULTON: Yes.

8 THE CHAIRPERSON: And we're going to finish Panel 2  
9 today.

10 MR. FULTON: Yes.

11 THE CHAIRPERSON: Tomorrow is Friday, we can start with  
12 Panel 3. Panel 3 may come on, take over till Monday.

13 MR. FULTON: Yes, I think there is a potential for that  
14 happening.

15 THE CHAIRPERSON: And then Panel 4 comes up on Monday.  
16 We have Panel 4 all day Tuesday.

17 MR. GODSOE: Correct.

18 THE CHAIRPERSON: And then Wednesday we have the two  
19 IPPBC witnesses.

20 MR. GODSOE: That's my understanding.

21 THE CHAIRPERSON: And then what happens -- we get rid of  
22 them in one day?

23 MR. FULTON: I don't know, because I don't have any  
24 estimates from people on that in any event.

25 MR. GODSOE: And we'll give Mr. Fulton our estimate. It  
26 won't be a long one.

1 THE CHAIRPERSON: I just want to get some sort of feel.  
2 So, Thursday we may have finished --

3 MR. GODSOE: Oh, sorry, and then I think there's a  
4 proposal Mr. Andrews can speak to further. I don't  
5 think we're suggesting extending the hearing hours on  
6 the 4<sup>th</sup>, but if IPPBC's panel is finished the two  
7 members, then BCSEA's panel would start. But Mr.  
8 Andrews would have to split his case, because I  
9 absolutely have to have my panel back on on the 5<sup>th</sup>.  
10 If you have any further questions, I think Mr. Andrews  
11 can speak to that.

12 THE CHAIRPERSON: Mr. Andrews?

13 MR. ANDREWS: Yes, Mr. Chairman. It would certainly be  
14 ideal for Mr. Plunkett's scheduling, since he's coming  
15 from New England, to start him on the 4<sup>th</sup>. So that,  
16 you know, in the hope that we would be able to finish  
17 both the IPP witnesses and Mr. Plunkett on the 4<sup>th</sup>.

18 THE CHAIRPERSON: Okay. And on the 5<sup>th</sup> we're back to  
19 Panel 4.

20 MR. GODSOE: We are back to Panel 4.

21 THE CHAIRPERSON: If necessary.

22 MR. GODSOE: I would have thought that would be  
23 necessary.

24 THE CHAIRPERSON: Okay. And March the 6<sup>th</sup> --

25 MR. GODSOE: Panel 4.

26 THE CHAIRPERSON: Oh, we're going to see a lot of Panel

1 4, aren't we?

2 MR. GODSOE: Well, it is where the spending dollars are,  
3 Mr. Chairman.

4 THE CHAIRPERSON: I guess. How many other witnesses do  
5 we have? We've got Mr. -- the finance is there --

6 MR. GODSOE: Yeah, my understanding -- Mr. Austin can  
7 speak to this, but my understanding is, Mr. Ball would  
8 then come up on IPPBC's panel once my panel was done.

9 THE CHAIRPERSON: Okay.

10 MR. GODSOE: And then BCSEA's panel, if we're not able to  
11 finish. And I actually have some fairly lengthy cross  
12 for that panel. For BCSEA's panel.

13 THE CHAIRPERSON: Okay.

14 MR. AUSTIN: I just wanted to clarify some of my previous  
15 comments, Mr. Chair. I should check with Mr. Ball in  
16 terms of his availability before I commit him to a  
17 specific date. I don't think he'll appreciate me  
18 committing him to a specific date without me at least  
19 asking him.

20 THE CHAIRPERSON: Okay, so -- I mean, if the universe  
21 evolves as I think I'm hearing, some time on March the  
22 9<sup>th</sup> we will probably be finished with Messrs. Ball and  
23 Plunkett.

24 MR. GODSOE: I don't know that I can quite speak to that.  
25 I don't have the estimates for Panel 4. I mean, that  
26 is a very important panel, and I'm estimating it will

1 still be on the 9<sup>th</sup>. Maybe it will be done the 6<sup>th</sup>, but  
2 there is a chance it might be the 9<sup>th</sup>.

3 THE CHAIRPERSON: Okay.

4 MR. GODSOE: So I think we need to get that ground down,  
5 the estimates for Panel 4.

6 THE CHAIRPERSON: But in any case -- where is Mr. Oulton?  
7 We will not see Dr. Shaffer or -- not Dr. Shaffer, is  
8 not planning to visit us until March the 11<sup>th</sup>.

9 MR. OULTON: Yes, unfortunately that is true. He was  
10 available to come prior to that, but as I indicated,  
11 that was not B.C. Hydro's preference and I believe  
12 they will be one of the primary people cross-examining  
13 Dr. Shaffer and it's --

14 THE CHAIRPERSON: Who will be the IPPBC?

15 MR. OULTON: Well, I expect they will also want to say a  
16 few words to Dr. Shaffer.

17 THE CHAIRPERSON: Yes. Okay. There's no way Dr. Shaffer  
18 can be here on the 10<sup>th</sup>.

19 MR. OULTON: Unfortunately not. That's the earliest  
20 flight that week from where he is, in Laredo.

21 **Proceeding Time 9:51 a.m. T19**

22 THE CHAIRPERSON: Okay. Thank you, we will break for 15  
23 minutes.

24 **(PROCEEDINGS ADJOURNED AT 9:51 A.M.)**

25 **(PROCEEDINGS RESUMED AT 10:04 A.M.)**

26 THE CHAIRPERSON: Please be seated.

1                   Mr. Fulton.

2 MR. FULTON:    Thank you, Mr. Chairman.

3 MR. FULTON:    Q:    Panel, I'd like to just briefly discuss  
4                   a response to BCUC -- or the response to BCUC IR  
5                   3.244.2 in Exhibit B-12, and the topic is  
6                   electrification.  So BCUC 3.244.2, Exhibit B-12.  And  
7                   I'd like to focus in on the second paragraph of that  
8                   response, where it states that the marginal cost of  
9                   energy is higher than the embedded cost of energy.  
10                  Can you tell me whether the scale is signi -- in terms  
11                  of the marginal cost of energy being higher -- and  
12                  actually, I should have taken, I should also take you  
13                  to the third paragraph where you talk about a  
14                  determination of rates in future revenue requirement  
15                  applications.  And as I take it, B.C. Hydro's marginal  
16                  cost is higher than its marginal revenue from that  
17                  answer, correct?

18 MR. MATHESON:   A:    Yes, that's correct.

19 MR. FULTON:    Q:    Okay.  And from a scale of magnitude  
20                  standpoint, is the cost significantly higher than the  
21                  revenue?

22 MR. MATHESON:   A:    "Significantly" is a relative term.  
23                  I mean, I -- yeah, it's higher.

24 MR. FULTON:    Q:    All right.  So given that it's higher,  
25                  and if one takes into account significant electrical  
26                  -- or significant additional electrification, won't



1 MR. FULTON: Q: And that answer includes a spreadsheet  
2 that shows the load resource gap under the 2008 load  
3 forecast before the 2008 LTAP actions.

4 MR. MATHESON: A: Sorry, can you repeat the question?

5 MR. FULTON: Q: Yes. The response includes a  
6 spreadsheet which shows a load resource gap -- shows  
7 the load resource gap under the 2008 load forecast  
8 before the 2008 LTAP actions. Correct?

9 MR. MATHESON: A: Well, it says, "provided as  
10 attachment 1", and I don't have the attachment here,  
11 so --

12 MR. FULTON: Q: Oh.

13 MR. MATHESON: A: -- we need to find that, I think, if  
14 we're going to respond.

15 MR. FULTON: Q: Okay. Well, maybe what I'll do is,  
16 I'll give you the -- okay, I'll give you the page from  
17 the attachment that I have.

18 MR. MATHESON: A: Thank you. Okay.

19 MR. FULTON: Q: Okay? So, would you agree with me that  
20 that spreadsheet shows the load resource gap under the  
21 2008 load forecast before the 2008 LTAP actions?

22 MR. INCE: A: Yes.

23 MR. FULTON: Q: Okay. And can you confirm for me that,  
24 under the mid-load forecast scenario, the gap is 7,700  
25 gigawatt hours in fiscal 2016, and 10,600 gigawatt  
26 hours in fiscal 2017?

1 MR. INCE: A: Yes, I can.

2 MR. FULTON: Q: Thank you.

3 I'd next like to turn to the issue of GDP  
4 growth and, if you could have before you Exhibit B-18,  
5 and also the response to B-12 IR -- BCUC IR 3.238.2.  
6 So, B-18 and B-12, the response to BCUC IR B 238.2.

7 MR. INCE: A: Yes.

8 MR. FULTON: Q: Okay. And in the response to 3.238.2,  
9 you provided a number of reports, and you also  
10 provided the summary of the real GDP growth rate  
11 projects on page 2 of the response, which is -- has  
12 been updated in B-19, correct?

13 MR. INCE: A: That's right.

14 MR. FULTON: Q: Okay. And --

15 MR. GODSOE: Sorry, as updated by B-18.

16 MR. FULTON: B-18, thank you.

17 MR. GODSOE: Eighteen.

18 MR. FULTON: Q: And just looking at the original table,  
19 the last column has a heading, February 2<sup>nd</sup>, 2008, but  
20 I take it that means -- it really means February 2009.

21 MR. INCE: A: Yes.

22 MR. GODSOE: Yes.

23 MR. FULTON: Q: Okay. And in terms of the columns, are  
24 the columns -- the first two columns in the original  
25 schedule, are they calendar years rather than fiscal  
26 years?

1 **Proceeding Time 10:14 a.m. T21**

2 MR. INCE: A: They would be calendar years.

3 MR. FULTON: Q: Okay. And the inference to be drawn  
4 from the update then, I take it, is that B.C. Hydro  
5 now believes that the zero percent growth forecast by  
6 the Economic Forecast Council for 2009 is more likely  
7 to occur than the 1.8 percent growth embedded in the  
8 load forecast.

9 MR. INCE: A: Again, yes, we depend on third party  
10 experts for these matters, and I'm going to have to go  
11 with the more updated numbers.

12 MR. FULTON: Q: Okay, and --

13 MR. MATHESON: A: Or, I mean, it might be worth making  
14 the point, or something in between. I think the  
15 downward pressure on the load forecast is evident in  
16 this table. I don't know that we're prepared to say  
17 it's going to be zero, but certainly maybe, you know,  
18 it could well be lower than what we had forecast in  
19 the 2008 load forecast.

20 MR. FULTON: Q: Right, and when you say that the  
21 downward pressure is evident, when I look at the  
22 growth figures, the decreases are .9 percent in 2009,  
23 2.4 percent in 2010, and 2.6 percent in 2011.

24 MR. INCE: A: That's right. So the later years, the  
25 growth estimates are actually higher than they were in  
26 the earlier estimates.

1 MR. MATHESON: A: It's really that 2009-2010 period  
2 that is, I think, the moving piece here.

3 MR. FULTON: Q: Right.

4 MR. INCE: A: So what this shows is a deeper trough in  
5 2009 and perhaps a stronger recovery long-term than we  
6 expected earlier.

7 MR. FULTON: Q: Right. And subject to check, the  
8 reduction in the GDP growth compared to the LTAP is  
9 2.7 percent in 2009, .9 percent in 2010, and .02  
10 percent in 2011.

11 MR. INCE: A: Subject to check, yes.

12 MR. FULTON: Q: Yes. Would you agree with me then, if  
13 you ignored compounding, that's approximately a 3.8  
14 percent reduction in the GDP growth rates over those  
15 three years?

16 MR. INCE: A: Well, those three years. But as I  
17 indicated earlier, if you look at the February  
18 Conference Board of Canada Forecast versus the LTAP  
19 forecast, so the columns on the left-hand side versus  
20 the secondmost column on the right side, and you do a  
21 compounding over the entire forecast period, you come  
22 up with essentially the same number, 15 percent  
23 compounded growth by 2012.

24 MR. FULTON: Q: Okay.

25 MR. INCE: A: So you eventually get to the same point.

26 MR. FULTON: Q: In terms of the ultimate decision that

1 the Panel must make in this matter, what forecast is  
2 B.C. Hydro suggesting that the Panel use? Is it the  
3 LTAP forecast, the February Council forecast, the  
4 budget forecast or something else?

5 MR. MATHESON: A: It's the LTAP forecast. Again, you  
6 know, we need to make the point that we try not to  
7 respond in the short term and have sort of currentitis  
8 to these things. And you eventually have to put a  
9 marker down. And then I think you'd begin to look at  
10 a long-term plan, the level of surpluses that we  
11 anticipate, whether those are correct given the  
12 pressures that are on the forecast, what's happening  
13 the economy, and you can make decisions along those  
14 lines. But to sort of move from one forecast to  
15 another month by month, to us, doesn't seem  
16 particularly useful.

17 MR. FULTON: Q: Thank you.

18 If you turn to the response to BCUC IR  
19 3.250.1, that responses provided some detail on B.C.  
20 Hydro's 2008 load forecast. In particular Table A3.6  
21 provided, among other things, the total gross energy  
22 requirements before DSM, but with rate impacts,  
23 correct?

24 MR. INCE: A: That's right. Table 3.6 is before DSM  
25 and including rate impacts.

26 MR. FULTON: Q: Right. And then if you turn forward to

1 the response to 250.2, B.C. Hydro calculated the  
2 sensitivity of the same values to both a 1 percent  
3 increase and a 1 decrease in GDP growth rates for the  
4 first three years of the load forecast, correct?

5 **Proceeding Time 10:19 a.m. T22**

6 MR. INCE: A: That's right. As we discussed with the  
7 Old Age Pensioners yesterday, it's one percent for  
8 each of the first three years in the forecast, so it's  
9 essentially a three percent rise in GDP.

10 MR. FULTON: Q: Right.

11 MR. INCE: A: And then everything the same afterwards.

12 MR. FULTON: Q: Yes, and I have some further questions  
13 arising out of the exchange that you had with Ms.  
14 Worth yesterday.

15 So that in terms, though, of the 2008  
16 forecast gross requirements, for the fiscal years 2016  
17 and 2017, those gross requirements are 67,137 gigawatt  
18 hours.

19 MR. INCE: A: Sorry, you're referring to Table 8-36?

20 MR. FULTON: Q: 8-36, that's correct.

21 MR. MATHESON: A: And what year again?

22 MR. FULTON: Q: 2016/2017, and I'm looking at the  
23 second column from the right.

24 MR. INCE: A: I've got 66,172.

25 MR. FULTON: Q: I've got -- oh, sorry, I'm looking at  
26 the before DSM and with rate impacts.

1 MR. INCE: A: Yes, that is Table 3.6.

2 MR. FULTON: Q: 3.6. And for 2016 to 2017, my numbers  
3 are 67,137. Now it may be that I am looking at the  
4 wrong line, but I can show you if it helps you, Mr.  
5 Ince.

6 MR. MATHESON: A: It's the third line from the right.

7 MR. FULTON: Q: Oh, okay. Thank you.

8 MR. INCE: A: Oh, total gross requirement. 67,137.

9 MR. FULTON: Q: Thank you. And so, would you agree  
10 with me that, under the assumption of a GDP growth of  
11 1 percent for three years, that load would become  
12 65,914 and -- gigawatt hours, and if there was a 1  
13 percent increase, the load would be 68,373 gigawatt  
14 hours. Subject to check.

15 MR. INCE: A: Subject to check, yes.

16 MR. FULTON: Q: And --

17 MR. INCE: A: So, I'd verify those numbers but, again,  
18 the premise of this IR was that -- put GDP numbers  
19 into our forecast and see how the forecast responds.  
20 But as we indicated in the IR response, it's not as  
21 simple as that. We don't do the forecasts based on a  
22 GDP regression. I think we're much more evolved than  
23 that in terms of the complexity and sophistication of  
24 the forecast. So, we do, I think, a much more  
25 detailed forecast than that, which includes industry  
26 reports, consulting reports on the individual sectors

1 in the forecast, and we perhaps did this IR response  
2 somewhat under duress, in that --

3 MR. FULTON: Q: Well, I would hope not, Mr. Ince.

4 MR. INCE: A: Well, I think, as we stated, this is  
5 perhaps a crude approximation to in fact what might  
6 happen to our load forecast, but it's not the way we  
7 do the forecast.

8 MR. FULTON: Q: Yes. And take into account your answer  
9 on the arithmetic only, though, you will agree with me  
10 that the spread would be about 1,200 gigawatt-hours  
11 either way.

12 MR. MATHESON: A: Yeah, if you just apply straight  
13 arithmetic, one percent above/one percent below,  
14 correct.

15 MR. FULTON: Q: Thank you.

16 MR. MATHESON: A: But Mr. Ince's point is only that  
17 that's not at the end of the day how we develop our  
18 load forecast.

19 MR. FULTON: Q: Yes, and I took his point, Mr.  
20 Matheson.

21 If you could next then turn forward to the  
22 response to 3.251.1, and this is the table for new  
23 mining loads, and there was a brief discussion with  
24 Mr. Weafer yesterday about mining loads.

25 MR. INCE: A: Yes.

26 MR. FULTON: Q: And would you agree with me, subject to

1 check, since the table wasn't totaled, that the new  
2 mining loads approximate 1871 gigawatt hours in fiscal  
3 2016/2017?

4 MR. INCE: A: Subject to check, yes.

5 MR. FULTON: Q: Okay. And that then indicates that the  
6 assumptions, at least, for those new loads -- and  
7 maybe I should say it this way. The assumptions for  
8 new industrial loads, when one takes into account only  
9 the new mining loads, are more important than the 1  
10 percent change in the GDP forecast over the three  
11 years.

12 **Proceeding Time 10:24 a.m. T23**

13 MR. INCE: A: Well, this number is bigger than the  
14 previously calculated number. So the mining loads are  
15 a key portion of the forecast.

16 MR. FULTON: Q: So you'd agree with me?

17 MR. INCE: A: Yes.

18 MR. FULTON: Q: Do you have any -- does B.C. Hydro have  
19 any information as to what the GDP associated with the  
20 mining load of approximately 1871 gigawatt hours might  
21 be, expressed, for example, in a percentage of the  
22 current GDP?

23 MR. INCE: A: No, sorry, I don't.

24 MR. FULTON: Q: Okay. Are you able -- would you be  
25 able to ballpark something as an undertaking? Place  
26 whatever caveats that you wished on that?

1 MR. INCE: A: I can't think offhand how we would start  
2 to approach this.

3 MR. FULTON: Q: And what would the challenges be then?

4 MR. INCE: A: Well, I think you'd have to specify what  
5 type of line, what type of production, the dollar  
6 value associated with that production. So I think I'm  
7 constructing this on the fly, and -- yeah, I think  
8 you'd have to go back to the production. So what type  
9 of -- is it gold? Is it moly? What's the dollar  
10 value of that? And approach it from that angle. So  
11 perhaps it can be done.

12 MR. FULTON: Q: Pardon me?

13 MR. INCE: A: It possibly can be done. But this is  
14 just off the top of my head, an approach.

15 MR. FULTON: Q: B.C. Hydro -- does B.C. Hydro have the  
16 information in terms of the nature of the mines that  
17 would be included in that 1870?

18 MR. INCE: A: Yes. So B.C. Hydro -- we were concerned  
19 about the mining loads. Well, concerned in the sense  
20 that mining seemed to be a very hot issue in 2007 with  
21 the rise in commodity prices and all the interest in  
22 the province. So we commissioned  
23 PricewaterhouseCoopers, and that study is filed with  
24 the Commission and there's a public version and also  
25 one filed with Commission in confidence. And  
26 Pricewaterhouse identified the mines indicated in this

1 table. So these are tangible resources that we have  
2 production profiles associated with them. And you can  
3 see these mines, they ramp up over time as they start,  
4 get commissioned, and then they ramp down over time as  
5 the ore bodies deplete. So there's rational behaviour  
6 in terms of these mine loads.

7 There is one mine which is called Mine  
8 Number 4. It's the fourthmost column over. And  
9 that's a generic mine.

10 So I should say what we did in the  
11 forecast. In 2007 we had a mining load forecast that  
12 stopped in the first ten years. We only looked at the  
13 production profiles for mines for ten years, and then  
14 we projected out the mining loads based on a GDP  
15 regression. We have no tangible information in terms  
16 of the long-term mining loads. So I think we did the  
17 next best thing and projected that out, with a GDP  
18 regression.

19 By no means do we assume that the mining  
20 potential of B.C. is finished by 2016 or 2020, as that  
21 2007 forecast would have indicated, if we would have  
22 just dropped off all the existing mining loads. I  
23 think there's a lot of mining potential and that's why  
24 we hired Pricewaterhouse to develop this forecast of  
25 future mines. But we've still got a problem in that  
26 Pricewaterhouse identified these mines, but then



1 earlier and this 465 gigawatt hours?

2 MR. INCE: A: Not exactly. The 2008 forecast, we did  
3 include some increased attrition for some of the  
4 mining projects such as the northwest mines. So it's  
5 not a simple mathematical exercise of subtracting out  
6 the two. So perhaps it would be helpful if I look at  
7 the variances between the mining sector, between the  
8 2008 and 2007 forecasts.

9 So, with respect to coal mining, I'm  
10 looking at the delta chart, the difference between the  
11 2008 and 2007 forecasts, specifically the coal mining,  
12 and it's almost a wash. There's very little change  
13 with the two vintages of forecasts. With respect to  
14 metal mining, the difference is -- well, it varies  
15 widely because we've got new mines dropping -- or  
16 we've got mines dropping off and new mines coming on.

17 MR. FULTON: Q: If I could just stop you there, Mr.  
18 Ince, can you tell me what you're referring to and  
19 doing? Give me a sense --

20 MR. INCE: A: This is my own internal reporting.

21 MR. FULTON: Q: Okay.

22 MR. INCE: A: One level down from what you've seen in  
23 the IR responses.

24 MR. FULTON: Q: Thank you.

25 MR. INCE: A: And so, with respect with the metal  
26 mines, we have an average variance with the new

1 forecast being higher by approximately two to four  
2 hundred gigawatt hours a year higher, in the 2008  
3 forecast, relative to the 2007 forecast.

4 But again, that's -- it's based on a number  
5 of things, including attrition estimates for mines we  
6 had in the 2007 forecast.

7 MR. FULTON: Q: In terms of the two forecasts that are  
8 on the record, though, that we have referred to, would  
9 you agree with me that the increase in new mines  
10 forecast between the two forecasts is greater than the  
11 impact of reduced GDP growth for the first three years  
12 of the forecast?

13 MR. INCE: A: No. As I just indicated, that the mining  
14 load difference between the two forecasts is  
15 approximately two to four hundred gigawatt hours. In  
16 the long term, it's like -- from 2020 on, it's more  
17 like 200 gigawatt hours. And the earlier number we  
18 talked about with respect to GDP was more like 1200  
19 gigawatt hours.

20 MR. FULTON: Q: Okay. Thank you. Just returning to  
21 3.251.2 again, the response states that you -- that  
22 B.C. Hydro does not develop its load forecast based on  
23 U.S. housing market conditions and other factors other  
24 than GDP and B.C. housing starts, population -- other  
25 than GDP and B.C. housing starts and population, can  
26 you tell us what economic variables are used to

1 develop the load forecast?

2 MR. INCE: A: Depending on the sector, but I'll  
3 indicate all of them. All of them, off the top of my  
4 head, it would be BCGDP, employment, housing starts,  
5 retail sales, and commercial specific GDP. So, GDP  
6 specific to the commercial sector. I may have missed  
7 one or two.

8 MR. FULTON: Q: All right. And what is the source of  
9 those variables?

10 MR. INCE: A: Largely the Conference Board of Canada.  
11 Where we do have the Ministry of Finance for those  
12 parameters we'll use them.

13 MR. FULTON: Q: And are they reflected both -- are the  
14 variables reflected both in the original LTAP filing  
15 and in the December update forecast?

16 MR. INCE: A: Yes, and I'm searching for an IR  
17 reference. We did provide a table in which the --  
18 some of the key parameters were indicated, and I can't  
19 remember it offhand.

20 MR. FULTON: Q: Okay.

21 **Proceeding Time 10:34 a.m. T25**

22 MR. INCE: A: Yes, it's 3.240.1, response to BCUC. So  
23 we have residential accounts, growth rate, employment,  
24 real GDP, retail sales, and housing starts.

25 MR. FULTON: Q: And does the provincial government  
26 forecast also include all those variables?

1 MR. INCE: A: No, not all those variables. I don't  
2 think they provide retail sales, for example. But I  
3 say, if they don't provide the information, then we  
4 access the Conference Board of Canada.

5 MR. FULTON: Q: If I could ask you to turn to  
6 Transcript Volume 7, page 1140.

7 MR. MATHESON: A: Mr. Fulton, would you mind letting us  
8 know the nature of the question, then we'll make sure  
9 the right person gets the transcript?

10 MR. FULTON: Q: Yes. I want to talk about the SAE  
11 models, and there was an exchange that Mr. Ince had  
12 with Mr. Bertsch yesterday. And the part of your  
13 response that I'm focusing on, Mr. Ince, appears on  
14 page 1140.

15 MR. INCE: A: Yes.

16 MR. FULTON: Q: Lines 12 to 17 where you say that the  
17 SAE models do depend on --  
18 "...these are two complementary models that  
19 we're trying to hopefully convert to the  
20 same answer. The SAE models would have as  
21 inputs disposable income and other economic  
22 drivers. So perhaps I was referring to the  
23 SAE models in terms of economic drivers such  
24 as disposable income."  
25 And SAE stands for statistically adjusted end use?  
26 MR. INCE: A: Yes.

1 MR. FULTON: Q: Thank you. And can you tell me what  
2 the relationship is between disposable income and  
3 residential energy use?

4 MR. INCE: A: When we're constructing a forecast,  
5 there's potentially a number of drivers that we could  
6 use to predict that. So think about a regression  
7 analysis in which you have a number of economic  
8 drivers and you're going to come up with a forecast of  
9 load. Within the SAB models we'll put in these  
10 various parameters to try and prove out what are the  
11 best predictors of load going forward.

12 So we can start with a bucket of different  
13 economic indicators such as GDP or housing starts or  
14 disposable income, and we'll put them through the  
15 model and test them to see what's the best combination  
16 of these parameters that match the load growth in the  
17 future -- or in the past, and therefore have the best  
18 chance of matching that load growth in the future. So  
19 that would have been one of the parameters selected as  
20 being statistically significant and useful in terms of  
21 predicting past load and therefore future load.

22 MR. FULTON: Q: And are you able to provide the  
23 residential income elasticity?

24 MR. INCE: A: Not offhand, no. That would have been  
25 one of the parameters that came out of the model. It  
26 must have come out as a useful parameter for

1 predicting past load, and therefore we used it in the  
2 model.

3 MR. FULTON: Q: Right. Is that something you could  
4 provide by way of undertaking?

5 MR. INCE: A: Yes.

6 **Information Request**

7 MR. FULTON: Q: Thank you. Can you tell us how the  
8 forecast disposable income is related to B.C. Hydro's  
9 estimates of population and GDP growth?

10 MR. INCE: A: Well, I think we're talking about  
11 different independent parameters. So they may be  
12 interrelated, but I don't think we used things like  
13 disposable income to try and predict GDP. I think  
14 they're complementary parameters that we would use in  
15 a model to try and predict past and therefore future  
16 loads.

17 **Proceeding Time 10:39 a.m. T26**

18 MR. FULTON: Q: And so, how do you use them in the  
19 model, then?

20 MR. INCE: A: As with regression models, you determine  
21 -- you look at a set of parameters that might  
22 influence the load. And you put them into the  
23 regression models to determine if they're useful in  
24 terms of predicting loads in the past. And those  
25 models will come up with the optimum mix -- the  
26 optimum parameters used to apply to those regressions

1 to determine those past loads. So, we'll use a mix of  
2 different parameters to see what is statistically  
3 significant and what is useful. And then we'll use  
4 those to project forward. So I don't think it's a  
5 completely deterministic approach in terms of testing  
6 these parameters. I think the model does it for us.

7 MR. FULTON: Q: Thank you. I want to move to Fort  
8 Nelson for a time.

9 THE CHAIRPERSON: At this time of year, Mr. Fulton?

10 MR. FULTON: Not at this time of the year, Mr. Chairman.  
11 I have been there at this time of the year, and I'm  
12 not suited for that climate.

13 THE CHAIRPERSON: I think you're right.

14 MR. FULTON: Q: So, Exhibit B-10, page 37, is where I'd  
15 like to start. And if we begin with the first bullet  
16 on that page, and I believe these are probably either  
17 for you, Mr. Rich or for Mr. Ince. Just to summarize  
18 that -- well, actually I'll let you read the two  
19 bullets and then I'll do a paraphrase and you can tell  
20 me whether you agree with my paraphrase.

21 Okay?

22 MR. INCE: A: Yes.

23 MR. FULTON: Q: So, would you agree with me that in  
24 those two bullets what B.C. Hydro is saying is that  
25 the loads could be higher than the cap forecast if gas  
26 producers fully electrify their operations, or

1           alternatively loads could be below the updated low  
2           forecast if gas industry proponents self-supply.

3 MR. INCE:    A:    Yes.

4 MR. FULTON:   Q:    Okay. Can you tell us what factors  
5           would determine where B.C. Hydro's realized load,  
6           then, is, and what appears to be a very wide range of  
7           potential demands?

8 MR. INCE:    A:    In the reference load forecast, we've  
9           included the mid-load. So, for the 2008 and the  
10          figure 2.7 to the right, the medium forecast, the  
11          middle line is the one that we've assumed. Subject to  
12          the caveats that you, Mr. Fulton, said, that there's a  
13          range.

14 MR. FULTON:   Q:    Yes, thank you. And is B.C. Hydro  
15          aware of any current regulatory requirements that  
16          would compel gas producers to electrify their  
17          operations?

18 MR. GODSOE:   I believe that was asked and answered in  
19          BCUC panel IR 1.21.1 or 2, I'd have to check, but one  
20          of the two. That was asked.

21 MR. FULTON:   Q:    Has B.C. Hydro undertaken any analysis  
22          to complete the business cost for gas producers to  
23          take service from B.C. Hydro relative to the cost of  
24          self-supply?

25 MR. RICH:     A:    No, we haven't.

26 MR. FULTON:   Q:    Given that you haven't carried out any

1 analysis, does B.C. Hydro have any expectation as to  
2 how long it would take to carry out that type of  
3 analysis -- or perhaps with the assistance of a cap?

4 **Proceeding Time 10:44 a.m. T27**

5 MR. RICH: A: Well, I think we make reference in one IR  
6 the fact that we've initiated a Joint Industry Working  
7 Group that includes B.C. Hydro, BCTC, members of the  
8 industry, both the producers and the pipelines groups,  
9 and the province is participating as well, the oil and  
10 gas division of the Energy Ministry. And part of the  
11 terms of reference -- and I'll find the IR in a  
12 second, but part of the terms of reference is to get a  
13 better handle on generation options that the industry  
14 themselves are thinking about, and as part of that  
15 discussion is looking at the relative economics of  
16 self-supply versus taking service from B.C. Hydro.

17 MR. FULTON: Q: And is there a target date when that  
18 study is expected to be completed?

19 MR. RICH: A: Not at this point.

20 MR. FULTON: Q: Can you tell us whether in the Peace  
21 River gas producing area, in the vicinity of Fort St.  
22 John, B.C. Hydro has been able to fulfill all its --  
23 all recent requests for electricity service?

24 MR. RICH: A: We'd have to take that back and find out  
25 exactly what the current status of that is.

26 MR. FULTON: Q: Okay, and so say maybe over the last

1 five years?

2 MR. GODSOE: We'll take that undertaking.

3 MR. FULTON: Thank you.

4 THE CHAIRPERSON: Thank you.

5 **Information Request**

6 MR. FULTON: Q: And also, can you provide some insight  
7 into the amount or proportion of gas production  
8 operations in the Peace River area that B.C. Hydro  
9 presently services with electricity?

10 MR. INCE: A: I believe we answered an IR on that, in  
11 that we don't have a good handle on that. It is a  
12 very complex undertaking in terms of what the split is  
13 between gas and electric.

14 MR. FULTON: Q: Can you tell us, say in the past five  
15 to ten years, whether B.C. Hydro has provided service  
16 to many or most of the new gas field operations?

17 MR. INCE: A: Again, I don't think we have a good  
18 response to that.

19 MR. FULTON: Q: Okay. Do you have any sense on whether  
20 or not you captured a significant proportion of the  
21 new demand in that area?

22 MR. GODSOE: I can find an IR at the break, but we've  
23 been asked this and I think our response is we don't  
24 know what the capture rate is. I will find that IR  
25 though.

26 MR. FULTON: Q: Thank you.

1 THE CHAIRPERSON: That assumes there will be a break, Mr.  
2 --  
3 MR. GODSOE: Fair point. I'll be looking for it now.  
4 MR. FULTON: Q: Does B.C. Hydro have any detailed data  
5 about its load to service gas production in the Fort  
6 St. John area?  
7 MR. GODSOE: So I have found the IR. It's Exhibit B-12,  
8 BCUC Panel IR, response to BCUC Panel IR 1.6.1, which  
9 also deals with Fort Nelson.  
10 MR. FULTON: Q: Does B.C. Hydro have load data for the  
11 Fort St. John or Peace River area in total for the  
12 past ten years?  
13 MR. INCE: A: Certainly if the customers are being  
14 supplied by B.C. Hydro, we'd have billing information.  
15 So, and we'd also have substation loads, yes.  
16 MR. FULTON: Q: Is that information then that you could  
17 provide by way of undertaking?  
18 MR. GODSOE: Well, I'm curious as to why that wasn't put  
19 into an IR, frankly, before I take that undertaking.  
20 MR. FULTON: Well, people try their best with the IRs,  
21 Mr. Chairman, and unlike cross-examination where the  
22 point generally is that if you don't ask your  
23 questions and you sit down, that's too late, it does  
24 arise from time to time that questions come up that  
25 perhaps could have been asked in an IR but may not  
26 have been thought about at the time. And to my mind,

1 as long as this is something that doesn't happen on a  
2 regular basis, the questions should be allowed to be  
3 asked and the panel answer the questions.

4 MR. GODSOE: Well, before I take that undertaking I want  
5 to have an idea from Mr. Ince how long that would take  
6 to do.

7 MR. FULTON: Oh, fair enough.

8 **Proceeding Time 10:50 a.m. T28**

9 MR. INCE: A: Yes. I should add the one complexity is  
10 that, if you're looking at distribution sub-stations,  
11 teasing apart the different loads on a substation  
12 might be exceedingly difficult, whether or not those  
13 are oil and gas customers, what those customers are  
14 using it for. I suppose we could look at transmission  
15 accounts as far as -- like a specific oil and gas  
16 customer account at the transmission level. That  
17 certainly would be more feasible. But again, we might  
18 miss a lot of the distribution load.

19 MR. FULTON: Q: Right.

20 MR. INCE: A: And I suspect a lot of the oil and gas  
21 load in the Fort Nelson area -- or, sorry, the Fort  
22 St. John area, would be at the distributional level.  
23 But I think we'll check into this.

24 THE CHAIRPERSON: I must say, Mr. Godsoe, that I do not  
25 find your response to panel 1.6.1 particularly  
26 responsive.

1 MR. GODSOE: And I'm going to find more Information  
2 Requests, because rest assured, this IR and the  
3 capture rate was put more than once to us. I will  
4 find them.

5 THE CHAIRPERSON: Okay.

6 **Information Request**

7 MR. FULTON: Q: Thank you. Staying with Fort Nelson,  
8 I'd like to move to the LTAP action items for Fort  
9 Nelson, and this discussion -- or at least the point  
10 of the discussion that I want to focus on in the  
11 beginning is at page 39 of Exhibit B-10 under heading  
12 2.8.3 -- and I'll -- once you arrive at that page, if  
13 you could read the four lines that appear under  
14 Section 2.8.3, and then I'll ask my question.

15 MR. RICH: A: Yes.

16 MR. FULTON: Q: All right. Are you able to provide us  
17 with the NPV of the cost to B.C. Hydro of each of the  
18 Fort Nelson generating station upgrade project Case 3  
19 and the AESO A1 transmission upgrade?

20 MR. RICH: A: Sorry, the question is --

21 MR. FULTON: Q: What's the NPV of the cost to B.C.  
22 Hydro of each of those two commitments?

23 MR. RICH: A: In total or separately?

24 MR. FULTON: Q: Separately.

25 MR. RICH: A: I think we'd have to provide that  
26 separate -- or, we'd have to take that as an



1 MR. RICH: A: Sorry, you are asking for a comparison of  
2 the cost of the upgrade and a second CCGT as compared  
3 to replacing the existing plant with one --

4 MR. FULTON: Q: Large --

5 MR. RICH: A: -- larger size CCGT.

6 MR. FULTON: Q: Yes.

7 MR. RICH: A: And your request, you're asking that as  
8 an undertaking?

9 MR. FULTON: Q: Yes, thank you.

10 **Information Request**

11 MR. GODSOE: I'm going to again express my concern that  
12 these should have been put in information requests.  
13 We're getting quite a number of undertakings now, Mr.  
14 Chairman.

15 MR. FULTON: Well, I've counted two.

16 MR. GODSOE: I've counted more than that.

17 MR. O'RILEY: A: And I would just add to that, that  
18 option would not meet the in-service date target that  
19 we're achieving, so it would not be strictly  
20 comparable to the portfolio of upgrading Fort Nelson  
21 and then building another CCGT beside it. So it would  
22 be a different reliability outcome.

23 MR. FULTON: Q: So I guess my questions remains. I  
24 have Mr. Godsoe's objection --

25 MR. GODSOE: Not objection. Concern. We will take the  
26 undertaking, but I count more than two so far.

1 MR. FULTON: Well, my arithmetic has always been rough at  
2 the best of times, so I do apologize if I misstated  
3 the number of undertakings that I had requested.  
4 Hopefully there won't be that many more.

5 MR. FULTON: Q: Another resource option listed on that  
6 page is to connect the Fort Nelson region to the B.C.  
7 interconnected system, and that's in the second  
8 number?

9 MR. RICH: A: That's correct.

10 MR. FULTON: Q: Okay. Does B.C. Hydro anticipate that  
11 this connection will be assessed in the Section 5  
12 inquiry?

13 MR. MATHESON: A: Yes.

14 MR. FULTON: Q: And is there an opportunity to serve a  
15 significant load along the likely route of this  
16 connection?

17 MR. MATHESON: A: I'll make a general comment. First  
18 of all, there's been -- we're not advanced enough in  
19 this option to have a likely route, number one. And  
20 then I'll --

21 MR. RICH: A: If I can clarify, so that we've initiated  
22 a study with BCTC that's currently underway. Part of  
23 that study is not only to look at various optimal  
24 transmission sizes to accommodate certain load  
25 scenarios, but to look at route selection as well.

26 So as part of that assessment, I think it

1 would be fair to say that either subsequent to that  
2 study or as part of the study, we would look at the  
3 potential for serving additional loads along that  
4 route, or even in fact potential IPP new supply  
5 options and system --

6 MR. FULTON: Q: And when you reference the new IPP  
7 supply options, does B.C. Hydro foresee opportunities  
8 to connect with new supplies of green electricity?

9 MR. RICH: A: The potential would be there, yeah.

10 MR. FULTON: Q: If Fort Nelson was connected to the  
11 interconnected system, would that mean that the  
12 proposed expenditures for the Fort Nelson generating  
13 plant would become largely redundant?

14 MR. RICH: A: Sorry, could you repeat the question?

15 MR. FULTON: Q: Right. If Fort Nelson was to be  
16 connected to the interconnected system, does that then  
17 mean that the proposed expenditures for the Fort  
18 Nelson generating plant largely become redundant?

19 MR. RICH: A: No, that plant would then be available to  
20 supply the system.

21 MR. FULTON: Q: And at this point are you able to say  
22 whether the connection to the interconnected system  
23 would be a single circuit or two circuits?

24 MR. RICH: A: It's too related in the BCTC study to  
25 conclude one way or the other. It ultimately depends  
26 on what load scenario we're serving.

1 MR. FULTON: Q: Okay. Is B.C. Hydro aware of any  
2 external requirements that would otherwise require two  
3 circuits, such as requirements from the Western  
4 Electricity Coordinating Council that would mandate a  
5 certain level of reliability for Fort Nelson?

6 **Proceeding Time 11:00 a.m. T30**

7 MR. RICH: A: I'm not aware of any, but that would be  
8 part of the BCTC study and working with BCTC on what  
9 broad original planning standards they would be  
10 looking to.

11 MR. FULTON: Q: Okay. Are you able to say, Mr. Rich,  
12 how the reliability of B.C. Hydro using a single  
13 interconnecting circuit would compare to the  
14 reliability of a typical oil and gas self-supply  
15 facility?

16 MR. RICH: A: I don't know the answer to that.

17 MR. FULTON: Q: On page -- still on page 41, B.C. Hydro  
18 also states that its contingency plan work will enable  
19 it to make further commitments in the second half of  
20 2009 subject to further load certainty. Taking into  
21 account any proposed commitments to serve Fort Nelson,  
22 the uncertainty of the load forecast and other supply  
23 options that are under review, can you tell us what  
24 the advantages and disadvantages would be of the  
25 Commission directing B.C. Hydro to file a CPCN  
26 application for the upgrade project?

1 MR. GODSOE: So, I think we're getting into a legal issue  
2 that you asked me to address in legal argument on  
3 Section 44.2 versus CPCN, and I will address that in  
4 argument.

5 MR. FULTON: Thank you.

6 MR. GODSOE: But maybe -- so I think that's a pure legal  
7 issue, but maybe you could put to this panel the  
8 effect of a delay, because if the Commission were  
9 suddenly to order us to file for a CPCN, there's  
10 presumably delay, and that's an evidentiary issue.

11 MR. FULTON: Yes, thank you.

12 MR. FULTON: Q: Okay, so, could you comment, then, on  
13 the delay?

14 MR. O'RILEY: A: Well, I can speak to that. I mean,  
15 the project is on the critical path for a November,  
16 2011 in-service date. So that kind of change in the  
17 process would push us beyond the -- certainly push us  
18 beyond that winter. Push us into 2012.

19 MR. FULTON: Q: Now, if I could next refer you to  
20 Exhibit B1-1, Appendix N-2, and this Appendix  
21 discusses the Fort Nelson generating station upgrade,  
22 and if I could take you to Section 2.8, which is at  
23 page 10 --

24 MR. O'RILEY: A: I've got that.

25 MR. FULTON: Q: Okay. That section speaks to public  
26 engagement and First Nations consultation, and having

1 in mind the recent decisions of the British Columbia  
2 Court of Appeal, I do have some questions that I want  
3 to ask you in terms of updating what the situation is.  
4 MR. MATHESON: A: Sorry, Mr. Fulton, can you word --  
5 MR. GODSOE: Can you get on the right --  
6 MR. MATHESON: A: Yeah, we're just having trouble  
7 finding the right page.  
8 MR. GODSOE: It's Appendix N-2, the most recent version  
9 is Exhibit B1-10. Is that what you're referring to?  
10 MR. FULTON: Q: Yes.  
11 MR. MATHESON: A: And -- okay.  
12 MR. GODSOE: And it starts at Section 2.7, at page 2-19  
13 in my copy.  
14 MR. O'RILEY: A: So, I think it would be useful if I  
15 updated the -- if I provided an update on the status  
16 of our First Nations consultation. Would that be  
17 responsive to your question?  
18 MR. FULTON: Q: Yes, thank you. And then I'll follow  
19 up with whatever other questions I have.  
20 MR. O'RILEY: A: Okay. So, the consultation with  
21 respect to the upgrade, Option 2 and 3, has been  
22 progressing very well since we initiated that sort of  
23 mid last year, and I would say it certainly exceeds  
24 any objective standard for the requirement for a  
25 consultation based on the impacts of the project.  
26 There are -- as we say in the document, there are two

1 First Nations potentially impacted, Fort Nelson and  
2 the Profit River, and both of these are part of the  
3 Treaty 8 grouping. So we've also been copying the  
4 Treaty 8 Tribal Council on all correspondence.

5 So throughout this process we haven't  
6 identified any adverse impacts on these First Nations  
7 or their treaty rights. One concern that has been  
8 raised that we're working on, particularly with the  
9 Fort Nelson First Nation, there's been concern around  
10 emissions. We've had general support for the upgrade,  
11 both options. We have a specific letter of support  
12 which I think is included here from the Profit River  
13 Chief and Council.

14 **Proceeding Time 11:05 a.m. T31**

15 We have a draft -- the next step is to  
16 provide the First Nations with a draft environmental  
17 assessment report, and that will be provided in  
18 separate meetings to them, with them, over the next  
19 two weeks, and the First Nations were afforded  
20 opportunities to participate in the development of  
21 that report, through field work and such.

22 We are -- the Fort Nelson First Nation has  
23 expressed an interest in a capacity funding agreement,  
24 and this would allow them to get some technical  
25 resources in place to do their own review of the  
26 documents, and we're certainly supportive of that, and

1 are in the process of negotiating a capacity funding  
2 agreement. And we expect that to be completed  
3 shortly. And that's really just about -- the issue,  
4 really, is just the amount of -- trying to determine  
5 the amount of support they require. We're certainly  
6 supportive of that.

7 We've completed an archaeological  
8 assessment report, and no issues were identified, and  
9 that would be pursuant to the *Heritage Act*, the  
10 *Heritage Conservation Act*. A different *Act*.

11 MR. FULTON: Q: If I can just stop you there.

12 MR. O'RILEY: A: Sure.

13 MR. FULTON: Q: The First Nations are content with the  
14 results of the archaeological --

15 MR. O'RILEY: A: Well, we're sharing that with them,  
16 and I haven't -- there have been no concerns raised  
17 with respect to archaeology -- from archaeological  
18 issues from the report.

19 MR. FULTON: Q: Now, you said, "We're sharing it with  
20 them." Have you shared it with them?

21 MR. O'RILEY: A: I'm not aware of whether they've  
22 actually got the report in their hand. So --

23 MR. FULTON: Q: Okay.

24 MR. O'RILEY: A: -- that might be something we could  
25 undertake to confirm. But we certainly will. Whether  
26 they've physically gotten it, I don't know.

1 MR. FULTON: Q: Okay, well, I hesitate to ask you that,  
2 because I know it will count towards my total, but --

3 MR. O'RILEY: A: I hesitate to answer, but --

4 MR. GODSOE: I will take that undertaking. I think  
5 that's useful to all, and it's certainly something you  
6 couldn't have asked in an IR, so I think that's  
7 absolutely fair.

8 **Information Request**

9 THE CHAIRPERSON: Thank you, Mr. Godsoe.

10 MR. O'RILEY: A: Yeah. It's also very time -- I mean,  
11 this is obviously a situation that's evolving over  
12 time.

13 There have been recent meetings held, and I  
14 -- there was a meeting held prior to the submission of  
15 the evidentiary update in October. We had another  
16 meeting in November. And then we've got meetings  
17 coming up.

18 We are also looking for procurement  
19 opportunities for individuals and First Nations-owned  
20 business, pursuant to our aboriginal procurement  
21 policy, and there is one First Nations-owned company  
22 that does heavy equipment -- heavy earth moving work,  
23 and we're trying to find an opportunity there.

24 We've had a good success with the local  
25 Band, the Fort Nelson Band, that we're quite proud of,  
26 that deals with an ongoing business issue we have in

1 Fort Nelson at the plant, in terms of attracting and  
2 retaining steam operators. Because there's quite a  
3 demand for these people in the local area and broadly  
4 in the region. We hired a young man from the Band as  
5 an apprentice steam engineer and we're supporting him  
6 through his schooling, which he's taking through  
7 distance learning, and there's a -- he works in the  
8 plant for a couple of days one week and then does the  
9 schooling for three days, and then the next week he --  
10 it's a three-and-two split the subsequent week. So  
11 roughly 50/50 time working in and schooling, and we're  
12 paying his time while he's working in the plant, and  
13 we're also paying the costs of the education. That's  
14 been a very positive thing for us with the community.  
15 There's a lot of support in the community behind this  
16 individual as he tries to develop the skills, and it's  
17 a great opportunity for us, because this individual,  
18 he's got roots in the community, so he's not going to  
19 -- you know, take the next job in Alberta that comes  
20 up, for a little more money. We have another  
21 candidate that's been identified in the community, and  
22 we're going to try and make that work as well.

23 So, it's -- we have specific objectives  
24 with respect to consultation, and engagement with  
25 respect to this project. We have a broader  
26 initiatives with respect to building relationships

1 with the First Nations, or the Fort Nelson First  
2 Nation, the Profit River First Nation, and we're  
3 trying to achieve on -- trying to make progress on  
4 both fronts.

5 MR. FULTON: Q: Right. Now, you spoke of meetings.  
6 Are the minutes of the meetings publicly available?  
7 To your knowledge?

8 MR. O'RILEY: A: I am not aware of that. I don't think  
9 -- I think that wouldn't be -- that probably wouldn't  
10 be appropriate. I'm thinking not so much from B.C.  
11 Hydro's perspective, but the First Nations  
12 perspective.

13 MR. FULTON: Q: All right. So that if the minutes  
14 cannot be made available, can at least the dates that  
15 the meetings took place be made available?

16 MR. O'RILEY: A: Yes.

17 MR. GODSOE: We'll take that undertaking.

18 **Information Request**

19 MR. O'RILEY: A: Yes.

20 MR. FULTON: Q: And also in terms of that information,  
21 if that could include the identity of the parties who  
22 took -- participated in the meetings.

23 MR. O'RILEY: A: Yes.

24 MR. GODSOE: Identity, broadly speaking. There is  
25 privacy issues around individuals, but --

26 MR. FULTON: Okay, that's fine.

1 MR. GODSOE: Within those parameters.

2 **Information Request**

3 MR. O'RILEY: A: Yes, absolutely.

4 MR. MATHESON: A: But it's B.C. Hydro identity that  
5 you're speaking about, presumably.

6 MR. FULTON: Q: Well, I'd also like to know what First  
7 Nations were at the meetings.

8 MR. O'RILEY: A: Yeah, whether it's Fort Nelson or  
9 Profit River is the two. I think that's what you  
10 need, right?

11 MR. FULTON: Q: Yes.

12 MR. O'RILEY: A: And I think the -- I mean, in  
13 particular with Profit River, we've got evidence of  
14 support in terms of the letter, and I would put -- I  
15 would attach significant weight to that, in terms of  
16 evidence that their concerns have been dealt with.

17 **Proceeding Time 11:10 a.m. T32**

18 And I should say, we don't -- these  
19 processes don't stop when -- if, for example, the  
20 Commission made a positive determination with respect  
21 to Option 3, we would carry on the consultations to  
22 their ultimate conclusion, whether -- regardless of  
23 where that is. It's not like we kind of get our  
24 decision then we stop. And the example I would give  
25 is with the VITR. Most of the agreements we  
26 ultimately signed, but the impact of the First Nations

1           were done after the project actually commenced  
2           construction. So we're about building a long-term  
3           relationship here, and it's not about just meeting a  
4           technical legal obligation.

5 MR. FULTON:    Q:    Yes. You mentioned the capacity  
6           funding agreements. Do I take it that you do --  
7           you're in a process of negotiating those with both  
8           Prophet River and Fort Nelson at this time?

9 MR. O'RILEY:   A:    No. Prophet River did not request --  
10           they're a little further away, so the impacts are not  
11           as direct. So Fort Nelson expressed a desire for such  
12           an agreement, to help them go through all these  
13           materials, and that's totally appropriate. And so if  
14           -- we only do that if the First Nation is interested.

15 MR. FULTON:    Q:    And what about the Treaty 8 Tribal  
16           Council?

17 MR. O'RILEY:   A:    They haven't -- the practice in Treaty  
18           8 is they tend to let the -- I mean there's many, many  
19           First Nations in Treaty 8, like dozens and dozens and  
20           dozens of them extending through Alberta and the  
21           Northwest Territories, and technically all of them  
22           have some rights in a local area, if you read the  
23           treaty. The practice is they defer to the local First  
24           Nation to take the lead, and we address our broader  
25           obligations to the Treaty 8 adherence by copying the  
26           Tribal Council, and we haven't been forming the Tribal

1 Council. And so we've given them -- everything that's  
2 gone to the two First Nations has gone to the Tribal  
3 Council, and we've not -- they've not raised any  
4 issues. So we think that is an adequate -- that's  
5 been adequate.

6 MR. FULTON: Q: Thank you.

7 I'd like to move away then from Fort Nelson  
8 and First Nations issues and go to the issue of market  
9 reliance. And this issue, I believe, is for you, Mr.  
10 O'Riley as well, because it was an issue that I began  
11 with Ms. Van Ruyven in Transcript Volume 5, and she  
12 deferred certain of my questions to you.

13 MR. O'RILEY: A: Sure. I just want to get -- well,  
14 I'll wait till you tell me where it is.

15 MR. FULTON: Q: Well, Volume 5 beginning at page 781 of  
16 the transcript.

17 MR. O'RILEY: A: Yes, I have that.

18 MR. FULTON: Q: Okay, and so beginning at line 14, I  
19 began to talk to her about the 400 megawatts of market  
20 reserves in the context of Special Direction No. 10.  
21 And then moving over to page 782, I asked her whether  
22 the reserves -- or I put to her that the reserves were  
23 rarely called up and would she agree with that? And  
24 she suggested that you were the one that I should put  
25 that question to.

26 MR. O'RILEY: A: Yeah. So there's two issues here, and



1 a significant call on reserves.

2 So they do get called on by B.C. Hydro and,  
3 more broadly, by utilities in the -- who are part of  
4 the power pool. And that doesn't change with respect  
5 to, you know, Special Direction 10 or -- so, the issue  
6 with the 400 megawatts is really a planning question  
7 which I would defer to Mr. Matheson on.

8 MR. FULTON: Q: All right. Thank you, Mr. Matheson.

9 MR. MATHESON: A: Well, I think it's important for us  
10 to make the point that the planning criteria of a  
11 planning reserve of 14 percent, or the margin of 14  
12 percent, if you like, it's -- first of all, it's a  
13 routine utility planning criteria, and it does tend to  
14 change a little bit from utility to utility as to what  
15 percentage of the overall system that planning reserve  
16 represents. Of course, in our case it's 14 percent.

17 But I wanted to make the point that it's  
18 very difficult, if not impossible, to draw a  
19 distinction between that additional 14 percent that we  
20 plan on having, and the idea that it's somehow of  
21 lesser value or separated out from the system. We  
22 look at our overall system needs, we plan in an excess  
23 of 14 percent, to meet the reliability that we feel we  
24 need to have. And therefore, there is no distinction  
25 between that additional amount and the rest of the  
26 system. So the notion that you can sort of draw it

1 out or separate it from the other part of the system,  
2 and pretend that you can -- it's of lesser quality, is  
3 an erroneous distinction, in our view.

4 And therefore, for the purposes of Special  
5 Direction 10, we've assumed that it -- because it  
6 states specifically that it covers both capacity and  
7 energy, that all of our planning reserves now need to  
8 come from inside the province as a result of the  
9 Special Direction.

10 MR. FULTON: Q: Mr. Matheson, do you know whether  
11 neighbouring jurisdictions include market reserves in  
12 their planning?

13 MR. MATHESON: A: I believe they do, yes. Or, I'm  
14 sorry. Reserves or market reserves?

15 MR. FULTON: Q: Market reserves.

16 MR. MATHESON: A: I don't know that.

17 MR. FULTON: Q: Okay.

18 MR. O'RILEY: A: Well, some jurisdictions plan for a  
19 systemic reliance on the market. So the state of  
20 California, for example, utilities in California don't  
21 have enough capacity under their own control. They  
22 regularly purchase from the market for that.  
23 Utilities like Portland General Electric would be in  
24 the same boat. They plan on a systemic reliance from  
25 the market. So that's something in general we've  
26 relied less of on that, and with SD 10, we're going to

1           rely even to a lesser extent. We're required to rely  
2           to an even lesser extent.

3 MR. FULTON:   Q:   All right. And I may not have been  
4           listening as closely as I should have, Mr. O'Riley, to  
5           your first answers in terms of what was happening in  
6           the late summer and early fall of last year. But I --  
7           do I take it that what was being drawn upon at that  
8           time was the -- would have been included in a 400  
9           megawatts of market reserves?

10 MR. O'RILEY:   A:   No, I would distinguish between the  
11           two. Really, what we're saying in planning is that  
12           we're looking out three years to 20 years, and we  
13           don't know exactly what our load's going to be. We  
14           know we'll have to carry a certain amount of operating  
15           reserve in -- when we get there. But we don't know  
16           exactly what our load will be, what exactly our  
17           supply/demand balance will be. And we've got -- so,  
18           we've got this buffer we put in, which is 14 percent,  
19           and that comes out of loss of load probability  
20           calculations. We've said in the past that of that 14  
21           percent, we'll deem roughly 4 percent of that, or 400  
22           megawatts, to come from external markets. So we won't  
23           build for that.

24 MR. FULTON:   Q:   Right.

25 MR. O'RILEY:   A:   Okay? What we're saying today is  
26           based on SD 10 we need to plan to have that capability

1 in the province.

2 MR. FULTON: Q: Right. But that 400 megawatts, has  
3 B.C. Hydro needed to draw down on that 400 megawatt  
4 equivalent, at all, say, in the past five years?

5 **Proceeding Time 11:20 a.m. T34**

6 MR. O'RILEY: A: Well, I would say -- and I would  
7 separate -- another way of asking that question would  
8 be to say, "Is the 14 percent always adequate from a  
9 planning perspective?" And I'll give you one example  
10 where it hasn't been. So from the period 2003 through  
11 2007, our load forecast for the past winter we just  
12 went through, went up by 700 megawatts. So that's  
13 within the operating timeframe the load forecast went  
14 up 700 megawatts, or about 7 percent.

15 So in prior planning exercises we would  
16 have used a 14 percent planning margin. In this  
17 particular time period it wasn't adequate, and that is  
18 what drove us to bringing these Burrard units back  
19 into generating service. And I would distinguished  
20 that from are we calling on reserves? We call on  
21 reserves many times through the year, and will  
22 continue to do that, just given the physics of how the  
23 system is interconnected.

24 MR. FULTON: Q: But I really just want to focus on the  
25 market reserves and the 400 megawatts of market  
26 reserves. And my question is, has B.C. Hydro needed

1 to rely on that 400 megawatts of market reserves at  
2 any time in the past five years?

3 MR. O'RILEY: A: Yeah. Well, I'm saying we have been.  
4 I mean, another example is we've been -- we talked a  
5 lot in various proceedings about our net deficit  
6 position in terms of capacity in the operating  
7 timeframe in the last few years. So Mr. Elton talked  
8 about the progress we've made in terms of getting load  
9 curtailment contracts and bringing back Burrard.  
10 We're still below where we want to be, where we would  
11 like to be in terms of having -- closing that gap. So  
12 I would say in the last five years every winter we've  
13 been relying on that market, market allowance.

14 MR. MATHESON: A: In the last number of years, as we've  
15 approached the winter peak season, we've had to  
16 reserve increasing amounts of Canadian entitlement  
17 that certainly take us beyond the 400 megawatt range.  
18 So I mean, I think that answers the question.

19 But I still -- to me it's still a bit of a  
20 moot point in the sense that the Special Direction is  
21 very clear that capacity needs to come from generating  
22 resources from within the province, and that the  
23 Canadian entitlement, even though it might back the  
24 400 megawatts of historic market reliance that we've  
25 had, does not come from within B.C. And therefore the  
26 wording alone would suggest that we now have to draw

1 all of the 14 percent reserve margin from resources in  
2 B.C.

3 MR. FULTON: Q: Let me try it this way in terms of your  
4 understanding of Special Direction No. 10, and Mr.  
5 Godsoe can address this more fully in final argument.  
6 But from what you've said, do I take it, then, that  
7 it's B.C. Hydro's understanding, at least this panel's  
8 understanding, that Special Direction 10 prevents B.C.  
9 Hydro from using the market reserves in the planning  
10 horizon, but B.C. Hydro is allowed to plan for using  
11 the market reserves in the operating horizon?

12 MR. O'RILEY: A: Well, I'd just be a little careful  
13 with that. We still -- in the operating timeframe, we  
14 still carry 5 percent of our load as reserves. Let's  
15 just assume all of our load is supported by Hydro. It  
16 makes it easier. In the operating timeframe we carry  
17 5 percent of our load as reserve. So there's about  
18 500 megawatts at peak times that's sitting there.  
19 Half of it's spinning and half of it's non-spinning,  
20 can be brought up, ramped up in ten minutes. So we're  
21 carrying that.

22 Because we're part of this reserve sharing  
23 pool, if there's a disturbance on the system -- and  
24 we've had a few of them in the last number of years  
25 and September 23<sup>rd</sup> was a big one. If there's a  
26 disturbance, we will -- power will flow from

1           Bonneville system into B.C. And we're getting the  
2           benefit of that. That's helping keep the lights on,  
3           it's helping minimize the impact of the disturbance.  
4           We're due that benefit because we're providing this 5  
5           percent, 500 megawatts that's there for others.

6                        So in the time period I describe, July to  
7           September 2008, there were 28 instances in the pool  
8           where reserves were called on. Twenty-five or 26 of  
9           them, we were actually providing reserves to others.  
10          Three or four of them they were providing reserves to  
11          us, and significantly in that September case.

12                       So I would distinguish that. That will  
13          carry on under SD 10. That will carry on. And I  
14          would distinguish that from this 400 megawatts, which  
15          is really a planning buffer. It's more analogous to  
16          the critical water planning criteria, and I think Ms.  
17          Van Ruyven spoke to that.

18   **Proceeding Time 11:26 a.m. T35**

19   MR. MATHESON:    A:    And I think that when we get into an  
20                        operating scenario, number 1, and number 2 the fact  
21                        that we have an interconnected system with the western  
22                        grid, of course we have to rely on our neighbours, and  
23                        of course we'll do what we need to do in order to keep  
24                        the lights on. In this planning criterion, and I can  
25                        quote from it, Section 3 of Special Direction 10  
26                        states that:

1           "The Commission must use the criterion that  
2           the authority is to achieve energy and  
3           capacity self-sufficiency by becoming  
4           capable of ..."

5           -- and it goes on to say, the additional subsection  
6           (d) and (e), "solely from electricity generating  
7           facilities within the province."

8                        So we feel that's pretty clear that the  
9           reserve margin that we've had needs to now become  
10          completely capable of -- by producing from within  
11          resources in B.C.

12 MR. FULTON:    Q:    But if you've never used the market --  
13           well, say you haven't used the market reserves in the  
14           last five years.

15 MR. O'RILEY:   A:    Well, I'm saying by definition we've  
16           used it every winter of the last five years, because  
17           we've been short.

18 MR. MATHESON:  A:    And I think the 14 percent isn't a --  
19           the 14 percent is calculated as being needed to  
20           reliably supply our customers. There isn't a  
21           gradation of the part of that that you hold in reserve  
22           and the part that you don't. You build the system  
23           with an additional 14 percent to have in reserves in  
24           order to meet reliability for our customers. You then  
25           can't pick and choose which of that you think is  
26           reserve and which isn't. It's all part of the system.

1           Once you've put it in there and said you need 14  
2           percent, it's there, it's part of the system. You  
3           can't cherry-pick which part is used and which part  
4           isn't.

5 MR. GODSOE:    I take it you would find it helpful for us  
6           to address this in argument, though.

7 MR. FULTON:    Yes, please.

8 MR. GODSOE:    And the start of it certainly is in Exhibit  
9           B-3 1.33.2, and 1.33.3, where I went a long way to  
10          telegraph what argument's going to be. But I  
11          certainly will address that in argument.

12 MR. FULTON:    Thank you.

13 MR. FULTON:    Q:    In Mr. Godsoe's opening, he did of  
14          course reference that the market, non-firm reliance of  
15          2500 gigawatts has been removed for planning purposes  
16          after 2015, because of SD 10. And can you tell me  
17          whether some of that 2500 gigawatt hours would be  
18          attributable to provincial non-firm resources?

19 MR. MATHESON:   A:    Yes, it would.

20 MR. FULTON:    Q:    Okay. If I could then ask you to turn  
21          to Exhibit B-4, BCUC IR 2.185.1, in the -- yes, so B-  
22          4, 2.185.1.

23                           And the table shows the removal of the full  
24          2500. Correct? That's the fourth cell over, second  
25          cell from the bottom?

26 MR. MATHESON:   A:    Yes. Yes, it shows that, yes.

1 MR. FULTON: Q: Thank you.

2 Are you able to identify where in that  
3 response there is a component of energy that has been  
4 added to acknowledge that the provincial pool of non-  
5 firm resources has some contribution to firm resources  
6 because of diversity effects?

7 MR. MATHESON: A: Yes, you can see in the third line  
8 from the bottom, included 85 percent of contracted  
9 energy from the '06 small stream -- small hydro  
10 projects as firm. And through the firm energy load  
11 carrying capability study that we did, and so you can  
12 see the 400 gigawatt hours added in in fiscal '12 and  
13 '20.

14 **Proceeding Time 11:31 a.m. T36**

15 MR. FULTON: Q: Because you've added back the 400,  
16 shouldn't that affect the 2500 figure? And if not,  
17 why not?

18 MR. MATHESON: A: Between now and fiscal '17?

19 MR. FULTON: Q: Yes.

20 MR. MATHESON: A: Well, no, I don't think so. I think  
21 -- we've got a historic ability in our criteria to go  
22 to 2500 from the market, and we've also calculated  
23 that as the Heritage Hydro non-firm. And so we think  
24 it's appropriately in there.

25 MR. FULTON: Q: Let me try it this way. If we look at  
26 the two plus 400 -- or the 400 additions in the cells

1           above the negative 2500 that you've taken out, why  
2           doesn't one of those 400s have an impact on the 2500?

3 MR. O'RILEY:    A:    If I can try this, I think what we're  
4           doing with that 85 percent figure is we're deeming a  
5           certain amount of the contracted from the F06 Call  
6           from the small hydro projects as firm. So we're using  
7           that FELCC calculation to support the 85 percent. So  
8           that means 400 megawatts, it's not non-firm energy,  
9           it's firm energy. There's another 15 percent, which I  
10          won't try and do that math in head, that's non-firm  
11          that doesn't show up in that stack. So it's actually  
12          quite unrelated to the 2500.

13 MR. FULTON:    Q:    I have some questions on Burrard. If I  
14          could ask you to turn to Exhibit B-1-8 -- pardon me.  
15          Pardon me, B-1, the application, page 2-16, revision  
16          3, September the 5<sup>th</sup>, 2008, Table 2-7. So B-1, page 2-  
17          16, Table 2-7.

18 MR. O'RILEY:    A:    Okay, I think we have that.

19 MR. FULTON:    Q:    Okay. Would you agree with me that  
20          this table shows the firm energy capability of B.C.  
21          Hydro's resources at the start of the planning  
22          horizon, that's fiscal 2012, for both the 2008 LTAP  
23          and the 2006 IEP?

24 MR. O'RILEY:    A:    Yes.

25 MR. FULTON:    Q:    Okay. And in the table, Heritage  
26          Thermal is shown as 3200 gigawatt hours for the 2008

1 LTAP, and 6300 for the 2006 IEP.

2 MR. O'RILEY: A: Yes, that's correct.

3 MR. FULTON: Q: Okay. Are you able to tell us what the  
4 planned reliance on Burrard was in fiscal 2010 for the  
5 2006 IEP?

6 MR. O'RILEY: A: In fiscal 2010?

7 MR. FULTON: Q: Yes.

8 MR. O'RILEY: A: It would have been 6100.

9 MR. FULTON: Q: Okay.

10 MR. O'RILEY: A: Yeah. So you know that the difference  
11 between 6100 and 6300 is Prince Rupert. I think we've  
12 got that somewhere in the record.

13 MR. FULTON: Q: Right. And B.C. Hydro's current  
14 position is a decrease in planning reliance on Burrard  
15 for the same year, correct?

16 MR. O'RILEY: A: Yes.

17 MR. MATHESON: A: That's right, it's of 3,000 gigawatt  
18 hours, that's correct.

19 **Proceeding Time 11:36 a.m. T37**

20 MR. FULTON: Q: Right. And does it follow that,  
21 because you are reducing a planning reliance that  
22 already exists, at a level greater than 3,000 gigawatt  
23 hours, that a social licence for greater than 3,000  
24 gigawatt hours currently exists?

25 MR. O'RILEY: A: No. I mean, I think this -- what  
26 we're saying is that we think we have a social licence

1 for 600 gigawatt hours today. So, we're above our  
2 licence here in that respect. We think we can achieve  
3 a social licence for 3,000 gigawatt hours with some  
4 effort and some risk. We think going beyond that, we  
5 think it becomes increasingly risky to get a social  
6 licence for higher volumes, and in fact in trying to  
7 do so, we can impact our social licence. The  
8 likelihood of getting a social licence for 3,000.

9 MR. FULTON: Thank you. Mr. Chairman, I've probably got  
10 about 10 or 15 minutes more.

11 THE CHAIRPERSON: Why don't we go until you're finished,  
12 then we'll take -- I'm afraid that we'll have to take  
13 a lunch break, because I think the panel is going to  
14 be about an hour. I think it would be unfair to ask  
15 all of you to sit around for the next hour and a half  
16 with your stomachs rumbling -- our stomachs rumbling.

17 MR. FULTON: Thank you.

18 MR. FULTON: Q: I want to turn to the topic that  
19 relates to Lower Mainland load resource balance. And  
20 begin by referring you to Exhibit B-3, the response to  
21 JIESC IR 1.8.8.

22 And actually what I need you also to look  
23 at is Appendix F-10, page 2 of 4. So, and perhaps you  
24 can let me know when you're at Appendix F-10, page 2  
25 of 4, I think --

26 MR. MATHESON: A: Yes, we have those.

1 MR. FULTON: Q: Approximately the middle of that page,  
2 there's a reference to ELCC, and ELCC is "effective  
3 load-carrying capacity".

4 MR. MATHESON: A: Effective load-carrying capability.

5 MR. FULTON: Q: Thank you. And one of the items that's  
6 taken into account in the determination of ELCC for a  
7 group of generation resources is the reliability of  
8 the generating units expressed in terms of forced  
9 outage rates. That appears at the second bullet.

10 MR. MATHESON: A: That's right here.

11 MR. O'RILEY: A: Yes.

12 MR. MATHESON: A: Yeah.

13 MR. FULTON: Q: Would it be fair, then, to say that the  
14 ELCC of a group of resources used in system studies  
15 takes into account generation contingencies?

16 MR. MATHESON: A: I think Panel 3 might be in a better  
17 position to answer that question, Mr. Fulton.

18 MR. FULTON: Q: Okay. And would they be a better panel  
19 to answer all questions on ELCC then, do you think?

20 MR. MATHESON: A: For the purposes of how we developed  
21 and made assumptions about ELCC, in terms of our  
22 portfolio analysis, yes.

23 MR. O'RILEY: A: I'm happy to deal with the general  
24 question of reliability of a generating asset.

25 MR. FULTON: Q: I just want to check my index to IRs to  
26 see whether or not I need to ask you a question on a

1 particular IR.

2 I think I can leave this IR to Panel 3.

3 It's IR 129.3, so. So I'll leave this for Panel 3.

4 **Proceeding Time 11:41 a.m. T38**

5 MR. GODSOE: Sorry, was it Exhibit B-3, BCUC IR 1.29.3?

6 I just want to make sure that your question gets --

7 MR. FULTON: Yes. Actually it's B-12, BCUC IR 1.29.2,

8 Attachment 1.

9 MR. GODSOE: BCUC Panel?

10 MR. FULTON: Yes, Panel IR. Maybe that's where --

11 MR. GODSOE: Sorry, BCUC Panel IR 1.29.2 or 29.3?

12 MR. FULTON: 1.29.2.

13 MR. GODSOE: I would start with Panel 3 and if they can't  
14 handle it all, Panel 4 would -- those two panels  
15 combined can answer that.

16 MR. FULTON: Okay, thank you.

17 MR. FULTON: Q: And I have some questions as well on  
18 the Lower Mainland to Vancouver Island capacity  
19 balance that's shown in Tables 6-21 and 22, on pages  
20 6-62 and 6-63 of Exhibit B-1.

21 MR. MATHESON: A: Yes, we have those.

22 MR. FULTON: Q: And for the line item labelled LMVI  
23 Dependable Capacity Excluding Burrard, can you clarify  
24 whether the dependable capacity shown has had any  
25 amount deducted for generation reserves or for any  
26 other allowance?

1 MR. MATHESON: A: I think Panel 4 is probably better  
2 able to answer that.

3 MR. FULTON: Q: Okay. All right, then I'll save the  
4 other questions that I had on that one.

5 Exhibit B-1, Appendix J-1, the AMEC report,  
6 I think we can probably, hopefully deal with that one  
7 with this panel.

8 MR. O'RILEY: A: Yes, we should be able to.

9 MR. FULTON: Q: And page 8 of 167.

10 MR. O'RILEY: A: Yes, I have that.

11 MR. FULTON: Q: The first full paragraph, last  
12 sentence:

13 "Normally there is a high probability that  
14 five units would be available, and in many  
15 cases six units might be available."

16 MR. O'RILEY: A: Yes.

17 MR. FULTON: Q: Would you agree with me subject to  
18 check that the CRPs and the 2008 LTAP rely on only  
19 five units at Burrard throughout the planning horizon?

20 MR. O'RILEY: A: I believe that's correct, yes, it's my  
21 recollection.

22 MR. FULTON: Q: And the point of reference that I have  
23 for that, if you want to look at it, is IR 1.141.1,  
24 BCUC?

25 **Proceeding Time 11:46 a.m. T39**

26 MR. O'RILEY: A: Yes.

1 MR. FULTON: Q: Would you agree with me that the  
2 reliance on only five units at Burrard throughout the  
3 planning horizon is essentially embedding an N minus 1  
4 condition?

5 MR. O'RILEY: A: Well, it's -- I mean, I think  
6 inherently in a contingency resource plan you assume  
7 some contingencies. So that's one of the  
8 contingencies we've identified, and I think it's  
9 supported by this document, this assessment by AMEC.

10 MR. FULTON: Q: Right, so you're essentially embedding  
11 an N minus 1.

12 MR. O'RILEY: A: Well, it's not actually, it's not --  
13 if you look at the general system as a whole, if you  
14 were to apply an N minus 1, our largest contingency  
15 would be the loss of a Mica unit or a Revelstoke -- a  
16 Mica unit, I guess. So that would be 400 megawatts.  
17 So I think we're not applying that principle  
18 generally. We're saying, looking at the system  
19 overall, where are the weak links? We've got this  
20 report from AMEC that says, you know, assuming six  
21 units of Burrard might not be the most conservative  
22 assumption. So I think this supports a particular  
23 treatment of Burrard in a contingency resource plan.

24 MR. FULTON: Q: If I could ask you to turn to Volume 7  
25 of the transcript, Mr. O'Riley, page 1242, there was  
26 an exchange with Mr. Oulton on Burrard, and you

1 describe Burrard as a soft RMR operation?

2 MR. O'RILEY: A: Yeah, and I mean that's my  
3 characterization. I'm careful how far we take that.  
4 What I'm trying to describe is a situation where we  
5 will operate Burrard, support our load in the Lower  
6 Mainland VI, without formally making it an RMR --  
7 designating it as an RMR resource for BCTC to use at  
8 their will.

9 MR. FULTON: Q: And would you agree with me, subject to  
10 check, that the response to BCUC IR 1.28.1, page 1 at  
11 Exhibit 3, contains a description by B.C. Hydro as  
12 Burrard not being declared an RMR facility?

13 MR. O'RILEY: A: Yes, and I think that's consistent  
14 with my new term I came up with here, of soft RMR.

15 MR. FULTON: Q: Okay. And the reason why it hasn't  
16 been declared an RMR facility is because that would  
17 violate the joint planning criteria.

18 MR. O'RILEY: A: I might just -- counsel -- so I can  
19 explain that. What we're doing by saying that we're  
20 not designating Burrard as an RMR facility is that we  
21 don't believe it's appropriate on a long-term basis to  
22 use that. That would have the effect of deferring the  
23 ILM line, the new ILM line, and we don't think that's  
24 an appropriate tradeoff to make in the long term.  
25 We're quite prepared in the short term, and if there's  
26 issues with ILM coming into service, the scheduled

1 risk and such which we've talked about, we're quite  
2 happy to use Burrard to support the system in the  
3 intervening period. We don't think that Burrard is a  
4 long-term systemic solution as an alternative to ILM.

5 MR. FULTON: Q: Right. But there's no physical reason  
6 why Burrard could not be designated an RMR facility,  
7 is there?

8 MR. O'RILEY: A: I mean, I believe that that  
9 possibility was examined in more depth in the CPCN  
10 hearing for ILM. I'm not sure I have anything to add  
11 to that.

12 MR. FULTON: Q: Well, because we don't have the record  
13 of the ILM before us, are you able to tell us in a  
14 general sense whether there's any physical reason why  
15 Burrard cannot be designated as RMR?

16 **Proceeding Time 11:52 a.m. T40**

17 MR. O'RILEY: A: Well, I mean, I think the physical  
18 reason goes back. So what we've said in our  
19 recommendation is we're recommending that Burrard be  
20 counted on for 900 megawatts of capacity, and 3,000  
21 gigawatt hours of energy, through 2019, at least  
22 through 2019. And that is principally to get us  
23 through the period where ILM is completed.

24 If we were to designate -- the practical  
25 effect of designating Burrard as an RMR facility would  
26 be in fact to delay that transmission line. So what

1 we're really saying is we don't think -- and we can  
2 point to the AMEC report as evidence for that, we  
3 don't think that as a long-term resource we should be  
4 relying on Burrard in lieu of ILM. So that's causing  
5 us to say we're not going to deem it to be an RMR  
6 facility.

7 MR. FULTON: Q: Okay. Now, I began my cross on this  
8 point by referring you to -- or on this section  
9 referring you to the JIESC IR 1.8.8. So if I could  
10 take you there now.

11 MR. O'RILEY: A: Do you know what volume that is?

12 MR. FULTON: Q: Yes, Exhibit B-3. And just before your  
13 read that, and before I finally lead the RMR  
14 discussion, can you tell us how the current operation  
15 of Burrard would be any different as an RMR facility  
16 from its use at the present time as what I would  
17 describe as an undesignated RMR facility, or  
18 undeclared RMR facility? Or -- yeah, soft RMR.

19 MR. O'RILEY: A: Soft RMR?

20 MR. FULTON: Q: Yes.

21 MR. O'RILEY: A: Well, I think the practical effect is  
22 we would start to receive instructions from -- well,  
23 practical effect is BCTC could then use that capacity,  
24 generating capacity at Burrard, in their calculations  
25 of what is the firm capability, transmission  
26 capability of the system. And then they could start

1 offering additional transmission capacity on the OASIS  
2 system to third parties, and we could see additional  
3 flows of energy from Alberta through to the U.S. or if  
4 there was a market opportunity for third parties to do  
5 that. And then we would receive instructions to be  
6 running Burrard at the direction of BCTC to support  
7 the system to provide that capacity. So I think  
8 that's what would happen.

9 What we are saying with this soft RMR is  
10 that if there's an issue meeting our load, we're quite  
11 happy to operate Burrard and we will do so and we'll  
12 incur the costs to do so. We're just not making that  
13 available to BCTC as a resource to open up additional  
14 transmission.

15 MR. FULTON: Q: All right, so then, JIESC IR 1.8.8,  
16 Exhibit B-3, if you could turn to page 2 of 3.

17 MR. O'RILEY: A: If I could just add to that, another  
18 implication of designating that is we would have to  
19 run it on minimum generation levels from October to  
20 January, which would have a number of impacts, whether  
21 it's operating hours or emissions and costs and such,  
22 to make it available so that we could ramp it up to  
23 meet the requirements of BCTC.

24 MR. FULTON: Q: So if you turn to page 2 of 3 of the  
25 response to JIESC IR 1.8.8, second paragraph, again  
26 speaking of RMR, you state that the warm-up time for

1 the Burrard units is almost two hours for the units to  
2 be synchronized and loaded to 125 megawatts.

3 Is it possible to keep the units at Burrard  
4 at a heightened state of readiness, say, over a two-  
5 week period, which could allow a useful dispatch to be  
6 achieved say within an hour?

7 MR. O'RILEY: A: I think that would be a challenge for  
8 the plant to achieve.

9 MR. FULTON: Q: Okay, and why would that be a  
10 challenge?

11 MR. O'RILEY: A: Well, if there's just -- I mean there  
12 are ramping rates. There are the physics of these  
13 units. I mean, they were not designed to be  
14 dispatchable units. They are designed to be baseload  
15 units. So we pushed them pretty hard to optimize the  
16 dispatch and shape the gas through the -- in order to  
17 meet our peak load. And some of the units have more  
18 flexibility than others. So there's a question of  
19 amount here. But I think we're pushing -- we push it  
20 as hard as we can, and I think to offer that up on a  
21 more general basis to BCTC would be a challenge.

22 **Proceeding Time 11:57 a.m. T41**

23 MR. FULTON: Mr. Chairman, I think I'm finished with this  
24 panel, but not absolutely certain, so I would like to  
25 -- I've gone over my estimate, and I would ask, then,  
26 that we take the lunch break.

1 THE CHAIRPERSON: We shall do that.

2 MR. FULTON: I'm anticipating that I shan't come back  
3 with many questions, if any.

4 THE CHAIRPERSON: Okay. We shall break till 1:30, but  
5 before then, the Panel has considered the timetable  
6 going forward, and what the Panel would like to do,  
7 and I throw this forward for you to canvass with your  
8 colleagues over the lunch hour, is to declare Monday,  
9 March the 9<sup>th</sup>, the *non dies*. We would not sit on  
10 Monday, and that we would re-convene on Tuesday the  
11 10<sup>th</sup> and work through till we've finished with Dr.  
12 Shaffer, hopefully on the 11<sup>th</sup>. I would like people to  
13 think about that over lunch and let me have their  
14 thoughts.

15 MR. FULTON: Thank you.

16 THE CHAIRPERSON: Okay, and half-past one.

17 **(PROCEEDINGS ADJOURNED AT 12:00 P.M.)**

18 **(PROCEEDINGS RESUMED AT 1:31 P.M.)**

**T42**

19 THE CHAIRPERSON: Please be seated.

20 Mr. Fulton?

21 MR. FULTON: Thank you, Mr. Chairman. I did have a few  
22 more questions, but in speaking with Mr. Godsoe off-  
23 line, I will put those questions to Panel 4 and  
24 accordingly I'm finished my cross-examination of this  
25 panel. So, thank you, panel.

26 The other item that I needed to address

1           that you left with me was the item relating to the  
2           scheduling and the off-day on the 9<sup>th</sup>. Everyone is  
3           happy to have the 9<sup>th</sup> off. The only issue that remains  
4           with scheduling relates to Mr. Plunkett and his  
5           evidence on the 4<sup>th</sup>, and Mr. Andrews said he would like  
6           to speak to that, so I'll ask him to come forward and  
7           do that at this time.

8   MR. ANDREWS:    Just briefly, Mr. Chairman. The plan is  
9           for Mr. Plunkett to come on the 4<sup>th</sup>, and the only  
10          question is whether he would be able to finish on the  
11          4<sup>th</sup>. I understand that Mr. Godsoe has an hour, and  
12          I've canvassed the other parties and don't have any  
13          specific indications beyond perhaps some, but if it  
14          was it wouldn't be much. And so I'm looking hopefully  
15          to the possibility that we would be able to, in one  
16          way or another, ensure that Mr. Plunkett would finish  
17          on the 4<sup>th</sup>, so that he'd be able to make his plans  
18          accordingly. Because he's going to have a serious  
19          scheduling problem to come back in the following week.

20   THE CHAIRPERSON: I understand that. I think the best I  
21          can do for you is to say that, we will not sit for  
22          four hours after four o'clock. I mean, I'm prepared  
23          to do everything I can, but it's maybe an hour for  
24          lunch, and you know, sitting a little later if  
25          necessary.

26   MR. ANDREWS:    Thank you.

1 THE CHAIRPERSON: But we have our limits, I'm afraid.

2 Thanks.

3 MR. FULTON: Then, Mr. Chairman, it's over to the Panel  
4 for the questions that they have of Panel number 2.

5 THE CHAIRPERSON: Thank you, Mr. Fulton.

6 COMMISSIONER HARLE: I would like to talk to the Heritage  
7 assets, and I guess that's you, Mr. O'Riley.

8 MR. O'RILEY: A: Yes.

9 COMMISSIONER HARLE: And in particular, I'd be interested  
10 in kind of an overview of the approach that you take  
11 to maintenance programs to sustain value in those  
12 Heritage assets.

13 MR. O'RILEY: A: Okay. We've got a fairly extensive  
14 asset management program that we've developed over the  
15 past, really, ten years, probably starting in '98, and  
16 the core of that is our preventative maintenance  
17 program. So, we have a program that we call  
18 "reliability-centred maintenance", which really seeks  
19 to optimize where and when we're doing our  
20 preventative maintenance. And the principle there is  
21 preventative maintenance is the lowest-cost -- always  
22 the lowest cost of -- the lowest-cost thing you can  
23 do, in terms of managing the assets.

24 **Proceeding Time 1:35 p.m. T43**

25 And we think we've made some good progress  
26 there, and I would point to our improving forced

1        outage rate over that time period. We had seen a  
2        dramatic improvement in a number of forced outages we  
3        have through the year, and really that's been a  
4        functioning of targeting, you know, the less reliable  
5        -- reliability centered maintenance inherently focuses  
6        on the components of equipment that are less reliable  
7        and more prone to leading to equipment failure, larger  
8        unit failure. And an example would be, done a lot of  
9        work on the governors up in the GMS plant, where we  
10       had, you know, persistent problems and we've been able  
11       to maintain and replace small components in order to  
12       improve that. So I think that's really good.

13                    At the same time, we've got -- obviously we  
14       have aging assets and we've talked a lot about that in  
15       these proceedings and other proceedings. And we are  
16       seeing ourselves prone to more and more -- although we  
17       have fewer individual forced outages, the ones we have  
18       can be of longer duration, greater severity, and we  
19       talked a lot in the RRA hearing about the failure we  
20       had with the G.M. Shrum Unit 3, which is just now  
21       being put back together more than a year later.

22                    What we do in terms of managing that is we  
23       have a fairly rigorous process where we assess the  
24       equipment health, and that means looking at the  
25       individual components like the generator, the turbine,  
26       the governor, the exciter, the auxiliary equipment,

1 and doing engineer reviews, periodic engineering  
2 review of the equipment and assigning it a rating of  
3 from good, satisfactory, poor, unsatisfactory. And  
4 really we're targeting our efforts at the -- in  
5 particular at the poor and unsatisfactory equipment on  
6 the larger units. We have very much in the system,  
7 there's an 80/20 rule and it's actually a 90/10 rule,  
8 where eight of our assets -- so GMS, Peace Canyon,  
9 Revelstoke, Mica, Kootenay Canal, Seven Mile, and  
10 Bridge River produce 90 percent of the energy in our  
11 assets. And then all the rest provide important  
12 benefits, like in terms of localized capacity and  
13 such, but not the same volume.

14 **Proceeding Time 1:38 p.m. T44**

15 So we focus a lot of our attention on the  
16 larger assets, and then within those the components  
17 that pose a great risk. And we think of this as a  
18 life-cycle approach. So we're definitely not about  
19 "something's old, let's replace it". We've got lots  
20 of examples of where we've got a concern about an  
21 individual component or piece of equipment, and we're  
22 able to find a -- you know, a maintenance solution, or  
23 a solution that requires, perhaps, on-line monitoring.

24 There was a good example recently of a  
25 transformer, and we've -- what we've essentially got  
26 is on-line monitoring of the transformer to look for



1 extensive program underway dealing with mostly seismic  
2 risk, but some flood risk as well. And I would throw  
3 in that category are -- include in that category a  
4 major piece of work we have to rejuvenate our spillway  
5 gates, which are the key to managing floods at the  
6 dams, being able to pass the floods. And I'm not  
7 talking about extreme floods, I'm talking about one in  
8 five and one in ten-year floods, that if you can't  
9 pass them, you can fail the dam.

10 So, a lot of our capital and our -- is  
11 really targeted at risk. It's not -- if you come to  
12 B.C. Hydro and start talking about, "Well, what's the  
13 return on investment of this capital project versus  
14 that one," you don't hear a lot of that talk. It's  
15 really, "We've got this asset and we know it's  
16 valuable, it produces very low-cost energy, but  
17 there's these risks associated with it, and how can we  
18 invest either in maintenance dollars or capital  
19 dollars to extend that value."

20 COMMISSIONER HARLE: With the emphasis, then, on the  
21 90/10 rule, does it mean some of the smaller assets  
22 are strictly subject to breakdown maintenance?

23 MR. O'RILEY: A: Yes, and I wouldn't say -- we are  
24 spending maintenance dollars on some of the small  
25 plants, but there's certainly plants that, if that was  
26 all you had to do, you would be putting capital in

1           there. I mean, you've got something that's 60 years  
2           old, and I think about -- I'll pick an example like  
3           the Ash River, which is about 50 years old, and it's  
4           27 megawatts. It really could do with a stator  
5           rewind. But we just aren't in a position to get to  
6           that, and there's a number of small plants in the kind  
7           of the 20 to 60 megawatt range that we're -- I don't  
8           like the term "run to failure", but we're maintaining  
9           them well past their -- what you would -- any  
10          definition of their normal useful life, and given the  
11          more pressing issues we have around the large plants  
12          and some of the more environmentally sensitive ones,  
13          we just aren't able to get to those plants.

14   COMMISSIONER HARLE:    Would you see them phased out at  
15          some stage, then?

16   MR. O'RILEY:    A:    No. I mean, the sites are valuable.  
17          And I mean, I think the example that Mr. Elton alluded  
18          to earlier on Panel 1 was Aberfeldie. So that plant  
19          was originally put in in 1922, it was 5 megawatts.  
20          There's a dam there, and -- but the power plant was  
21          well beyond end of life. The penstock, we actually  
22          condemned the penstock. We went up there and, you  
23          know, the last inspection the water was pouring out of  
24          this penstock. And there was actually a public safety  
25          risk in the end that we -- that was what triggered the  
26          decision to take it down. And what we did there is,

1 we replaced it with a 25 megawatt plant, three 8-  
2 megawatt units. So we're making greater use of the  
3 water resource. It's not an inexpensive plant. Like,  
4 it's -- you know, it's in the \$80 per megawatt-hour  
5 range. So that's the challenge, is when you -- when  
6 you re-develop these plants, or put significant  
7 dollars in them, they go from a \$10 or \$20 a megawatt  
8 hour to, you know, \$70, \$80, \$90 a megawatt hour.  
9 That's our, you know, the business challenge we're  
10 dealing with in terms of the ratepayer impact.

11 But the sites themselves -- the sites  
12 themselves generally have good value. The one thing  
13 I'll add to that, though, is with some of these sites,  
14 it's difficult to get out of them, because if I pick  
15 Strathcona Dam, it's an issue -- something we're  
16 working -- we're really wrestling with, business  
17 challenge we're wrestling with. And there's a  
18 significant seismic risk there with the intake tower  
19 and the dam itself. It's an area where we've actually  
20 had an earthquake, a fairly significant earthquake,  
21 within the life of the project in 1946. They had a 7-  
22 1/2 Richter scale earthquake. And it needs major  
23 work. And part of the -- the decision around that  
24 will be, well, is there a possibility of  
25 decommissioning that project? And the challenge with  
26 that is, these -- (1) these dams aren't really

1 designed to be decommissioned. It's very difficult to  
2 decommission a large dam, there aren't a lot of  
3 examples of that in the world. And (2) the community  
4 has grown up around the dam, so there's development  
5 all over the lower Campbell River and in the town of  
6 Campbell River that relies on that dam being there,  
7 from a flood control perspective. So, you're -- you  
8 get into these things and you're into them. It's  
9 really about what do you do to invest in to make it  
10 safe and continue on. But you know, decommissioning  
11 isn't really a viable option except in some very very  
12 narrow circumstances.

13 **Proceeding Time 1:44 p.m. T46**

14 COMMISSIONER HARLE: Can you talk about some of the  
15 implications that First Nations rights might have on  
16 some of the maintenance programs?

17 MR. O'RILEY: A: Certainly. I'm responsible in the  
18 organization for aboriginal relations, and it's a very  
19 very big subject. We've -- in many cases where these  
20 plants are located, when they were first constructed  
21 that had impacts on the First Nations. So we've got  
22 grievances going back to their construction that we're  
23 dealing with, and some of the grievances vary. Some  
24 of them are, you know -- the most extreme were the  
25 cases in the Peace where we've flooded where people  
26 lived and they had to move and there were terrible,

1       terrible consequences as a result. And in those cases  
2       where -- we're negotiating settlements between B.C.  
3       Hydro, the Province, and the First Nation, and we've  
4       been successful with the Kwadacha trying to close with  
5       the Tsay Keh Dene, and that's probably the most  
6       egregious example.

7                 Another interesting example -- the point  
8       there, though, is where the First Nation communities  
9       are hundreds of miles away from the plant, they're on  
10       the reservoir but the reservoir is massive. At Bridge  
11       River, which is within the Statlum territory, we're  
12       neighbours. So the Bridge River Plan lives -- we live  
13       right next door. The people there, that work there,  
14       live right next to the Shalath community, part of the  
15       Statlum community. And if you go there it's a very  
16       very narrow stripe of flat land along Seton Reservoir  
17       that they live on, and when B.C. Electric showed up  
18       there in the '40s, they took half of that land. And  
19       it's been a very difficult and close relationship over  
20       the years, and we've been at various levels in the  
21       organization from -- at a high-level negotiating  
22       basis, trying to settle there. But we've also had  
23       important work done by the local plant manager,  
24       different managers over the years, to build a  
25       relationship so that they can actually co-exist,  
26       right, so.

1 COMMISSIONER HARLE: How about on a go-forward basis  
2 though? And I'm thinking particularly of the outcome  
3 of some of the rulings in the last couple of weeks.

4 MR. O'RILEY: A: Well, we're still -- I mean, we're  
5 still digging into those rulings. But I think they  
6 reinforce the importance of what we're doing already.  
7 So whenever we're making a capital investment or  
8 seeking, you know, a Crown decision of any sort, we do  
9 go through extensive consultation, and I would say  
10 that our consultation efforts stand up across the  
11 country at the leading edge. And we talked a little  
12 bit about the example of around Fort Nelson. But even  
13 a project like the GMS runners, which is work, we're  
14 replacing on an existing piece of equipment with new  
15 equipment that's more efficient, it will use the same  
16 water, it's within a building that, I mean, you won't  
17 even know standing outside. We are doing consultation  
18 on that, so that means we're letting them know about  
19 the project, we're explaining to them what we think  
20 the impacts are, we're listening to them to hear if  
21 they have any sense of what the impacts are. And we  
22 may, if given the circumstances, we may fund the  
23 retention of experts on the behalf of a First Nation  
24 to support them, because obviously they come at a  
25 disadvantage to us in this respect.

26 And that's maybe -- that's probably an

1 extreme example, but if I picked the Strathcona Dam, I  
2 mean there's a lot of work there, there are a lot of  
3 options, and we are in regular ongoing discussion with  
4 the First Nations about what the project is, what the  
5 issues are, what the impacts will be, and it's about  
6 -- it's important to -- I mean, the thresholds that  
7 the courts have set, the thresholds are very low and  
8 -- for when consultation is required, and we certainly  
9 adhere to that on all of our capital projects. And I  
10 think the processes we have in place are leading the  
11 industry.

12 Having said that, it poses a risk to  
13 projects. And what I'm finding in general is that the  
14 front end development phase of a project, what we call  
15 the definition phase of a project is much more  
16 challenging than it was, you know, than it was even  
17 five or ten years ago. And I constantly push back on  
18 our project managers when I see these schedules, and I  
19 just, you know, "Can you really do that in that  
20 timeframe?" And what I'm trying to do is to not be on  
21 the critical path all the time on every project,  
22 because these issues are difficult.

23 **Proceeding Time 1:39 p.m. T47**

24 And with respect to First Nations, you need  
25 to give them time. It's not their project, it's your  
26 project. You have to give them time to engage, to

1 understand, to get up to the -- closer to the level of  
2 knowledge that you have about this thing you're trying  
3 to do. And you have to respect that. So, giving them  
4 a Gantt chart with some milestones on it isn't  
5 necessarily helpful. It's about -- so a lot of it is  
6 about giving time.

7 COMMISSIONER HARLE: Yeah. Just one last question.

8 Changing subjects slightly. We've heard a lot about  
9 -- in the last few days in respect to the difference  
10 between planned reliance and actual operations,  
11 particularly as it relates to Burrard. Are there any  
12 other assets out there like a Burrard, where the  
13 sensitivities are at that same level? Particularly  
14 the difference between planned and actual?

15 MR. O'RILEY: A: Yeah. Well, there is -- I mean, we've  
16 touched on it, but it is an issue with the hydro  
17 plants as well. So we have this plant -- overall, the  
18 firm energy reliance in the critical water year is,  
19 you know, there's 42,600, whereas the average is  
20 closer to 47,000. And so when we're talking about the  
21 planning, we use the lower number. The world that I  
22 live in, where we're dealing with actuals or expected  
23 results in the short term, you know, you kind of know  
24 where the -- you know what the snow pack is, you know  
25 where the reservoirs are, you know what the range of  
26 in-flows is. And you're living in that world.



1           press? And I gather a fairly complex hearing in front  
2           of this Commission, and has, I think reading the press  
3           reports, still has some consequences for a certain  
4           government to deal with the fallout? Is that  
5           something you would describe as a social licence  
6           issue?

7 MR. O'RILEY:    A:    Why don't I start with an example and  
8           then Dr. Preston can carry on? Why don't I pick  
9           another example that's a little closer?

10 COMMISSIONER MILBOURNE:    No, I'd like to pick that one.

11 MR. O'RILEY:    A:    You want to pick that one? Oh, okay.

12 COMMISSIONER MILBOURNE:    Because it's kind of fresh.

13 MR. O'RILEY:    A:    You're the Commissioner, right? So  
14           we'll go with that.

15 COMMISSIONER MILBOURNE:    I would never do that to you.

16 MR. O'RILEY:    A:    I mean, I think that's an example  
17           where you -- this concept of social licence, and it's  
18           new to us as well, and I was going to give you an  
19           example where we have -- we've thought about it in  
20           this concept of consent to operate in the context of  
21           our hydro plants, and we can come back to that. But  
22           the social licence really for us is this broader  
23           authority to act, right? Sometimes it comes  
24           explicitly from governments who are reflecting the  
25           will of the people. Sometimes it just comes from the  
26           government and they have to make a call, right? Like,

1           they're in a bit of a different position. You know,  
2           they're elected, right? The governments are elected  
3           and they in the end can weigh in and say, "We're going  
4           to do this," or "We're not going to do that."

5                         And I think the case of VITR, we certainly  
6           didn't get a social licence from the people of  
7           Tsawwassen. And there's going to be relationship  
8           issues as a result of that that will carry on for a  
9           long long time and that will impact other transmission  
10          siting decisions. So there is a cost to that that we  
11          haven't necessarily paid. But in the end the  
12          government came down and said, "We're just going to do  
13          this," right, in various ways. Like, they, you know,  
14          there were opportunities for the government to -- and  
15          calls to the government to go down a different path,  
16          even once we were well under construction. In the end  
17          the government said, "We're just going to do it."

18   COMMISSIONER MILBOURNE:   I'm sorry, wasn't it this  
19          Commission that said it was going to be done, and the  
20          government didn't intervene?

21   MR. O'RILEY:    A:    They didn't, yes, exactly.

22   COMMISSIONER MILBOURNE:    I think that's a little  
23          different spin than saying the government did it.

24   MR. O'RILEY:    A:    Well, but subsequent to that, I mean,  
25          there were calls to the province to take action, and  
26          they chose not to. That's what I'm getting at, right?

1 COMMISSIONER MILBOURNE: That I understand.

2 MR. O'RILEY: A: Yeah. And what they did choose to do  
3 was to do this buy-out housing program, which probably  
4 won't help with the social licence in the future.

5 COMMISSIONER MILBOURNE: Not to put words in your mouth,  
6 but that project did get built.

7 MR. O'RILEY: A: It did get built.

8 COMMISSIONER MILBOURNE: And it is in operation.

9 MR. O'RILEY: A: It certainly is, and we're very  
10 pleased to have it in operation. And what I am -- I  
11 think that applying the social licence model to that  
12 is it got built with the -- it got built without the  
13 support of the community out there anyway. And what  
14 I'm saying is I expect we'll incur cost in the future  
15 as a result of that.

16 COMMISSIONER MILBOURNE: Okay. Thank you.

17 MR. O'RILEY: A: Do you want to add, Dr. Preston,  
18 anything?

19 MS. PRESTON: A: If I may, just to as well just  
20 broaden, the social licence is a newer concept and  
21 it's very much related to the context of corporate  
22 social responsibility and also sustainability, which  
23 I'm sure you're aware has the three pillars of social,  
24 environmental and economic as well.

25 And another good, I think social -- the  
26 term "social licence" is used quite a bit in the

1 mining industry as well, where they have -- for  
2 instance, there's been a few examples in South America  
3 where they have received permits, and yet the hue and  
4 cry from the communities nearby has been such that  
5 they just have not been able to build the projects.

6 And another perhaps more relevant and also  
7 more recent example is the example of Surwah, near  
8 Montreal, which was a natural gas-fired plant that was  
9 planned there and did actually -- initially got  
10 accepted and got its permit, but there was such an  
11 outcry. And there it was interesting, because it was  
12 related to Kyoto, the Kyoto Agreement, and also the  
13 greenhouse gas issue mainly. And there was so much  
14 opposition to it that the government decided in the  
15 end it just didn't want to deal with it, and so the  
16 whole project got dropped.

17 **Proceeding Time 1:57 p.m. T49**

18 MR. O'RILEY: A: If I could just talk briefly about a  
19 hydro example. In the mid-90s, we put some money into  
20 -- we started putting money into fish conservation on  
21 the Campbell River, so gravel bars, and such. And we  
22 were starting to do some work with the -- involving  
23 the community and such. And there was a big flood,  
24 not caused by us at all. But it resulted in all that  
25 stuff being washed out. And there was -- at one  
26 point, I think, one of the leaders in the community,

1 not a political leader but a leader in the fish  
2 community, said, "You guys are putting that back."  
3 And they were right, in the end. And we did end up  
4 putting quite a bit of money into replacing and  
5 continuing to grow the gravel and the salmon spawning  
6 areas in the river. And what we recognized is that  
7 the -- by putting the dam in, we prevented the natural  
8 flow of gravel to the sites, and the periodic floods  
9 would wash them away and they couldn't be replenished.  
10 So it was really our impact that resulted in the  
11 degradation of the habitat there.

12 But what we really came up -- came away  
13 from that was, is a sense that we didn't have an  
14 entitlement to that water. We didn't own that water.  
15 And we were not there -- although we have a water  
16 licence that gives us, you know, the ostensible right  
17 to use it, we were really there by the grace of the  
18 broader community, including the First Nations. And  
19 that was one of the things that caused us to go down  
20 the road of water use planning, where we brought  
21 numerous stakeholders together, First Nations,  
22 regulators, and said "How can we use the water better  
23 on these river systems to enhance a broader set of  
24 values," including power generation, but things like  
25 flood control and salmon and recreation and such. And  
26 one of the great things that -- coming out of that

1 process was, we built a bunch of relationships that  
2 are there today, and we're able to draw on and work  
3 with, and that's helping us with our capital program.

4 But it also -- in some cases, we actually  
5 got more generation out of some of these rivers,  
6 because we were able to relax the constraints. You  
7 know, in other areas we got less generation. But I  
8 think it enhanced our -- what we called that in those  
9 days was just "consent to operate". And that's really  
10 the first use of this concept of social licencing in  
11 B.C. Hydro, anyway.

12 COMMISSIONER MILBOURNE: I envy you the challenges of  
13 dealing with it.

14 MR. O'RILEY: A: Yeah.

15 COMMISSIONER MILBOURNE: With respect to Burrard, what  
16 government authority granted the permits to operate  
17 that plant for its emissions permits?

18 MS. PRESTON: A: The air emission permit was granted by  
19 Metro Vancouver, and there's also a water effluent  
20 permit, and that's the B.C. Ministry of Environment.

21 COMMISSIONER MILBOURNE: So you're -- if I understand you  
22 correctly, you're saying there's no provincial  
23 government permit that entitles that plant to operate?  
24 From an air emissions standpoint?

25 MS. PRESTON: A: No, the authority for regulating air  
26 emissions within Metro Vancouver falls to Metro

1 Vancouver. So air, of all the different environmental  
2 -- I've forgotten the exact term, but essentially the  
3 B.C. government has given that authority to Metro  
4 Vancouver. It's one of the few regions in Canada  
5 where that's the case.

6 MR. GODSOE: The legal term is "delegation".

7 MS. PRESTON: A: Oh, thank you.

8 COMMISSIONER MILBOURNE: Okay, thank you. And I believe  
9 you confirmed with one of the people you were talking  
10 to that there is a permit in place for that plant to  
11 operate, and it's not under any -- you're not under  
12 any notice of review of the terms and conditions of  
13 that permit at this time.

14 MS. PRESTON: A: There is currently a permit. That's  
15 correct. And there's no formal notification --

16 COMMISSIONER MILBOURNE: Right.

17 MS. PRESTON: A: -- other than that article that was  
18 referred to. And that perhaps gives me an opportunity  
19 -- I mis-spoke yesterday, and I was just wondering if  
20 I could correct what I had said yesterday.

21 It was on page 1218, line 16, I erroneously  
22 referred to the current function of Burrard as a base-  
23 load function, and the word "base-load", it should be  
24 "peaking" function, not "base-load".

25 **Proceeding Time 2:02 p.m. T50**

26 COMMISSIONER MILBOURNE: In your various discussions on

1 the subject of Burrard, there's been reference to this  
2 dichotomy, for lack of a better word, between the  
3 planning role and the operational role and so on and  
4 so forth. And I got the general impression from the  
5 discussions that the likelihood of the unit being put  
6 into operation increased as the kind of water levels  
7 went down, with reference to critical water years, a  
8 high probability of having to operate it, of it being  
9 operated and so on and so forth. Did I get that  
10 right?

11 MR. O'RILEY: A: That's fair, yes.

12 COMMISSIONER MILBOURNE: Not quantitative but  
13 qualitatively.

14 MR. O'RILEY: A: Yeah.

15 COMMISSIONER MILBOURNE: Would it be fair to say that if  
16 there were such a year or years, that the likelihood  
17 of it being operated would be substantially higher in  
18 the months of November through February than any other  
19 time of the year?

20 MR. O'RILEY: A: I'm not sure that's true.

21 COMMISSIONER MILBOURNE: It seems to me -- I'm relating  
22 that to the by now infamous Terasen graph, okay, of  
23 when the peak --

24 MR. O'RILEY: A: Yes, that's --

25 COMMISSIONER MILBOURNE: -- loads and demands are in this  
26 province.

1 MR. O'RILEY: A: Yeah, which is a separate issue from  
2 -- like, it's really a separate issue from the energy  
3 availability, so we would be more -- I mean even this  
4 year where we're not relying on it for energy, or  
5 we're not operating it for energy, we've tended to run  
6 it in the winter. So it ran last February because of  
7 the issues on the Peace River with the ice, which were  
8 winter issues. And then it ran before Christmas  
9 because of the peak load.

10 So I think if it was a -- if we experience  
11 a low water period, we'll start to appreciate that in  
12 kind of February, March, April, and that will tend to  
13 trigger an increase, an economic signal to run the  
14 plant probably over the summer and the fall, partly  
15 because that's when the gas prices are lower so it's  
16 more likely to be run for energy when the gas prices  
17 are lower.

18 COMMISSIONER MILBOURNE: Is it not fair to say that the  
19 demand for energy is also higher in the wintertime  
20 than the summer in this province?

21 MR. O'RILEY: A: It is, but we'd be -- if we're running  
22 it for energy we're running it to put water in  
23 reservoirs for use over the winter. So it would be  
24 less likely to run for energy over the winter because  
25 that's when the gas prices tend to be higher. I'm not  
26 saying it wouldn't be run over the winter. If you're

1       trying to run it for 3,000 or 6,000, you're running it  
2       virtually all the time. But our first preference, it  
3       would tend to be run at the time of the year when the  
4       gas is less expensive. For energy.

5       COMMISSIONER MILBOURNE: Is it fair to characterize your  
6       6,000 or 3,000 megawatt hour number as a rate rather  
7       than as a quantity? In other words, that's the rate  
8       at which, if you were going to run it for those  
9       purposes, you could run it at, you would plan to run  
10      it at. That's not 365 days a year, seven, 24 hours a  
11      day. It's a rate.

12     MR. O'RILEY: A: No. I mean, the capacity -- so when  
13     we talk about 900 megawatts, that's inherently a rate.  
14     That's a rate of -- and then the gigawatt hour number  
15     is the -- that's the energy. If you were filling up a  
16     bucket with a hose, the rate would be the -- the  
17     capacity would be the flow per second through the  
18     hose. The volume of water that ends up in the bucket  
19     would be the equivalent of the energy.

20                     So just to make the point, at 6,000  
21     gigawatt hours we'd be pretty much running flat out,  
22     accounting for the unit outages and the required  
23     inspections. So you'd be -- we'd be going pretty hard  
24     at 6,000.

25     COMMISSIONER MILBOURNE: If you were operating at that.

26     MR. O'RILEY: A: Well, yeah, if you were operating.

1 COMMISSIONER MILBOURNE: Yeah.

2 MR. O'RILEY: A: That was your question.

3 COMMISSIONER MILBOURNE: I'm back at the --

4 MR. O'RILEY: A: You're back at the planning world.

5 COMMISSIONER MILBOURNE: Right. I'm somewhere between  
6 the planning world and the displacement world, okay,  
7 but I think there's another place that you can find  
8 yourself here.

9 MR. O'RILEY: A: Please, no.

10 COMMISSIONER MILBOURNE: Okay, thank you. There was some  
11 discussion that flowed out of the questions that were  
12 asked about displacement of -- potential displacement  
13 of future demand by influencing or not influencing the  
14 use of electricity for space and water heating.  
15 Right, that's been a subject that was addressed here,  
16 various places. In the response to that, the thesis  
17 was advanced here that even if the electricity for the  
18 purpose was provided by a thermal plant, it "wouldn't  
19 have any greenhouse gases associated with it," because  
20 they would be "offset" under the requirements?

21 **Proceeding Time 2:08 p.m. T51**

22 MR. O'RILEY: A: Yeah, I think I was the one who  
23 commented on that.

24 COMMISSIONER MILBOURNE: I heard it from one of your  
25 predecessors as well, okay?

26 MR. O'RILEY: A: Okay.

1 COMMISSIONER MILBOURNE: That that -- the way the world  
2 would work in the B.C. Hydro's view is that the  
3 offsets would kind of make those emissions go away.  
4 In that case --

5 MR. O'RILEY: A: Well, yeah.

6 COMMISSIONER MILBOURNE: But they wouldn't in the case of  
7 direct application for a furnace, right? Because  
8 there's "no offset". That was kind of the thesis that  
9 --

10 MR. O'RILEY: A: Yeah, and I wouldn't say they'd go  
11 away. I would say that the net offsets would be zero  
12 -- you've got a plus and a minus, which there's issues  
13 with that.

14 COMMISSIONER MILBOURNE: Yeah. That's a mathematical  
15 calculation, right?

16 MR. O'RILEY: A: Yeah. Yeah. I wouldn't say they go  
17 away. I would say they netted zero.

18 COMMISSIONER MILBOURNE: In terms of extending that  
19 argument to -- I didn't hear that argument extended to  
20 what I would call the "social licence" argument. I  
21 heard on the social licence argument that the  
22 residents here wouldn't want the reality of the  
23 emissions going into this airshed. Offset -- that  
24 offsets would make that go away.

25 MS. PRESTON: A: Well, and that's an interesting point  
26 that you bring up, in the sense that offsets were a

1 big issue for SE 2 as well, and both the public and  
2 the regulators didn't accept offsets as a solution to  
3 the SE 2 emissions, both with respect to the air  
4 contaminants and also the greenhouse gas emissions,  
5 because those offsets were not local, they were  
6 somewhere else. And so, although people themselves as  
7 consumers say if they take a flight, they are able to  
8 offset their emissions and reduce their carbon  
9 footprint by paying some money. I think people still  
10 get a sense -- there's this term called  
11 "greenwashing", which is essentially talking the talk  
12 but not necessarily walking the walk. And making a  
13 good story about how they're doing good things  
14 environmentally, and these days that tends to mean  
15 with respect to greenhouses gases, but they aren't  
16 actually necessarily doing anything.

17 And so there is definitely a concern with  
18 respect to offsets that they be -- in the Lower Fraser  
19 Valley, that they be located close to the source that  
20 you're trying to offset. And there may well be some  
21 difficulty from a social licence, a public acceptance  
22 perspective, of trying to offset using planting trees  
23 somewhere else. I think it would be more acceptable  
24 if it were within the province. But if it becomes --  
25 goes outside the province, although greenhouse gases  
26 are a global issue, I think the public may not see it

1           that way.

2                         So, I don't know that offsets are the  
3           solution from a social licence perspective. It's  
4           certainly better than not offsetting, but I don't know  
5           that it's the full solution.

6 MR. O'RILEY:    A:    And I just would like to say, because  
7           I addressed the question with the lawyer from Terasen,  
8           and I was just responding to the factual statement  
9           that was put in front of me, that if you offset one  
10          and not the other, that -- you know, that has an  
11          impact in the net, right? I don't think we're making  
12          a value judgment at B.C. Hydro that says, as long as  
13          you offset there's no issue. Like, we have -- our  
14          objective and the province's objective is to reduce  
15          the actual emissions. So we're trying to get the  
16          emissions down, and you do everything you can to get  
17          the emissions down, and then you offset to meet the  
18          target. Offset isn't a -- we don't think of an offset  
19          as a licence to pollute, if you will, that absolves  
20          all sins that comes before it.

21 COMMISSIONER MILBOURNE:   I'll leave it at that. Okay,  
22           thank you.

23 MR. GODSOE:    It might be helpful just to put on the  
24           record, Commissioner, that there was a response  
25           intersecting the GHG and social licencing issue, and  
26           I'd refer you to Exhibit B-12, response to IPPBC IR

1 3.18.7. Just for the record.

2 COMMISSIONER MILBOURNE: Oh, maybe just one supplementary  
3 question. And you may not be able to answer this.  
4 The offsets that have been referred to as the  
5 reasoning that replacing 50 percent efficient  
6 utilization, conversion of natural gas to energy  
7 rather than 90 percent, those offsets, would B.C.  
8 Hydro intend to source them locally and visibly? Or  
9 would they be from somewhere else? Or is it too early  
10 to say?

11 **Proceeding Time 2:13 p.m. T52**

12 MR. O'RILEY: A: Sir, I can -- well, I think there is a  
13 -- I think there's the outlines of a policy from the  
14 province on that. I think the idea is that we would  
15 source them, maybe source within B.C., and they'd be  
16 sourced via the Pacific Climate Trust, and we would  
17 pay a certain amount to them, and they would manage  
18 projects to source the actual offset projects, and  
19 presumably it would take applications for projects,  
20 and people, and create a bit of a market. And I think  
21 all that may change once the Western Climate  
22 Initiative cap and trade structure comes into play,  
23 and there may be a decision to look at the offsets  
24 from broadly beyond B.C.

25 COMMISSIONER MILBOURNE: Okay.

26 MR. O'RILEY: A: The idea would not --

1 MR. GODSOE: And you could -- sorry.

2 MR. O'RILEY: A: We're not going to go out there  
3 looking for offset projects. We're intending to be  
4 engaging in that through the province.

5 MR. GODSOE: And Panel 3 might be able to add to that if  
6 you were interested in following up.

7 COMMISSIONER MILBOURNE: Thank you.

8 This is the last thing I'd just like to  
9 confirm, again I think I know the answer to this, but  
10 you're not increasing or proposing any way to increase  
11 the planning level utilization of Burrard, you're  
12 proposing to decrease it in this LTAP from 6,000 to  
13 3,000.

14 MR. O'RILEY: A: Yeah, with the qualification --

15 COMMISSIONER MILBOURNE: The planning level, right.

16 MR. O'RILEY: A: Yes, we are. With the qualification  
17 that there was a broad expectation among the broader  
18 community that it would actually go to zero beyond  
19 2014, and I know that wasn't accepted by the  
20 Commission in the last IP.

21 COMMISSIONER MILBOURNE: I understand that.

22 MR. O'RILEY: A: So some would say it's actually going  
23 up from zero to 3,000.

24 COMMISSIONER MILBOURNE: Oh.

25 MR. O'RILEY: A: Rather than down from --

26 COMMISSIONER MILBOURNE: But in reality, you're applying

1           -- you want us to approve reducing it.

2 MR. O'RILEY:    A:    Yes.

3 MR. MATHESON:   A:    Yes.

4 COMMISSIONER MILBOURNE:   Have you communicated that to  
5           the public at large, in response to some of this  
6           disinformation that seems to be floating around?

7 MR. MATHESON:    A:    I think we have.  I don't think we've  
8           put out a concerted public communications effort in  
9           that sense, but we do have the Burrard Liaison  
10          Committee, we've got the collective councils in the  
11          Tri-City area.  We communicate with them on a regular  
12          basis.  I think we've been able to use some of the  
13          publicity that occurred when we filed the LTAP to get  
14          our story out, in that sense.  So in that way, I think  
15          we've been out communicating about Burrard, and our  
16          intentions.

17                        But as I said, we haven't put out a  
18          concerted effort to specifically go after public  
19          understanding of what we're planning on doing with the  
20          plant.  I think we also wanted to wait to hear what  
21          this Commission had to say about how we characterize  
22          Burrard in our long-term plan.  And it may well be  
23          that we feel it necessary after that to go out and  
24          talk to people about it.

25 MR. O'RILEY:    A:    And I think, to be -- I would also add  
26          to that is, we appreciate there's some risk to doing

1           that as well -- opening up the broader debate. It  
2           doesn't come without risk. So I think we're -- we've  
3           been selective and targeted to date. And hopefully  
4           that will be sufficient.

5   COMMISSIONER MILBOURNE:   Thank you. The situation in  
6           Fort Nelson that I've been, again, I've made some  
7           applications for Orders on, is my understanding  
8           correct that that has nothing to do with self-  
9           sufficiency at this time? That programs you're  
10          talking about there, the investment you're talking  
11          about there, are not driven in any way, shape or form  
12          by a self-sufficiency argument.

13   MR. RICH:    A:    No. No, it's not. It's strictly --

14   COMMISSIONER MILBOURNE:   You mean, "No, I'm incorrect,"  
15          or "No, I'm not incorrect".

16   MR. RICH:    A:    No, it's not driven by self-sufficiency.

17   COMMISSIONER MILBOURNE:   Okay.

18   MR. RICH:    A:    It's driven by an expectation that the  
19          load is going to increase in the area.

20   MR. O'RILEY:   A:    Well, and in fact we're not able to  
21          supply the current load on a firm basis.

22   MR. RICH:    A:    Right. And we currently have a customer  
23          that's being served on an interruptible basis.

24   COMMISSIONER MILBOURNE:   Okay, so, that kind of leads to  
25          the next piece, then. There's been questions directed  
26          toward you as, if in fact due to these other studies

1 and initiatives that are floating around out there,  
2 some that you've got on the go and then there's this  
3 Section 5 inquiry looking into broaden the strategic  
4 nature of transmission corridors and so on and so  
5 forth; you've indicated that if the outcome of those  
6 processes is the long-term cost-effective -- compliant  
7 with Special Direction 10 resolution is to build a  
8 transmission line up there, right? That these assets  
9 that you would be proposing to build in the short-term  
10 wouldn't be kind of stranded or redundant or otherwise  
11 useless, right?

12 **Proceeding Time 2:18 p.m. T53**

13 MR. MATHESON: A: Yes, that's our view.

14 COMMISSIONER MILBOURNE: That's your view. My question  
15 if I might turn it around is -- maybe it's  
16 hypothetical, but if you had reason to believe that  
17 some time between now and 2016 a decision was made  
18 that the right thing to do was to build a transmission  
19 corridor, would you still go ahead and build those  
20 assets? On their own merits.

21 MR. RICH: A: I think the answer is yes. The estimated  
22 lead time for a transmission solution at this point is  
23 in the order of seven to eight years. And we have an  
24 expected requirement for load today that requires us  
25 to do something about it. So even if the long-term  
26 solution is transmission ultimately, there is

1 something that we need to do today to meet expected --  
2 to meet current requirements as well as expected  
3 increases in the load.

4 MR. O'RILEY: A: And I think, you know, we've had a lot  
5 of conversation about First Nations risk associated  
6 with ILM and the regulatory risk associated with that.  
7 I mean, all that applies again, building a  
8 transmission line through Treaty 8. So I mean, I  
9 think the risk around the transmission line is  
10 significant and needs to be considered in the  
11 calculation.

12 I'll just add, I mean, we think that the  
13 Fort Nelson Upgrade Project No. 3, the efficiency  
14 project with the duct firing is a pretty reasonable  
15 investment to make in the area, given for the baseload  
16 we get a bunch more energy for the same gas input and  
17 some pretty good reductions in water consumption and  
18 such. And then duct firing is a good-sized investment  
19 that will buy us some time there, that will give us  
20 some flexibility regardless of what -- you know, in  
21 the intervening years before the transmission line's  
22 in place, assuming that is the decision.

23 There aren't a lot of options to be had up  
24 there, and that's been the challenge with -- I've been  
25 kind of tangentially involved in Fort Nelson going  
26 back to the '90s when we had the diesel plants there.

1           And we've always been a bit behind the curve there,  
2           and I think that the benefit of that FNU3 is that it  
3           would buy us a bit of time and a bit of flexibility at  
4           a -- you know, it's not a low price but it's a  
5           reasonable price in the context of the options up  
6           there.

7   COMMISSIONER MILBOURNE:    If I should know the answer from  
8           all the kind of volumes of material that are around, I  
9           apologize for not knowing it, but is there any  
10          physical or technical reason why that interim power  
11          couldn't be -- energy couldn't be sourced by making a  
12          deal with somebody in Alberta?

13   MR. O'RILEY:    A:    Mr. Rich can speak to that.

14   MR. RICH:    A:    I think there was an IR posed to that  
15          effect, which looked at a scenario of wheeling --  
16          well, one scenario of wheeling through -- from B.C.  
17          through Alberta, but you're looking at --

18   MR. O'RILEY:    A:    I'm aware of that. I'm asking about  
19          just straight getting it from Alberta.

20   MR. RICH:    A:    Well, I guess the way the Alberta market  
21          works is it's a power pool based system, so everybody  
22          bids in it and it dispatches on a merit order basis.  
23          So either way you slice it, it's energy coming up  
24          through the end of a fairly thin network in that part  
25          of the province.

26   THE CHAIRPERSON:   A fairly what? Thin network, sorry?

1 MR. RICH: A: Thin network.

2 THE CHAIRPERSON: Thin, okay.

3 MR. RICH: A: So transmission losses are quite heavy,  
4 and that's one reason why costs of energy coming from  
5 Alberta can be fairly expensive relative to local  
6 generation.

7 MR. O'RILEY: A: But the issue, I mean, it really comes  
8 back to the reliability criteria we applied.

9 COMMISSIONER MILBOURNE: I'm sorry?

10 MR. O'RILEY: A: The reliability criteria we apply. So  
11 our preference in the normal approach is to have two  
12 sources of supply, and that's the so-called N minus 1  
13 approach. So even if we build FNU 3, we'll be relying  
14 on an equivalent amount of backup supply from Alberta  
15 if either one goes out of service. And that's the  
16 normal level of service that people get in the  
17 province, and that's the proposal that we would get,  
18 that we have for Alberta.

19 **Proceeding Time 2:23 p.m. T54**

20 COMMISSIONER MILBOURNE: Sorry, I didn't mean to  
21 interrupt you.

22 MR. O'RILEY: A: Sorry, for Fort Nelson.

23 COMMISSIONER MILBOURNE: Is not this area part of the  
24 geographic continuum with the province of Alberta? In  
25 other words, is it not part of something that has  
26 these activities over quite a continuous stretch of

1 territory?

2 MR. O'RILEY: A: Yeah, when you look at the map, that  
3 is one of the challenges with that part of the  
4 province. It is --

5 COMMISSIONER MILBOURNE: But I'm -- the B.C. activities  
6 are not isolated. There's not an island there. This  
7 is part of a geographic continuum of like activities.  
8 There's people over that imaginary dotted line on the  
9 map doing similar things?

10 MR. O'RILEY: A: There are.

11 MR. MATHESON: A: That's true.

12 COMMISSIONER MILBOURNE: Okay, and they're supplied by  
13 somebody. Obviously it's some -- I don't want to give  
14 evidence here, but on some economically rational  
15 basis, are they not?

16 MR. MATHESON: A: No, they are, but the supply in  
17 Alberta is actually, you know, very tight as well, and  
18 that's why we have an interruptible customer already  
19 on that system. Alberta can't supply with what they  
20 have right now. They're not able to provide us firm  
21 service to the customer that we've most recently  
22 interconnected. And so to suggest that there would be  
23 a fix in Alberta on a short-term basis so that we  
24 didn't have to build the Fort Nelson upgrade, I think,  
25 would be to stretch the bounds of their ability to  
26 supply that, unless we paid them to build something

1 specifically. And then I think the question would  
2 have to be asked, well, if you're going to do that,  
3 why wouldn't you actually just go ahead and build it  
4 in B.C.?

5 COMMISSIONER MILBOURNE: I don't know, but it might be  
6 cost-effective to do that. I have no idea. I'm just  
7 asking the question, whether or not --

8 MR. O'RILEY: A: I think the issue -- it is part of  
9 this continuum of the geography in Alberta.  
10 Unfortunately it's at the far, far end of the  
11 continuum, which is -- our experience has been -- I  
12 mean, there's an IR that talked about the number of  
13 curtailments on this customer and it was a significant  
14 number in a relatively short period of time. And we  
15 think, relative to another gas-fired plant, the  
16 upgrade looks pretty good because you're getting these  
17 efficiency gains, right? So it should be superior to  
18 putting in another thermal plant somewhere on the  
19 Alberta side of the border.

20 I think the other fact that you've got is  
21 you do have this jurisdictional issue. Like, somebody  
22 has drawn a line across that part of the province, and  
23 we can't count on Alberta to plan for that  
24 transmission system the same way that we might do it  
25 here.

26 MR. MATHESON: A: I think Mr. Rich has been --

1 MR. RICH: A: It is -- I mean, Chris is right. It is  
2 -- ultimately it's a reliability issue. So we do plan  
3 on serving Fort Nelson by -- if the transmission line  
4 from Alberta is out, then we can serve it locally, and  
5 if the local generating station is out we can serve  
6 from Alberta. So if we were to source something from  
7 Alberta, presumably it comes over the same  
8 transmission line. So you don't resolve the  
9 reliability planning standard that you're trying to  
10 achieve in serving the load in Fort Nelson by  
11 procuring Alberta. In terms of the AESO plans in our  
12 system, they plan on very much the same way we do. So  
13 they take projections of load increases, including  
14 from ours, and so we have a request in for additional  
15 service as well as other load.

16 And so part of this application makes  
17 reference to A Zero, which is the AESO's currently  
18 approved capital reinforcement plan for that area,  
19 which is hoping to improve the overall level of  
20 reliability and service to that area, with an expected  
21 load increase presumably for some of those activities  
22 that you're referring to that are happening on both  
23 sides of the border.

24 So I think both sides are experiencing  
25 growth, and both sides are dealing with the planning  
26 challenges of responding to that in terms of system



1 really big play that everybody is focusing on  
2 currently is the Horn River Play. That's really  
3 what's driving certainly the planning challenge on our  
4 side. I don't think there's a similar play on the  
5 Alberta side. I'm looking at David here.

6 MR. INCE: A: Certainly to the east of the border in  
7 the Rainbow Lick area there's more conventional gas  
8 activity. But the real monster play in the area is  
9 the Horn River, and that Horn River play could  
10 eventually bring three -- well, three-plus billion  
11 cubic feet a day, which is the size of the gas coming  
12 from the Mackenzie Valley area, eventually.

13 COMMISSIONER MILBOURNE: Okay, thank you. There was  
14 reference in the discussion to a new REUS study that's  
15 kind of within weeks of being surfaced.

16 MR. INCE: A: That's right.

17 COMMISSIONER MILBOURNE: Would it be possible to get some  
18 kind of a sense of how that study compared with the  
19 one that's been utilized in your planning?

20 MR. INCE: A: Yes, when it's delivered to us, when it's  
21 validated by the people who are doing the survey. My  
22 group is not responsible for tendering that survey.  
23 Mr. Hobson, actually, it falls within his  
24 organization. So it is possible to raise that  
25 question when Mr. Hobson's on the stand.

26 But once we get that survey, we'll be

1           integrating that into our 2009 forecast. 2009  
2           forecast typically the date of delivery is late fall,  
3           type vintage.

4 COMMISSIONER MILBOURNE: I'm sorry, I understood from  
5           some discussion here that it was within weeks.

6 MR. INCE: A: Oh, the end-use survey will be delivered  
7           within weeks. But the integration of that new  
8           information into the load forecast --

9 COMMISSIONER MILBOURNE: I'm just looking for the  
10          changes, okay?

11 MR. INCE: A: Yeah.

12 COMMISSIONER MILBOURNE: From the one that you relied on.  
13          And again, it doesn't have to be 42 decimal places.

14 MR. INCE: A: So certainly, as soon as we get that,  
15          we'll be evaluating it and looking at the differences  
16          between the end-use numbers.

17 COMMISSIONER MILBOURNE: And there may be some folks in  
18          this room would be interested in it.

19                         That was -- I guess while I'm there, I'll  
20          go here. In the revenue requirements hearing, and I'm  
21          sure you remember this, Mr. Ince, there was some  
22          discussion about load forecasts.

23 MR. INCE: A: Yes.

24 COMMISSIONER MILBOURNE: For the next couple of years.  
25          And in the course of that proceeding, and I'm only  
26          referencing this for the purposes of asking questions

1           about the future, not about -- asking the questions  
2           about the past or anything to do with the RRA. But  
3           there was some historical information, data, that was  
4           requested in a Commission panel IR that was helpfully  
5           provided. And I just asked Mr. Fulton to make sure  
6           you people had a copy of the thing I was going to  
7           refer to.

8 MR. FULTON:    Yes, Commissioner Milbourne, I did provide  
9           Mr. Godsoe with the document for his panel. The  
10          document's being distributed throughout the room now  
11          to the others, so the others could follow. So,  
12          subject to your approval, I'll ask that it be marked  
13          Exhibit A2-3 of these proceedings.

14 THE CHAIRPERSON:   That's fine, thank you, Mr. Fulton.

15 COMMISSIONER MILBOURNE:   I'm looking to the Chair to  
16          approve it.

17 THE HEARING OFFICER:   Exhibit A2-3.

18               (B.C. HYDRO UNDERTAKING NO. 10 FROM B.C. HYDRO F09/F10  
19               REVENUE REQUIREMENTS APPLICATION, RE: VOLUME 5,  
20               OCTOBER 8, 2008, PAGE 673, LINES 4 TO 26 AND PAGE 674,  
21               LINES 1 TO 9, MARKED EXHIBIT A2-3)

22 COMMISSIONER MILBOURNE:   And I'd like to refer to the --  
23          I guess it would be the first page, the pages aren't  
24          numbered, but it's a summary of a bunch of different  
25          parameters. And I'd like to go to line 1.1.1(b), and  
26          line 1.1.1(g). And the first one is the total energy

1 distributed to domestic customer, inclusive of line  
2 loss and system use, and the second one, item (g), is  
3 the total number of customers.

4 And with my kind of sophisticated computer  
5 here, I did some division, okay? And subject of that  
6 being validated by people more qualified with numbers,  
7 and when I look at -- take those two numbers and I  
8 divide the energy distributed by the number of  
9 customers, I come up with an average megawatt hours  
10 per customer. And this is all customers on the  
11 network, and all of them, not just one class.

12 **Proceeding Time 2:28 p.m. T56**

13 I kind of picked three years at -- and  
14 looked at 2001, the average megawatts per customer was  
15 33.2. In 2005, it was 33.4. And in 2008 it was 33.4.  
16 These are actuals. There, I think -- those are kind  
17 of reasonably good approximations of the numbers. And  
18 the forecast number for the 2010 was 32.5.

19 My kind of general observation was that  
20 notwithstanding all of the puts and takes in the mix  
21 of industrial customers, the change in that portfolio,  
22 the change in commercials, the change in housing  
23 stock, all that stuff that happened between 2001 and  
24 2008, the average customer on the system, the amount  
25 of energy they consumed didn't really change. At  
26 33.2, 33.4 and 33.4 on those three years, right?

1 MR. INCE: A: Right.

2 COMMISSIONER MILBOURNE: So, I take it from that that the  
3 growth in the system is due to the number of  
4 customers, rather than the amount used by any  
5 individual customer or customer group.

6 MR. INCE: A: Well, presumably those two numbers are  
7 tracking together. The energy and the customers.

8 COMMISSIONER MILBOURNE: Yeah, but that's almost -- it's  
9 almost a fixed relationship, at least on that seven-  
10 year period or eight-year period, right?

11 MR. INCE: A: Right.

12 COMMISSIONER MILBOURNE: So in order, then, to  
13 extrapolate, being a simple person, I was interested  
14 in knowing if you could take that and simply  
15 extrapolate forward through the LTAP period by the  
16 number of customers, total customers that you expect  
17 to add to the system.

18 MR. INCE: A: Yes.

19 COMMISSIONER MILBOURNE: You've got an -- that number is  
20 already there, right?

21 MR. INCE: A: We didn't explicitly include it in the  
22 LTAP, but certainly it's an easy calculation.

23 COMMISSIONER MILBOURNE: Yeah. I mean, you just  
24 multiplying and -- you know what the number is, you  
25 multiply it by 33.4 and then plot that or show that on  
26 these -- one or more of these graphs you've got, or

1 charts you've got.

2 MR. INCE: A: I assume the full 20 years.

3 COMMISSIONER MILBOURNE: Where it would fit within your  
4 current -- you've got a mid-range, a high and low  
5 forecast, and I'm hoping Mr. Godsoe will indulge me in  
6 an undertaking.

7 MR. GODSOE: With pleasure, we will take that.

8 **Information Request**

9 THE CHAIRPERSON: Thank you.

10 COMMISSIONER MILBOURNE: Ah. And then I'm going to  
11 really trade on his good nature here, and since the  
12 number in 2010, which doesn't look that much lower,  
13 but the number you forecast for 2011 is down to 32.5  
14 which, when you start multiplying it by seven digits  
15 of customers, it becomes a significant difference in  
16 terms of the total growth in load.

17 So what I'll ask you to do is plug in once  
18 33.3 and plug in the second time 32.5, because I  
19 think, if I remember some of the dialogue around that  
20 2010 forecast number, it reflected some of the stuff  
21 that's been going on in the economy of late.

22 MR. INCE: A: Yes.

23 COMMISSIONER MILBOURNE: And you're -- so that's -- I  
24 would find it really helpful if I could see that in  
25 this.

26 MR. INCE: A: So, I'll take the number of customers and

1           plug in 33.3 and 32.5, two separate lines.

2   COMMISSIONER MILBOURNE:    Yeah, and then put it in your  
3           trumpet.

4   MR. INCE:    A:    Right.

5   COMMISSIONER MILBOURNE:    Okay.

6   MR. INCE:    A:    To be helpful, you're seeing a change in  
7           that number. We're down to 32.5, and given the new  
8           2008 forecast, instead of 54,095, we're down to  
9           52,606. So we've dropped a fair amount of load in  
10          that 2010 time frame. That will reduce that factor  
11          even more.

12   COMMISSIONER MILBOURNE:    Yeah.

13   MR. INCE:    A:    And I would suggest that would be the  
14          industrial customer growth rate being -- a loss rate  
15          actually in this case, being much higher than the --  
16          so that we're reducing industrial load relative to the  
17          other customer categories. So that factor will  
18          decrease.

19   COMMISSIONER MILBOURNE:    To me, it's kind of interesting,  
20          because industrial load has been, all else equal,  
21          dropping in this province over the last number of  
22          years. But the growth in residential and others has  
23          been --

24   MR. INCE:    A:    Stable.

25   COMMISSIONER MILBOURNE:    -- coincidentally sufficient to  
26          offset that and maintain the average consumption per

1 customer at the same level.

2 MR. INCE: A: Ye.

3 COMMISSIONER MILBOURNE: Okay. And if there is any  
4 implications of that that were substantive on in terms  
5 of capacity requirements and so on, I'd just  
6 appreciate some editorial comments.

7 MR. INCE: A: Mm-hmm. Okay.

8 COMMISSIONER MILBOURNE: That would be kind of helpful.

9 Thank you.

10 **Information Request**

11 **Proceeding Time 2:38 p.m. T57**

12 COMMISSIONER MILBOURNE: I have one question I've put in  
13 the curiosity category. There was some discussion  
14 with the Terasen Utilities Group on differential  
15 pricing to IPPs, depending on hours a day, months a  
16 year of -- a grid, right, of price you pay for power,  
17 different months and different times of day. And I  
18 think the term you used was that this was intended to  
19 act as an incentive to the IPP people to deliver in  
20 times when this stuff was of value to you?

21 MR. INCE: A: Those were my words. Perhaps Mr. Scouras  
22 could --

23 COMMISSIONER MILBOURNE: It was the notion of incentive  
24 that I wanted to understand.

25 MR. INCE: A: Perhaps Mr. Scouras will have a different  
26 word, but that was my word.

1 COMMISSIONER MILBOURNE: I guess, the thing I was having  
2 a little difficulty understanding is, other than -- if  
3 I was an IPP operator I would certainly try and  
4 schedule my maintenance in the summertime or freshet  
5 or whenever your rates were low. But other than that,  
6 for the wind and the run of river guides, to my  
7 understanding they can't influence that. They give  
8 what they get. The wind blows or the water runs.  
9 They don't have any capability of storing anything or  
10 managing deliveries. They take it as it comes, right?

11 So where does the notion of incentive come  
12 from? Why is that structure there since they can't do  
13 anything to respond to it?

14 MR. MATHESON: A: Maybe I can start. Mr. Scouras will  
15 certainly be able to respond in more detail than I  
16 can, but I think the concept here is that not all wind  
17 sites and not all small hydro sites are necessarily  
18 equal in that regard. And so if we create conditions  
19 by which some will prevail over others because they're  
20 giving us energy that's profiled according to our need  
21 and our load, then those are the ones that are likely  
22 to prevail over others. And I think that's generally  
23 speaking the concept that we're after.

24 MR. O'RILEY: A: It's also an incentive to -- you can  
25 design these within a range. You can design them  
26 differently. So we're trying to give them a bit of an

1 incentive to -- so for example, if there was a bit of  
2 storage pond, that they would put that in based on the  
3 price signals. So the incentive is really in which  
4 projects people pursue and how they design them.

5 MR. INCE: A: So if you had hydrology which was more  
6 favourable to the winter months, you would get a  
7 higher price. And as Mr. O'Riley indicated, if you  
8 had some pondage and you could start water, and you  
9 could release that water during the four-hour super-  
10 peak period, that would be an advantage.

11 COMMISSIONER MILBOURNE: I'm having some conceptual  
12 difficulty with storing the wind. It's okay. I'll  
13 leave it at that.

14 MR. MATHESON: A: But wind -- and we'll find more out  
15 over time. As we begin to build data, historical data  
16 that we can use to try and predict where the wind is  
17 -- it blows the most and least in the province, we'll  
18 start to get a better idea and I think a better feel  
19 for the kind of deliveries that we can expect from  
20 wind projects. But the notion, I think, is that there  
21 are -- the wind doesn't blow equally across the  
22 province all the same, that there are some parts where  
23 you're going to get different profiles of wind in  
24 different geographic areas. And it's probably a  
25 little more difficult to use this so-called 3 by 12  
26 table to determine what the delivery profiles would

1 look like for wind projects as opposed to small hydro  
2 where we and the IPP --

3 COMMISSIONER MILBOURNE: The biomass or something else --

4 MR. MATHESON: A: Sure.

5 COMMISSIONER MILBOURNE: -- where you can control it.

6 MR. MATHESON: A: Sure.

7 COMMISSIONER MILBOURNE: Where you can store the energy.

8 MR. MATHESON: A: That's right.

9 COMMISSIONER MILBOURNE: That was the conceptual problem  
10 I'm having with this, right?

11 MR. INCE: A: Or perhaps wind projects -- the batteries  
12 or some other form of storage.

13 MR. MATHESON: A: Well, I think -- but I think the  
14 notion here was one that was meant to be put in place  
15 in the absence of storage. So that if we were going  
16 to get small hydro projects from the IPP community,  
17 that again some of them would give us deliveries at  
18 certain times of year, more advantageous over others,  
19 and that none of them have storage capacity per se.  
20 They might have some pondage but they really don't  
21 have --

22 COMMISSIONER MILBOURNE: I understand.

23 MR. MATHESON: A: -- storage in the same way that say  
24 the big hydro system has, and that by creating this 3  
25 by 12 table, we were able to start to figure out how  
26 these deliveries might correspond with our load and



1 support that estimate. And we would do -- we have to  
2 do more work in stages to refine that over time, and I  
3 think what will fall out of that will be not one big  
4 project, but a series of projects kind of tied  
5 together by the Burrard asset plan that will involve  
6 both capital dollars and operating -- or maintenance  
7 dollars, and some operating dollars, because there's a  
8 requirement for additional operators.

9 What I was speaking to was really the  
10 approval for that, and we will bring that -- we  
11 haven't requested significant dollars in this process.  
12 We plan to bring forward as part of our maintenance  
13 and capital budget, as -- in the next RRA, the first  
14 chunk of that money, and I would hope to have the  
15 asset plan drafted that will lay out the various  
16 chunks of work with more precision around the dollars  
17 than we've got today. It won't be perfect. But it  
18 will lay out in a bit sharper strokes what we plan on  
19 doing over a number of years. And -- so, the first go  
20 at that will be in the next RRA, because that's where  
21 we bring our capital and operating budgets,  
22 maintenance budgets.

23 COMMISSIONER MILBOURNE: Thank you. I understand the  
24 operating -- the O&M side of it going to the RRA. I  
25 was confused by the -- and maybe it was a question  
26 that should -- if there's -- if I have an issue, maybe

1           it should be addressed with Mr. Godsoe. I couldn't  
2           understand why the capital part of it would be going  
3           to an RRA proceeding, that was all.

4 MR. GODSOE:    Why don't I speak to that through argument?

5 COMMISSIONER MILBOURNE:    Yeah, it just kind of confused  
6           me.

7 MR. GODSOE:    Yeah.

8 COMMISSIONER MILBOURNE:    Thank you. And as my kind of  
9           last subject, you'll be pleased to know, could you  
10          explain to me what -- how you define capability? With  
11          some kind of a statistical, or two-sigma, or  
12          probability on it? What does the capability mean to  
13          you, in terms of deliverabilities? 100 percent? Is  
14          it 99.9? How do you define capability at B.C. Hydro,  
15          in terms of Special Direction 10?

16 MR. O'RILEY:    A:    Well, I think it varies depending on  
17          the asset. So, the hydro, it's relatively  
18          straightforward, because the number's actually  
19          included in the Special Direction. So, the number for  
20          Hydro is, what can you deliver in a critical water  
21          year? And that figure for the aggregate is 42,600,  
22          and that's specifically referenced in the document.

23                        For the thermal assets, it's a little more  
24          complicated. And for Burrard, I think, it's a special  
25          case. So for Burrard, I think what we're recognizing  
26          is that there has been a gap between the degree to



1           need to make significant investments and in fact  
2           reduce the planned reliance to get into a zone where  
3           we're reasonably comfortable.

4 MR. MATHESON:    A:   And it's a very interesting point you  
5           raise, actually, because if you think about that *sigma*  
6           in relative terms to the large hydro system and then  
7           say that capability has been expressed as the most  
8           adverse sequence of water inflows, that's a very  
9           conservative approach toward characterizing that  
10          plant's -- the collective plant's capability relative  
11          to that.  And I think what we're trying to say with  
12          Burrard is we don't want to go in completely the  
13          opposite direction and sort of pretend that Burrard is  
14          capable of something that none of us are really  
15          comfortable believing it can deliver.  And so it's a  
16          very interesting point you raise.

17 COMMISSIONER MILBOURNE:  Thank you.  I guess I'm probably  
18          even one step back from where you are, because to me,  
19          and maybe I've got this wrong, the 42,700 or whatever  
20          you want to call it is there, right?  They're the  
21          critical low water years and all the rest of it.  But  
22          you still have to put nameplates, capacity nameplates  
23          on your machinery.  And unless you've got some huge  
24          surfeit of capacity, you've got to look at your  
25          different units and say, yes, I've got 99 percent of  
26          probably that this will one will run and that one'll

1           run and that one'll run. You built up -- you have to  
2           have the machinery to convert that water into --  
3 MR. O'RILEY:    A:    Yes.  
4 COMMISSIONER MILBOURNE:   And that's the level I'm at.  
5 MR. O'RILEY:    A:    Okay, you're at.  
6 COMMISSIONER MILBOURNE:   I'm not where you are.  
7 MR. O'RILEY:    A:    Okay, no, fair enough.  
8 COMMISSIONER MILBOURNE:   I'm back one step from that,  
9           okay, because again I remember in the RRA there was  
10          some question about whether the nameplates that were  
11          on these units shouldn't -- there shouldn't be some  
12          downgrading of capacity on your units. And that's the  
13          point I'm at, okay?  
14 MR. O'RILEY:    A:    Okay.  
15 COMMISSIONER MILBOURNE:   Which is the broader issue, not  
16          the Burrard versus the Hydro issue.  
17 MR. O'RILEY:    A:    Okay, okay.  
18 COMMISSIONER MILBOURNE:   How do you define capability for  
19          the purpose of saying yes to the people that have to  
20          satisfy themselves that you are in compliance with SD  
21          10? How do you measure capability? What's your  
22          statistical standard, or your standard?  
23 MR. O'RILEY:    A:    Well, there's an -- for a hydro unit,  
24          and if we're talking about capacity, so we'll talk  
25          about megawatts versus gigawatt hours for a moment. I  
26          mean, that's an engineering exercise. Like you --

1       there's a rated output for a certain machine, and --  
2       that's based on the capacity of the turbine and the  
3       generator. And whatever the bottleneck is that causes  
4       that to be -- you know, whatever is the limiting  
5       factor. And with some plants you can do what's called  
6       overgating them. So you run them harder, and what  
7       happens is the energy that's produced during that time  
8       period takes more water, so it's done less  
9       efficiently. But if you're stuck you would do that.  
10      And so we would know that number. We'd know the rated  
11      number, we'd know the overgating number.

12               Some plants have a technical problem where  
13      you might say for a time period, until we've resolved  
14      that, we'll reduce the rated reliance on those units.  
15      Like, I think the units at Bridge River have a  
16      nameplate capacity of something like 70 megawatts, and  
17      I think the reliance on them is something like 55  
18      megawatts. So there's an issue there that we've  
19      backed off the maximum output, that we put a limit on  
20      what they can take out of the machine, and then that  
21      flows through our assessment of capabilities.

22               So in others it might be -- if I pick on  
23      Seven Mile, for example, which is a very relatively  
24      new and very reliable plant, the issue there is  
25      there's only -- there's not enough water to generate  
26      at peak levels for more than, I think, six hours. So

1       you've got to take -- there's a duration -- that's  
2       probably one of our tighter plants in terms of the  
3       degree to which you can rely on it for peak capacity.  
4       Whereas something like Revelstoke or Mica, there's no  
5       limit on duration really of capacity.

6                       So all those calculations are made, and  
7       flow into the -- you know, the overall numbers that  
8       you see, and periodically there's a change because of  
9       some condition, up or down.

10   **Proceeding Time 2:54 p.m. T60**

11   COMMISSIONER MILBOURNE:   I'm going to leave it at that,  
12       thanks.

13   THE CHAIRPERSON:   All done?

14   COMMISSIONER MILBOURNE:   Yeah, thanks.

15   THE CHAIRPERSON:   Thank you. Good afternoon, panel.

16   COMMISSIONER MILBOURNE:   Are you going to give them a  
17       break?

18   THE CHAIRPERSON:   Do you want a break? We'll break for  
19       10 minutes.

20   **(PROCEEDINGS ADJOURNED AT 2:55 P.M.)**

21   **(PROCEEDINGS RESUMED AT 3:04 P.M.)**

22   THE CHAIRPERSON:   Please be seated.

23                       Well, as I said before Commissioner  
24       Milbourne interrupted me, good afternoon, panel.

25                       Mr. Matheson, would I -- would you be the  
26       person I should talk to about Canadian entitlement?

1 MR. MATHESON: A: I could, it depends on the question  
2 related to it.

3 THE CHAIRPERSON: Well, it's probably one I should have  
4 asked -- I mean, the last time, the last IEP I think  
5 Ms. Kershner was designated as the spokesperson for  
6 the Canadian Entitlement. Do we have somebody  
7 designated this time?

8 MR. GODSOE: There's two people. So why don't you start  
9 with Mr. Matheson, but it might move quickly to Panel  
10 4.

11 THE CHAIRPERSON: Okay. I think I can -- it can wait  
12 till Panel 4.

13 Mr. O'Riley, this afternoon -- or this  
14 morning, you were talking with Mr. Fulton about  
15 reserve margins. And you were using margins of 5  
16 percent for hydro and 7 percent for thermal. You  
17 mentioned those two numbers, or was it --

18 MR. O'RILEY: A: Yeah. It's -- the operating reserve  
19 is calculated as 5 percent of your load supplied by  
20 hydro and 7 percent of your load supplied by thermal.

21 THE CHAIRPERSON: And that's -- those are WECC standards,  
22 are they, or some --

23 MR. O'RILEY: A: They are, yeah.

24 THE CHAIRPERSON: Yeah.

25 MR. O'RILEY: A: There's some talk of changing that to  
26 a blanket -- a different approach, but similar.

1 THE CHAIRPERSON: But that has nothing to do with your 14  
2 percent probabilistic determination of reserve margin.

3 MR. O'RILEY: A: The 14 percent is a planning margin,  
4 and Mr. Matheson can speak to that. Of the 14  
5 percent, 5 and 7 have -- the 5 and 7 has to come out  
6 of the bottom of that, and then the balance is there  
7 as a buffer for other risks, and such.

8 THE CHAIRPERSON: Let's get back to the 5 percent and the  
9 7 percent. I mean, these are required by WECC.

10 MR. O'RILEY: A: Yes.

11 THE CHAIRPERSON: And basically what that gives you, in  
12 terms of calling on neighbouring jurisdictions, is one  
13 hour?

14 MR. O'RILEY: A: It's one hour of reserves, let you  
15 have one hour. You've got to get your system back  
16 within -- shape within an hour.

17 THE CHAIRPERSON: So one hour is quite important, then,  
18 am I right in thinking, for operating purposes? I  
19 mean, if you lose a major transmission line, you can  
20 overload the others for one hour, you have a thermal  
21 overload capability?

22 MR. O'RILEY: A: To some extent it's that. It's really  
23 -- I mean, the one hour is time to get -- to start  
24 putting your system back in place, and it's also time  
25 to acquire power from the market, which would -- we've  
26 had a couple of outages in the last couple of years

1           where there was a severing of the north and the south.  
2           So we lost the 500 kV lines coming down from the Peace  
3           River through Prince George. A couple of years --  
4           probably two and a half years ago now, and so we lost  
5           a tremendous amount of generation. And we -- in that  
6           hour, we were able to acquire offsetting -- we were  
7           able to put -- start putting the system back into  
8           place, and we were able to get a bunch of power  
9           through Powerex to meet the load.

10 THE CHAIRPERSON:   And the hour gives you a time to  
11           curtail, does it?

12 MR. O'RILEY:    A:    You may curtail immediately, if --

13 THE CHAIRPERSON:   No, I'm talking -- you have curtailable  
14           agreements with some industrial customers, I take it  
15           they have --

16 MR. O'RILEY:    A:    Yeah, but that wouldn't be very much  
17           time to curtail. That would be -- you'd have to  
18           decide immediately and give them notice.

19 THE CHAIRPERSON:   Okay. Thank you.

20                        Just to pick up on a third -- a point that  
21           Commissioner Milbourne raised, it is not feasible to  
22           wheel 25 megawatts from -- through Alberta to Fort  
23           Nelson.

24 MR. O'RILEY:    A:    No.

25 THE CHAIRPERSON:   The line losses -- even if you could  
26           move it up the central part of Alberta, it's purely



1 B.C. Hydro application. The glossary.

2 THE CHAIRPERSON: The definition of "dependable  
3 capacity", and I wonder if you could read that. Do  
4 you see it? It's somewhere on page 7, I think.

5 MR. O'RILEY: A: Yeah.

6 "Dependable capacity: The amount of  
7 megawatts a plant can reliably produce when  
8 required, assuming all units are in service.  
9 Factors external to the plant affect its  
10 dependable capacity. For example,  
11 streamflow conditions can restrict the  
12 dependable capacity of hydro plants and fuel  
13 supply constraints can impact thermal plant  
14 dependable capacity. Planned and forced  
15 outage rates are not included.

16 Also, for the purpose of Resource  
17 Option estimates: The *capacity* a plant can  
18 reliably deliver for the duration of time in  
19 which it is required. The dependable  
20 capacity used in the annual resource balance  
21 is the maximum capacity that a plant/unit  
22 can reliably provide for 3 hours in the peak  
23 load period of weekday during the continuous  
24 two weeks of cold weather."

25 THE CHAIRPERSON: Thank you. And for describing or  
26 determining Burrard's dependable capacity, have you

1 considered the three hours for two cold weeks?

2 MR. RICH: A: Yes, and that wouldn't be -- when we say  
3 three hours, that's for a minimum of three hours, so  
4 typically we would run Burrard for longer. Burrard is  
5 not, I think I said before, it's not really a peaking  
6 facility within the day.

7 THE CHAIRPERSON: No.

8 MR. RICH: A: So you would tend to run it evenly  
9 throughout the day. So there is some peaking  
10 capability.

11 THE CHAIRPERSON: So you would -- to have it at each unit  
12 at it's 450 megawatts by three o'clock or whatever,  
13 the first of the three hours, you'd have had to have  
14 started six hours earlier and ramp it up.

15 MR. RICH: A: Yes, and actually even longer than that.  
16 There's quite a time requirement for the -- if you  
17 could get the first unit up in that kind of timeframe,  
18 it becomes successively more difficult to get the --  
19 so you have to start earlier, and part of it is buying  
20 gas in the market, part of them is getting the units  
21 warmed up, part of it's having enough people to do it  
22 sequentially. So the three hours is really a hydro --

23 THE CHAIRPERSON: Yeah.

24 MR. RICH: A: It's more a hydro issue. A water  
25 limitation issue.

26 THE CHAIRPERSON: Notwithstanding the fact that you'd

1 have to run them longer than three hours for those two  
2 weeks of cold weather.

3 My next point is really to go to the gas.  
4 I mean, you have to go now to -- or Powerex has to go  
5 for you to Huntington or Sumas or wherever to buy it.  
6 MR. RICH: A: Yes. We have firm transmission capacity  
7 for the full 900 megawatts back to Sumas Huntington,  
8 and then we have some transmission, and I probably  
9 would say for at least half back to Station 2, so that  
10 we're not trying to source the whole amount in -- at  
11 Sumas. And that's just to get some diversity in that  
12 portfolio.

13 **Proceeding Time 3:13 p.m. T62**

14 THE CHAIRPERSON: If you ever got all six units up and  
15 running, going full-blast, and generating your 917  
16 megawatts or whatever it is, how much gas would you  
17 take -- draw?

18 MR. O'RILEY: A: You know what? I've known that in the  
19 past, I just don't -- it's quite a large volume.

20 THE CHAIRPERSON: Don't worry. Yes.

21 MR. O'RILEY: A: I just don't have that number off the  
22 top of my head. It's -- we had five last -- so it's  
23 not an extreme case. We had five units running last  
24 February. And at that time, that was all the units we  
25 had. So --

26 THE CHAIRPERSON: Well, perhaps you could --

1 MR. O'RILEY: A: Yeah, we'll -- yeah.

2 THE CHAIRPERSON: -- could give us the number.

3 MR. O'RILEY: A: Sure.

4 **Information Request**

5 THE CHAIRPERSON: Also, tell us -- or I'd be interested  
6 to know that you have the capacity, in your pipeline  
7 -- my problem would be, given the fact that, as this  
8 is cold weather, Terasen would probably be, I must  
9 say, moving -- transporting a fair amount of --  
10 delivering a fair amount of gas at the same time. And  
11 I'm just wondering if you've ever done any analysis to  
12 determine if your full load can -- and Terasen's max  
13 day load can co-exist on the same day.

14 MR. O'RILEY: A: Well, they better supply it, because  
15 we pay them ten million a year for firm gas  
16 transportation. So, and I have no reason to think  
17 they wouldn't. But we've -- and I think it was 1998  
18 we changed our -- we entered into a long-term contract  
19 with Terasen for firm gas transportation for the whole  
20 amount, to allow us to rely on it for capacity, and  
21 that's their obligation, to ensure they can do that.

22 THE CHAIRPERSON: My experience with Terasen is, they  
23 would serve their domestic market first, before they  
24 --

25 MR. O'RILEY: A: Yeah.

26 THE CHAIRPERSON: But that would be my pious hope, being

1 a domestic customer of --

2 MR. O'RILEY: A: Yeah. We might be back here with a  
3 service complaint if that was in fact the case.

4 COMMISSIONER MILBOURNE: You'd plug the meter?

5 MR. O'RILEY: A: No, I shouldn't -- I don't want to be  
6 glib. We get great service from Terasen on the gas  
7 pipeline and they're very diligent about meeting the  
8 obligations, and they are quite flexible with us in  
9 terms of ramping and such, with the plant. So we had  
10 no -- as far as -- I cannot recall a bad experience  
11 we've had, and with carrying gas across their system  
12 to supply Burrard, or Island Cogen.

13 THE CHAIRPERSON: Thank you. If you could turn to the  
14 application B-1, again, pretty well the last page in  
15 the entire piece, page 6.62. I think Mr. Fulton took  
16 you there this morning. Somebody did this morning,  
17 because it's still open at that page, I haven't closed  
18 it.

19 And I'm wondering if you can explain to me  
20 under what circumstances you might be obliged to  
21 change Burrard's status from a soft RMR to a hard RMR.

22 MR. O'RILEY: A: Well, I can just -- I think I -- I may  
23 have said this before, but we will run or do whatever  
24 we need to do to run Burrard to meet our peak load --  
25 our B.C. Hydro load. We do not intend to -- by  
26 formally designating it as an RMR, we would give BCTC

1 the right to dispatch the plant and they would be able  
2 to sell transmission to other parties based on that  
3 flexibility, and we've chosen not to do that. So,  
4 whatever we need to do to support our load in Lower  
5 Mainland and Vancouver Island, prior to 5L83 coming  
6 into place with respect to Burrard, we will do, and we  
7 think we can do that. We don't need to formally  
8 designate it as RMR to achieve that.

9 THE CHAIRPERSON: I guess one of the problems with RMR is  
10 that you could designate one -- power up one of your  
11 units. I imagine there would be four, five or six as  
12 --

13 MR. O'RILEY: A: There's six units.

14 THE CHAIRPERSON: You don't have to designate the entire  
15 station.

16 MR. O'RILEY: A: Yes.

17 THE CHAIRPERSON: And if you were to designate, is it  
18 unit six as an RMR --

19 MR. O'RILEY: A: Four, five and six are the newer units  
20 and the more reliable units.

21 THE CHAIRPERSON: And they've got better control systems.

22 MR. O'RILEY: A: And they have better control systems.  
23 So our preference, we run those first, as in  
24 generating mode we might -- if we're running in synch  
25 condensed mode, we might -- we would run -- tend to  
26 run probably two or three first.

1 **Proceeding Time 3:18 p.m. T63**

2 THE CHAIRPERSON: If for some reason you had -- and BCTC  
3 said, "I'm terribly sorry but, you know, to meet N  
4 minus 1 with one major circuit out, we have to have  
5 Burrard 6 designated as RMR." Does that mean because  
6 it takes you six hours to get Burrard 6 up to its full  
7 load, that in fact it would run 24/7 while you  
8 designated it as RMR?

9 MR. O'RILEY: A: Well, the load isn't constant through  
10 the day, so they're planning to run for the evening  
11 peak. Their concern would be over the evening peak.  
12 And so you'd have some time through the course of the  
13 day that you could ramp it up to meet the needs. You  
14 wouldn't -- I mean you wouldn't necessarily have to  
15 have it -- run it full load all the time. I think  
16 what we're saying is if we were designated as RMR,  
17 there would be a minimum that we'd have to have the  
18 unit running 24 hours a day, and then we'd ramp up for  
19 there based on the load conditions.

20 THE CHAIRPERSON: And it seems to me that RMR also stands  
21 for "rubber meets road". I mean, then you really  
22 would know what the capabilities of your units were.

23 MR. O'RILEY: A: Yes, but we run them -- I mean, one of  
24 the things that -- I mean, we do run them anyway.  
25 Like, we ran them extensively with no concerns in  
26 December, you know, during the cold snap, and we

1 tested the -- in the course of doing that we tested  
2 the whole system, acquiring gas, scheduling the gas  
3 and the transportation, ramping up the units. And  
4 then like I said, we ran them extensively in February  
5 prior. And then there's periodic times where we'd run  
6 them for trade purposes for Powerex, and that's  
7 allowed under our transfer pricing agreement. So I'm  
8 comfortable with the degree to which the units get  
9 tested through the normal course of business.

10 There was a time a few years ago where we  
11 actually went to a formal monthly testing, because  
12 they were -- given the supply/demand balance, they  
13 were tending to sit there. We weren't getting enough  
14 exercise through the normal course, and we are getting  
15 that today. So we don't need the same monthly testing  
16 machine.

17 THE CHAIRPERSON: Thank you.

18 Okay, my next and final series of  
19 questions, not surprisingly, is Fort Nelson. Again  
20 going to your order, you've asked the Commission to  
21 approve expenditures for definition and  
22 implementation. So what is the status of the  
23 definition?

24 MR. O'RILEY: A: I can speak to the project. So we  
25 entered into that definition phase in October, and the  
26 plan would be to make an implementation phase decision

1 at our May board meeting. So I think we've requested  
2 an early order on that to facilitate that. And we  
3 also require information from the Alberta system  
4 operator as well with respect to their upgrade, to  
5 facilitate that decision. So the definition phase  
6 would end in May.

7 We are typically in definition phase, we  
8 are only carrying one option, so we're further to  
9 finding one option. In this case because of the  
10 unique circumstances, and I think you spoke about this  
11 with Mr. Elton, we are carrying two options. They are  
12 closely related options. And thereby the incremental  
13 cost of carrying both options forward is relatively  
14 modest. But the project is progressing well. We've  
15 got the tender responses back. We've had tenders out,  
16 tender responses back. Pretty good responses from a  
17 number of suppliers. We've got -- there's a couple  
18 that we're sole sourcing because of the major  
19 equipment, and we've got responses back on those.

20 THE CHAIRPERSON: Okay, so when -- you then have to get  
21 management committee, executive committee approval  
22 from B.C. Hydro then, the power, whatever the C  
23 projects?

24 MR. O'RILEY: A: The capital projects can be at a board  
25 meeting.

26 THE CHAIRPERSON: Capital projects. So all that goes in

1 sequence, culminating in a May 17 board meeting.

2 **Proceeding Time 3:23 p.m. T64**

3 MR. O'RILEY: A: Yeah, we've talked about this fairly  
4 extensively with our Board, and this went to our Board  
5 most recently in mid-September, and whenever we bring  
6 an application forward to the Commission, whether it's  
7 -- well, for approval we get that approval from the  
8 Board first. And they approved the -- so they saw the  
9 form of the application, the fact that we had a  
10 preference for Option 3, but we were carrying Option 2  
11 and they understood the reasons we were doing that.  
12 And they understood that we would be bringing both  
13 options here.

14 Our strong preference is still for Option  
15 3, so that's the track we would be on, and we'll  
16 shortly be preparing the Board materials for that, for  
17 the main meeting. And that's the -- going through  
18 that preparation is really the process by which we get  
19 management approval, and that will include taking it  
20 to our risk management committee in the company at the  
21 executive level, and then it will go to the capital  
22 projects committee of the Board, and then the next day  
23 it will go to the Board, the full Board.

24 THE CHAIRPERSON: So am I fair to say this thing has been  
25 fully engineered?

26 MR. O'RILEY: A: It's fully engineered. It's -- we've

1 -- the way we've -- the way we're undertaking this is  
2 we have a -- we've identified the design for the two  
3 options. We've done the engineering necessary to  
4 specify the components, and the performance that we're  
5 looking for. And we've issued tenders for those.  
6 There's -- and we've got responses. So, a big chunk  
7 of -- a chunk of the engineering is being done by the  
8 vendors, based on our specifications. So we've done  
9 our part of the engineering for these two options.

10 THE CHAIRPERSON: Okay. Just very briefly to talk about  
11 the northwest development project that the AESO has  
12 got. That will be finished by the end of March, 2010,  
13 do I get from your answer to 19 -- Panel IR 191?

14 MR. RICH: A: Yeah, that's correct. It's being  
15 completed in stages, yeah.

16 THE CHAIRPERSON: And when that happens, then what --  
17 your unit at Fort Nelson ceases to be TMR, does it?

18 MR. RICH: A: For a couple of years, and then as a  
19 result of ongoing regional load growth, not just from  
20 ourselves but from the Alberta side, there is an  
21 expectation that TMR requirements -- there will be a  
22 need for TMR requirements again.

23 THE CHAIRPERSON: And the line from Rainbow Lake to Fort  
24 Nelson, what -- that's 144 kV?

25 MR. RICH: A: That's correct.

26 THE CHAIRPERSON: And what sort of capacity?

1 MR. RICH: A: Transfer capability?

2 THE CHAIRPERSON: Yes.

3 MR. RICH: A: It's in the order of 117 megawatts.

4 THE CHAIRPERSON: Hundred and --

5 MR. RICH: A: Seventeen.

6 THE CHAIRPERSON: One-seven-zero?

7 MR. RICH: A: Sorry, one-one-seven.

8 THE CHAIRPERSON: One-one-seven, yes. And by the same  
9 token, that's what you would be able to export if you  
10 had that much.

11 MR. RICH: A: That's correct.

12 THE CHAIRPERSON: So, when we talk about the transmission  
13 line coming up from Peace River, or the G.M. Shrum or  
14 wherever, I mean, it won't be islanded, because you'll  
15 always have the ability to bid in into the Alberta  
16 pool.

17 MR. RICH: A: Right. So one of the -- within the scope  
18 of the transmission study that BCTC's undertaken is  
19 actually to understand what the continued  
20 interconnection capability would be, whether you'd  
21 need to put some facilities in place to prevent loop  
22 flow issues, for example, because we're now -- we'll  
23 be interconnected with the Alberta system at two  
24 points.

25 **Proceeding Time 3:28 p.m. T65**

26 THE CHAIRPERSON: If you turn to Panel IR 1.11.1, as I

1 understand your answer to this, if the Commission  
2 approves Option 3, you'll be purchasing a new LM6000  
3 and a new steam generator, and really I have to wonder  
4 what'll happen to the existing one.

5 MR. O'RILEY: A: The LM6000 -- I mean, we'll get a  
6 trade-in, and there's a trade-in credit in the capital  
7 cost estimate. So they'll take it back and refurbish  
8 it and sell it to somebody, sell it to someone else.

9 THE CHAIRPERSON: And the --

10 MR. O'RILEY: A: I believe the steam turbine is the  
11 same, but --

12 THE CHAIRPERSON: Steam generator.

13 MR. O'RILEY: A: Steam generator, yeah.

14 THE CHAIRPERSON: I mean, it seems to me that by us  
15 approving Option 3, what we've in fact done is we've  
16 approved most of the kit for a Greenfield, and all  
17 you'll need is another steam turbine and you'll have  
18 the second unit at Fort Nelson.

19 MR. O'RILEY: A: Yeah. I mean, there's a lot of other  
20 things that go with building a Greenfield plant,  
21 permitting, water, a structure site. I mean there's  
22 significant savings to doing this upgrade relative to  
23 a brand new, a new, brand new plant.

24 THE CHAIRPERSON: But you wouldn't do a brand new plant.  
25 You'd try and piggyback off your existing systems,  
26 wouldn't you?

1 MR. O'RILEY: A: Yeah. I mean, that's really what  
2 we're doing here. We see it that way.

3 THE CHAIRPERSON: Yeah, because 140 million is not  
4 exactly a cheap conversion, is it?

5 MR. O'RILEY: A: It's not, but I would think about --  
6 it's a bit of a unique -- the way I think of this is  
7 in two parts, and there's a good IR that explains it.  
8 By doing the project with the exception of the duct  
9 firing, which is essentially Option 2, we get --  
10 without any extra gas input we're getting a chunk of  
11 energy for the life of the plant at the equivalent of  
12 about \$93 a megawatt hour, which in the context of  
13 Fort Nelson where there's not a lot of options, that  
14 -- not bad. And you're pre-buying that essentially  
15 for the whole life of the asset. And then you're  
16 spending -- to get from Option 2 to Option 3, you're  
17 spending another \$45 million for 15 more megawatts, so  
18 there's another 3 million a megawatt for the capacity,  
19 which again in the context of the limited options up  
20 there and for a relatively manageable chunk of  
21 capacity, that's kind of in line with some of our  
22 lower load projections, you know, it's not  
23 unreasonable.

24 MR. RICH: A: If I can add to Mr. O'Riley's comment, if  
25 you look at the analysis, the operating costs with  
26 FNU2, the first option, for example, is actually the

1 same as under the expected scenarios and gas prices,  
2 the same as the existing plant. So you're essentially  
3 getting additional generating capability for the same  
4 existing operating costs.

5 THE CHAIRPERSON: Right. Would you turn to Panel IR  
6 1.11.1. Sorry, 1.14.1, I apologize.

7 MR. O'RILEY: A: Yes, I have that.

8 THE CHAIRPERSON: You have line 3 there. I wonder if you  
9 can break down those -- further break down those two  
10 numbers between --

11 MR. O'RILEY: A: Line 3?

12 THE CHAIRPERSON: Yeah, line 3, mechanical major  
13 equipment.

14 MR. O'RILEY: A: Yeah.

15 THE CHAIRPERSON: And I imagine that's the turbine, the  
16 new LM6000, the new steam turbine and the new OTSG and  
17 the new water treatment plant, and then I think  
18 probably a bunch of other things. I wonder if you can  
19 break those down.

20 MR. O'RILEY: A: Yeah, we would have to undertake to do  
21 that.

22 THE CHAIRPERSON: That will be fine. All right, Mr.  
23 Godsoe?

24 MR. GODSOE: We'll take that undertaking.

25 THE CHAIRPERSON: Thank you.

26

**Information Request**

1 THE CHAIRPERSON: And probably my last question again on  
2 Panel IR 17.1 and 17.2. Whether it was through my bad  
3 drafting or -- I'm not sure. But what I was trying to  
4 ascertain was comparison between the -- asking you to  
5 assume that the entire output of both scenarios was  
6 sold to a single gas plant. And I wondered what the  
7 incremental revenue was -- would be from that sale.  
8 And what the incremental impact on your cost of  
9 service, or your revenue requirement, would be.

10 So if you turn to 117.2 -- do you have that  
11 in front of you?

12 **Proceeding Time 3:33 p.m. T66**

13 I am having problems with the second  
14 paragraph.

15 "Based on the incremental generation from  
16 FNU2 and 3 of 33 gigawatt hours a year and  
17 25 gigawatt-hours a year respectively ..."

18 Those were not the numbers I was actually expecting.

19 MR. O'RILEY: A: So, I think the challenge is, I'm not  
20 sure we understood exactly what you're looking for.  
21 So maybe we could just talk about it.

22 THE CHAIRPERSON: Okay, we'll start again. What I'm  
23 trying to ascertain is, how much generation do you  
24 expect from FNU3 and FNU2 -- from the two options?  
25 Incremental generation.

26 MR. O'RILEY: A: Well, the -- yeah, so we have -- if

1       you look at the next IR, 1.18.1, we have the output.  
2       So there's 360 in the base, another 68 for FNU2, and  
3       this is assuming 100 percent utilization, and then  
4       there's a question of the duct-firing, whether you use  
5       it or not. If you -- with FNU3, with the duct-fire  
6       running 100 percent of the time, it's another 87.  
7       It's a total of 151 gigawatt hours. Without the duct-  
8       firing running, it's 64 gigawatt-hours.

9       THE CHAIRPERSON:    Okay.

10      MR. O'RILEY:    A:    So, is that -- that's probably -- that  
11       may be the basis -- I think you're asking if you incur  
12       the cost to supply this amount of generation, and then  
13       you factor in the transmission investments, the cost  
14       of that, and then assume you sell all that to a  
15       customer, what is the net cost? Is that fair?

16      THE CHAIRPERSON:    I was -- I know -- let's let my out  
17       question be then, assuming that you find a single gas  
18       producer who will take under FNU2 68 gigawatt hours a  
19       year, and under FNU3 151 gigawatt hours a year, and  
20       ignoring transmission and line losses, because they'll  
21       just get in the way, under rate 1200 and under rate  
22       1823, what revenue would you expect from that one  
23       customer? And I'm also assuming that gas plants have  
24       a load factor a little higher of 60 percent.

25      MR. O'RILEY:    A:    Yeah, this is assuming -- this would  
26       100 percent, the way this is done.

1 THE CHAIRPERSON: Yeah, I mean, they don't turn the thing  
2 off at five o'clock and go home.

3 MR. O'RILEY: A: So -- yeah. Yeah.

4 THE CHAIRPERSON: So that -- and then I'm asking, what is  
5 -- what would be the incremental cost of the service?  
6 The return -- the depreciation and the return on  
7 equity, which is 8 percent of whatever the capital  
8 amount is, the depreciation, whatever, -- however long  
9 you want to amortize it, 25 years according to Mr.  
10 Lauckhart. And then what are the incremental  
11 operating costs. And in FNU terms, FNU3 terms, the  
12 gas costs. And just compare the two.

13 MR. O'RILEY: A: Yeah. So, would it -- I mean, one  
14 quick comparison would be between -- like, we've got a  
15 unit cost under the incremental FNU2 of \$93 a megawatt  
16 hour.

17 THE CHAIRPERSON: That's levelized.

18 MR. O'RILEY: A: That's levelized.

19 THE CHAIRPERSON: I'm really not --

20 MR. O'RILEY: A: You don't want levelized.

21 THE CHAIRPERSON: I don't want to get levelized. I want  
22 to see the impact on your revenue requirement.

23 **Proceeding Time 3:38 p.m. T67**

24 MR. O'RILEY: A: Okay.

25 THE CHAIRPERSON: Can that be done? Mr. Godsoe?

26 MR. GODSOE: Give me one minute.

