

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 25, 2009

PROCEEDINGS AT HEARING

BEFORE:

A. J. Pullman,	Chairperson
B. Milbourne,	Commissioner
M. Harle,	Commissioner

VOLUME 7

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 Westminster

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VANCOUVER, B.C.

February 25, 2009

(PROCEEDINGS RESUMED AT 8:32 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: Mr. Godsoe, good morning. You have some business?

MR. GODSOE: I do, Mr. Chairman, Commissioners. I thought this would be a utility, given that the customer groups are approaching in their cross-examination, and we have an update to Exhibit B-12, the response to BCUC IR 3.238.2, and that IR, you might remember, compares the Conference Board of Canada October, 2008 economic forecast to subsequent forecasts. And what we wanted to do was to bring that up to date, to look at forecasts that have issued subsequent to that IR response, which was filed on 10 February 2008. So I would ask that this be entered and marked Exhibit B-8, and called "Update to economic forecasts."

1 THE CHAIRPERSON: Thank you.

2 MR. GODSOE: Sorry, B-18, my apologies.

3 THE CHAIRPERSON: I guess if we sit here long enough,
4 you'll be updating this bad news every week, will you?
5 (ONE-PAGE UPDATE TO EXHIBIT B-12, RESPONSE TO BCUC IR
6 3.238.2, MARKED EXHIBIT B-18)

7 **CROSS-EXAMINATION BY MR. WALLACE:**

8 MR. WALLACE: Q: Good morning, Mr. Chairman,
9 Commissioners, panel. Mr. Godsoe anticipated where I
10 was going to start out this morning. My first
11 question was going -- to you was going to be how much
12 worse had things got since the cut-off date for the
13 application. I've had a very brief look at this, but
14 wouldn't mind just asking a couple of questions on it.
15 Who would be the member? Mr. Ince?

16 It appears, if I'm right, and looking at
17 this Exhibit B-18, that things have got worse in the
18 short run since the evidentiary update, but that in
19 the longer run, 2010, or I guess -- well, 2011 through
20 2013, the current consensus or at least the Conference
21 Board of Canada would be more optimistic than it was
22 at the time?

23 **Proceeding Time 8:34 a.m. T2**

24 MR. INCE: A: Yes, that's correct. Mr. Wallace, would
25 it be helpful to me to run through this in terms of
26 the columns and what was involved in the forecasts and

1 how things have evolved?

2 MR. WALLACE: Q: Sure, that would be great, thank you.

3 MR. INCE: A: So it's real GDP growth, obviously it's a
4 percentage increase relative to calendar 2007. So in
5 the evidentiary updates for 2008, there was a
6 projection that it'd be 1.2 percent growth over the
7 2007 timeframe. And so the leftmost column is what
8 was used in the LTAP evidentiary updated dated
9 October, and you see the numbers for 2008, 1.8 percent
10 economic growth, 3.3, 2.8 percent and so on.

11 And going to the right, we received an
12 update from the Conference Board of Canada, just a
13 short-term update, so that's the third from the right,
14 showing that things have deteriorated in the short
15 term. So they were down to .3 percent economic
16 growth, but relatively the same level of growth in
17 2010.

18 So the very most recent forecasts are the
19 Conference Board, February 2009. I think this was on
20 the 14th. And it shows that things again have worsened
21 in 2009. We're into the negative territory now but
22 with a strong rebound, and this did take into account
23 the government's economic stimulus package. And keep
24 in mind that these are B.C. specific, so the economics
25 in this package would be the Canadian government.

26 An interesting fact is that if you look at

1 the evidentiary update and you compound these numbers
2 out to 2012, you come up with almost exactly the same
3 number as with the Conference Board of Canada
4 Quarterly Forecast that was issued in February. So I
5 think it's 15 percent cumulative growth by the time we
6 get to 2012 in both forecasts. And in fact if you go
7 to 2013, because you have 2.6 percent growth in the
8 new forecasts relative to 2.2 percent growth in 2013,
9 then the compounded growth rate in the new forecast is
10 actually higher.

11 And then two days later the government came
12 out -- the Ministry of Finance, with their forecasts,
13 and it shows a more dire prediction for 2009, and more
14 muted growth in 2010. If you compound these numbers,
15 you do get to a lower number than you would have with
16 the October, 2008 number.

17 **Proceeding Time 8:36 a.m. T03**

18 MR. WALLACE: Q: And what number do you get to?

19 MR. INCE: A: I haven't got that on hand, but I think
20 it would be about one percent lower overall
21 compounded.

22 MR. WALLACE: Q: Okay. And in the LTAP evidentiary
23 update column, October, '08, that is the growth that
24 you used for the purpose of the forecast that was
25 filed with the December 22nd, 2008 update?

26 MR. INCE: A: Yes, it's one of the drivers, not the --

1 of course, the overall driver, it's just one of the
2 factors that goes into the forecast.

3 MR. WALLACE: Q: Yes, I understand that. I just wanted
4 to make sure the reference to October '08 was
5 consistent with the December 22nd update.

6 MR. INCE: A: Yes.

7 MR. WALLACE: Q: Thank you. And just to be clear,
8 these are -- when you say 2008, that is a calendar
9 year, and it would be nine months of your fiscal 2009?

10 MR. INCE: A: These are all calendar years.

11 MR. WALLACE: Q: And accordingly each calendar year is
12 nine months of the fiscal year that's one year later.

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

14 MR. WALLACE: Q: Thank you. Thank you, that's quite
15 helpful.

16 Now, the application at page 6 -- or the
17 update at page 6 says "this downturn is not expected
18 to be structural. That is, after the current slow-
19 down, the rate of economic growth is expected to be
20 the same." Or is "expected to resume", I'm sorry.
21 What were you intending by the expression "not
22 expected to be structural"?

23 MR. INCE: A: Well, our interpretation of that wording
24 was that, for example, when we did the 2007 forecast,
25 we removed a lot of load from the forestry sector, and
26 that was due to the pine beetle. Simply, the wood

1 wasn't there. So we did a major study in 2000 -- to
2 develop a 2007 forecast that predicted the allowable
3 annual cut, and in the Interior, it was obvious that
4 was significantly affected by the pine beetle. Up to
5 80 percent of the total pine beetle harvest would
6 simply be gone within 10 to 20 years. And so, we
7 removed about 1500 to 2,000 gigawatt hours a year from
8 the 2007 forecast, because of that significant impact
9 on the forestry sector. And I would say that's
10 structural. The wood simply isn't there.

11 But with respect to the most recent
12 forecast, I think it's a crisis in confidence. It's a
13 shake-out of the banking sector, it's a sector with
14 bad debt. And I think that'll eventually work itself
15 through. So I don't think it's a physical symptom. I
16 think it's -- or a crisis in confidence.

17 **Proceeding Time 8:39 a.m. T4**

18 MR. WALLACE: Q: Do you -- and I suggest to you that
19 doesn't apply necessarily to all sectors, and would
20 suggest that newsprint might be another area that is
21 structural, that the load will not come back simply
22 because the economy was --

23 MR. MATHESON: A: I think what we meant by those words,
24 we weren't intending to imply that there was nothing
25 structural occurring in any sector across the economy.
26 I think what we're intending to imply was that there

1 was a two-year, essentially a two-year delay in a
2 forecast as a result of the downturn. But then the
3 economy essentially would resume at roughly the same
4 trajectory that had been there previously. And so you
5 saw this essentially two-year lump right across the
6 board, but that things would return. But that wasn't
7 to imply, as you're pointing out, that there weren't
8 certain sectors that would see substantial
9 differences. It was more of a macro look than a micro
10 one.

11 MR. INCE: A: And then to follow up on that comment
12 regarding newsprint, yes, we think that newsprint is
13 going to be significantly affected going forward. And
14 that's one of the areas of the forecast that perhaps
15 it is structural in that digital media, so you know,
16 the next generation is more used to looking at
17 computer screens relative to reading a newspaper. And
18 so our projection of newsprint demand is down, and
19 that flows into the forecast. So we have reduced that
20 significant portion of load in our forecasts related
21 to newsprint.

22 MR. WALLACE: Q: Now, have you reduced it further since
23 the December 22nd update, based on the experience that
24 you have seen since that time?

25 MR. INCE: A: No, we've got no new forecasts relative
26 to the evidentiary update.

1 MR. WALLACE: Q: And do you think that should be done?
2 For example, Catalyst has taken a shutdown for six
3 weeks, maybe longer. Is that sort of change built
4 into your forecasts, or would you revise it further
5 for that at this stage?

6 MR. INCE: A: Well, my staff back at the office do
7 reflect that in the short-term forecast. But until
8 March 31st when Catalyst has announced that that
9 shutdown would be -- the operation would be back up
10 and going. So, yes, it is a curtailment, but it is
11 not designated permanent shutdown. Catalyst has not
12 indicated that this facility will be permanently shut
13 down. It is a major chunk of load, but we have taken
14 it out of the forecast until March 2009.

15 MR. WALLACE: Q: Now, you didn't take it out on October
16 -- or you didn't take it out in your December 22nd
17 update, did you? You didn't know that was done.

18 MR. INCE: A: There was no information. But the
19 shutdowns that we've seen relatively recently have not
20 been -- every shutdown that we've heard of relative to
21 the evidentiary update has been designated a temporary
22 shutdown. And so in a long-term planning context,
23 maybe Mr. Matheson can follow up on this, is that
24 we're looking at a few months here, not a planning
25 horizon.

26

Proceeding Time 8:42 a.m. T05

1 MR. MATHESON: A: Well, and it speaks to one of the
2 trade-offs, I guess, we have to make when we do our
3 forecasts. We don't want to be -- we obviously don't
4 want to ignore important events like the news this
5 week of Catalyst and things of that nature. On the
6 other hand, we don't want to be so caught up in
7 "current-itis" that we're constantly re-doing the
8 forecast, because then we can't pin any of our plans
9 on anything specific. And so we do an annual forecast
10 and we do an update every so often, when some major
11 occurrences happen, but we again don't want to get
12 caught up in having to re-do it and re-do it again,
13 and never being able to pin any of our plans on it.
14 And so we try to find a balance there.

15 MR. WALLACE: Q: Yeah. And I understand why you do
16 that, but I guess in the case of newsprint, you're
17 talking about a significant amount of load.

18 MR. MATHESON: A: Yes. And I think we can adequately
19 capture those sorts of events in the annual forecast
20 cycle that we go through. It's one of the reasons why
21 we feel it's important to do a full forecast once a
22 year.

23 MR. INCE: A: So we hired Temanex Consulting and their
24 report is included in the package, the attachments to
25 IR 238, I believe it is.

26 MR. WALLACE: Q: Yes.

1 MR. INCE: A: And that is a significant report that
2 indicates production forecasts by individual customer,
3 including newsprint, forestry sector products, oil and
4 gas, or, sorry, the Temanex is specific to the
5 forestry sector. And they did provide us with a
6 production forecast for each of the facilities, and
7 that flows into the load forecast. So, changes in the
8 economy -- long-term changes in the economy with
9 respect to what type of products are being bought and
10 sold are definitely included in our forecast.

11 MR. WALLACE: Q: And you suggested at one point that
12 Catalyst was coming back up at the end of March. Is
13 that your understanding, or is it your understanding
14 they're re-looking at it at the end of March?

15 MR. INCE: A: It's my understanding that's the
16 publicly-announced figure as far as when they're
17 coming back.

18 MR. WALLACE: Q: Okay, if you could provide any
19 documentation you have to that effect, with respect to
20 that announcement, I'd appreciate it.

21 MR. INCE: A: Okay.

22 MR. GODSOE: Okay, and if we can find a single press
23 release, would that satisfy that undertaking?

24 MR. WALLACE: Absolutely. Thank you. And -- yeah, we
25 can talk about it.

26 MR. GODSOE: Just to be clear, we will take that

1 know, we think that the planning cycle in our long-
2 term plans is adequate to respond to these ebbs and
3 flows in the economy.

4 MR. WALLACE: Q: Okay, thank you. Mr. O'Riley, I'd
5 like to change subjects now and turn to what I think
6 may be an operational issue, but I think also affects
7 long-term planning, and that is Island Cogen facility.
8 And you're --

9 MR. O'RILEY: A: Yes.

10 MR. WALLACE: Q: -- I think responsible for that. In
11 previous proceedings, there's been some discussion as
12 to whether Island co-gen facility is a dispatchable
13 facility. In the sense that you can turn it on and
14 off. And apparently in the past you haven't been able
15 to, because of the connection with the steam loads.
16 And I was wondering if it is a dispatchable facility
17 at this time.

18 **Proceeding Time 8:47 a.m. T6**

19 MR. O'RILEY: A: Well, a portion of it has always been
20 dispatchable. I understand that the steam load
21 covered -- required a baseload generation I think of
22 140 megawatts, and then the portion above that was
23 dispatchable.

24 We have in the past entered into agreements
25 with the owner, who's entered into follow-on
26 agreements with Catalyst to dispatch even the

1 steamload portion down at certain times of the year,
2 typically during the freshet when there was plentiful
3 hydro energy around.

4 Obviously the situation with Catalyst
5 changes the potential long-term requirement for steam
6 from that facility, and that would increase the -- if
7 there was a change in that respect, that would
8 increase the flexibility. I'm not aware of the
9 current status of the steam contract.

10 MR. WALLACE: Q: Is that facility from B.C. Hydro's
11 point of view a fully dispatchable facility?

12 MR. O'RILEY: A: Well, I think it's what I just
13 described. So portions of it are dispatched. It's
14 not fully dispatchable because of the steam contract.
15 Portions of it are, and with notice and mutual
16 agreement you can make another portion of it
17 dispatchable.

18 MR. WALLACE: Q: Okay. Now, my understanding, and
19 obviously I don't give evidence, but is that
20 Catalyst's kraft mill shut down last fall, which was
21 the facility connected with the steam.

22 MR. O'RILEY: A: Yeah.

23 MR. WALLACE: Q: Is that your understanding?

24 MR. O'RILEY: A: Yeah, I'm not personally aware of the
25 status of the steam contract. If indeed the steam
26 load is not there today, then it would be fully

1 dispatchable. So if that's the case, I'll accept that
2 premise and then it would be dispatchable.

3 MR. WALLACE: Q: Why don't I leave it again as an
4 undertaking that you undertake to find out if that is
5 a fully dispatchable facility, and if it is not, what
6 efforts are being undertaken to make it a fully
7 dispatchable facility.

8 MR. GODSOE: The other suggestion I could make is that we
9 could revisit that question on Panel 4, if that's to
10 my friend's satisfaction.

11 THE CHAIRPERSON: To whom would you say that?

12 MR. GODSOE: I always -- don't like to identify witnesses
13 but I will in this case. You've asked me directly.
14 Mr. Scouras, who is involved in contract and -- I
15 think should be able to address that question.

16 THE CHAIRPERSON: He is the executive charged with
17 administering the ICP contract?

18 MR. GODSOE: He's not -- I would have to check on that,
19 but I'm quite confident he could answer that question.
20 I'm in my friend's hands. Either way.

21 MR. WALLACE: That's satisfactory, and if not we'll take
22 an undertaking from him at that time.

23 THE CHAIRPERSON: Okay, thank you.

24 MR. WALLACE: Q: My next question, and I wasn't quite
25 sure from Mr. Godsoe's references whether they should
26 be dealt with by this panel or Mr. Rich in Panel 4.

1 They're related to Fort Nelson and you can decide
2 whether you want to answer it today or in Panel 4.

3 MR. GODSOE: One qualification that Mr. Rich won't be on
4 Panel 4.

5 MR. WALLACE: Oh, I'm sorry.

6 MR. GODSOE: Let me try to divide the line and then Mr.
7 Rich can follow through.

8 So I think questions relating to the BCTC
9 capital plan that my friend was interested in, and our
10 proposal for the Northeast Transmission Line
11 absolutely are for this panel. I think what's known
12 as the TEP and how that relates to our calls and the
13 communications and that, is Panel 4, Mr. Scouras. So
14 I think that's the division. I'll leave that with my
15 friend.

16 MR. WALLACE: Is TEP the same as generation clusters?

17 MR. GODSOE: Yes, it is.

18 MR. WALLACE: Thank you.

19 MR. WALLACE: Q: Then, Mr. Rich, with respect to the
20 Fort Nelson long-term solution, B.C. Hydro appears to
21 be looking at three alternatives: expanding the
22 existing plant; improving the Alberta connection; or
23 connecting to the B.C. grid. BCTC, the province
24 appeared to be looking at a northeast transmission
25 line as the solution, and I'm wondering if you can
26 elaborate on how communications are working on that,

1 and what is happening.

2 MR. RICH: A: Well, I think we're quite well
3 coordinated. The BCTC transmission study that we're
4 referring to in this application is in fact the study
5 and the option that BCTC is referring to in their
6 capital plan. So I think it's a direct line between
7 our resource planning activities, identifying
8 transmission as a potential solution within BCTC as
9 the entity responsible for developing that further,
10 looking at that option, and coming back to B.C. Hydro.
11 We are in fact the client in the study in terms of
12 what the various transmission options are and the
13 associated costs.

14 MR. WALLACE: Q: Okay now, the sense I get is it's
15 further than that when it pops up in the Throne Speech
16 as a sort of initiative that the government is
17 endorsing. And I'm wondering, can you give any sense
18 at this stage what the -- how the transmission line
19 looks and compares compared to -- of the other two
20 alternatives.

21 **Proceeding Time 8:52 a.m. T07**

22 MR. RICH: A: Well, again, we've been in discussions
23 with government on this file as well, and as this --
24 the portfolio analysis that was done as part of this
25 application suggests that, when you reach a certain
26 load level, in the order of 120 megawatts or so, a

1 transmission option starts to look attractive relative
2 to increased local generation.

3 So, government is aware of that. The
4 customer groups that we've been in dialogue are aware
5 of that. They, in turn, have been in dialogue with
6 government, I'm sure, in terms of the oil and gas
7 development generally, and so I think it's fair to say
8 that we're all sort of converging on if in fact the
9 gas sector develops in the way that they are telling
10 the world it's going to develop, then it really starts
11 pointing to a transmission solution as the long-term
12 -- as a long-term option for serving the sector.

13 MR. MATHESON: A: And it's probably worth pointing out
14 at this point that I think government's intention is
15 to explore transmission as a long-term option to Fort
16 Nelson through the Section 5 inquiry.

17 MR. WALLACE: Q: Okay. But the cut-off on
18 desirability, then, I take it from you, Mr. Rich, is
19 if you think it's likely that the oil and gas -- or
20 the load up there is going to be above 125 megawatts,
21 then transmission looks like the best solution?

22 MR. RICH: A: Right, subject to confirming the results,
23 or the cost results in the study that's currently
24 underway and expected to be completed in the second
25 quarter, I think we've put in the application this
26 year, in about June. The application, the estimated

1 transmission costs were actually proxy costs based on
2 a transmission line that has been proposed in the
3 northwest part of the province, absent any better
4 information. So this study is actually very
5 geographically specific, looking at a transmission
6 solution linking the B.C. Hydro system at GMS to Fort
7 Nelson.

8 MR. WALLACE: Q: Okay.

9 MR. O'RILEY: A: I would just add that the other
10 consideration in addition to the absolute value of the
11 load would be the timing, and the need to meet the
12 load at a particular in-service date. So that's one
13 other criterion that comes into the consideration.

14 MR. WALLACE: Q: Okay, and what timing makes
15 transmission look attractive, and not attractive?

16 MR. O'RILEY: A: Well, the transmission timing is much
17 greater.

18 MR. WALLACE: Q: Yeah.

19 MR. O'RILEY: A: So we can put in the upgrade, for
20 example, by 2011, December, 2011. So that's -- the
21 transmission is not really an alternative for the
22 upgrade.

23 MR. WALLACE: Q: And the upgrade being the small
24 upgrade, or the doubling of the plant?

25 MR. O'RILEY: A: The small upgrade.

26 MR. WALLACE: Q: Okay.

1 MR. RICH: A: Either way we look at it, there's still a
2 short-term versus a long-term issue that we're facing.

3 MR. WALLACE: Q: So the small upgrade is inevitable, I
4 take it from that.

5 MR. RICH: A: Well, it's our recommendation. I
6 wouldn't say it's inevitable.

7 MR. WALLACE: Q: Fair enough. And --

8 THE CHAIRPERSON: You can use the word "slam-dunk", if
9 you like.

10 MR. WALLACE: Q: Whereas the doubling of the plant is
11 basically -- you either connect to the grid or you
12 double the plant. You don't do both.

13 MR. RICH: A: I would say that's a fair statement at
14 this point.

15 MR. WALLACE: Q: Okay. And with respect to improving
16 the Alberta connection, where does it fit in between
17 those two options?

18 MR. RICH: A: We look at the Alberta connection as
19 complementing our local generating capability from a
20 reliability perspective. So, at least in the medium-
21 term, we absolutely need an increase in supply from
22 Alberta to complement any increases in the Fort Nelson
23 generating station to provide that same level of
24 reliability as the load continues to increase.

25 MR. WALLACE: Q: Okay, I think -- so it rates into the
26 slam-dunk category too? With the small upgrade?

1 MR. MATHESON: A: Well, I mean, Mr. Rich is pointing to
2 something that is pretty important here, in the sense
3 that we already have one industrial customer that's
4 essentially on non-firm supply right now, and that's
5 not very adequate for them or us. And so, Alberta
6 plays a very important role in helping us get over
7 that, if you like. And so, as he said, in the medium-
8 term I think we really do require a proper, you know,
9 connection point with Alberta that will help us
10 through that, until we find the long-term solution
11 we're looking for.

12 MR. RICH: A: So, I'll just add to that, in parallel to
13 moving along with the upgrade project, we have an
14 application pursuant to the AESOs, the Alberta System
15 Operator's tariff process, an application for an
16 increase in our existing transmission service
17 agreement with them.

18 **Proceeding Time 8:57 a.m. T8**

19 MR. WALLACE: Q: Thank you.

20 If you double the plant and then decide you
21 need transmission capacity, or you decide to proceed
22 with it for purposes of government policy or whatever,
23 what happens to that facility? Does it just simply
24 become a dispatchable gas plant at the northern end of
25 the system?

26 MR. RICH: A: I think so. At this point I don't -- I

1 mean, this portfolio, or the portfolio analysis that
2 was covered in this application did not contemplate
3 that scenario. I presume as part of what I'll call
4 Resource Plan 2, we would look at the risks, cost
5 benefits associated with that kind of scenario, that
6 if for example the transmission solution was even
7 further delayed but that the load started and
8 materialized, and we really think -- really really
9 thought the only way to serve that load was by
10 expanding the plant, as part of that analysis would be
11 looked at the potential for stranded investment
12 associated with that decision.

13 MR. MATHESON: A: And I want to caution that. I mean
14 it's a hypothetical, you know, example that you're
15 providing to us.

16 MR. WALLACE: Q: Absolutely.

17 MR. MATHESON: A: And so we're not -- we're not really
18 contemplating that right now. So it's hard to
19 imagine, you know, what we'd do, what it would become,
20 and so I just want to caution everybody that we're not
21 -- it's not something we're envisioning at this point.

22 MR. WALLACE: Q: But we're looking at a lot of
23 hypotheticals. We can handle one more, I think. And
24 what I would suggest -- what I'm trying to get the
25 point and I think I have the answer, is that if you go
26 ahead with doubling the plant, and then the

1 transmission line is built, then that plant inevitably
2 is either a dispatchable gas plant at the northern
3 part of the system, or it's a stranded asset. Is that
4 fair?

5 MR. O'RILEY: A: We'd probably go with dispatchable
6 plant at the northern end of the system.

7 MR. WALLACE: Q: Thank you.

8 MR. O'RILEY: A: If there's a choice.

9 THE CHAIRPERSON: The line to Rainbow Lake goes both
10 ways, is I think what you're saying.

11 MR. O'RILEY: A: Yes, it does.

12 THE CHAIRPERSON: Yes.

13 MR. WALLACE: Q: Thank you.

14 I'd like to change subjects once more, and
15 it's a matter I think that was referred to this panel.
16 I understand that the marginal cost of new supply is
17 roughly, and -- or it's a proxy, using the words of
18 one of your previous panelists, 120 to 125 dollars?

19 MR. GODSOE: I think that one is for Panel 3 because that
20 flows out of the portfolio analysis and --

21 MR. WALLACE: Well, the --

22 MR. GODSOE: Sorry, I'll let you --

23 MR. WALLACE: Let me get to the question.

24 MR. GODSOE: Yeah.

25 MR. WALLACE: Q: Can you accept that much so far? And
26 then I'll get to the question.

1 MR. MATHESON: A: Yes, Yes.

2 MR. WALLACE: Q: Thank you.

3 MR. MATHESON: A: It's in the application.

4 MR. WALLACE: Q: And I'm asking if what level of Tier 2
5 price did you use for your load forecast? The update
6 for the December 22nd -- for the December 22nd update.

7 MR. MATHESON: A: Sorry, can you clarify the question?
8 When you say what level of Tier 2 price, what --

9 MR. WALLACE: Q: The top stepped rates for the
10 industrial and the residential. What level of price
11 did you use for the updated forecast?

12 MR. INCE: A: So you're referring to the residential
13 climbing block rates?

14 MR. WALLACE: Q: That's correct, and for the Tier 2
15 industrial rate.

16 MR. INCE: A: It is the rates that are currently in
17 place. But subject to the rate increases that have
18 been indicated in the evidentiary update, and I'm
19 struggling for the IR. I think it's 240. So, of
20 course, you have the rates, and then you have Tier 1,
21 Tier 2. But we've superimposed on top of those
22 expected rate increases that B.C. Hydro has indicated
23 in the evidentiary update. So we're assuming that
24 both Tier 1 and Tier 2 increase over time to match
25 those expected long-term rate forecasts.

26 And to summarize, those rate forecasts are

1 -- I believe they're 86 percent nominal, approximately
2 50 percent real increases over the next ten years.

3 MR. WALLACE: Q: Okay, but you'll agree with me that
4 the industrial rate, Tier 2, has been set on the long-
5 term marginal cost of supply for the last three years.

6 MR. INCE: A: It has been set based on the Call price,
7 the 2006 Call price.

8 MR. WALLACE: Q: And if the 120 to 125 was a proxy for
9 the next Call price, then there is a possibility that
10 the industrial Tier 2 rate might be set in the range
11 of 120 to 125 dollars.

12 MR. INCE: A: I can't speak to rate design issues on
13 this.

14 **Proceeding Time 9:02 a.m. T09**

15 MR. WALLACE: Q: No, but I'm asking, basically have you
16 done any forecasts of what the load would look like if
17 the marginal residential price, that top block, and
18 the top block to the industrials, were set based on a
19 Call price of \$120 to \$125.

20 MR. INCE: A: I'm not aware if industrial calculations
21 were done on that basis. In terms of the residential,
22 the effect of that Tier 2 rate -- so what we do in the
23 load forecast is we assume that it's a fixed rate, a
24 *status quo* rate, so to speak. And we increase the
25 rates to the levels that are indicated in the
26 application. So that -- the 50 percent number that I

1 indicated. And that results in a certain amount of
2 savings. So we have an elasticity of minus .05, and
3 you superimpose that on top of that the long-term rate
4 forecast, and you get a certain amount of rate
5 savings. That goes into my load forecast.

6 But then there's a second element to that,
7 which is the rate design itself. So the fact we have
8 a two-step rate, and you'll get incremental savings
9 resulting from that rate structure that go into the
10 DSM plan. So we've carefully avoided the possibility
11 of undercounting or double-counting by -- in my
12 forecast, I include -- I assume *status quo* rates with
13 the rate increases, and the DSM folks, which Mr.
14 Hobson can speak to, do assume the effects of that
15 long -- the stepped-rate structure.

16 So I think with respect to those scenarios,
17 Mr. Hobson can speak to those as far as what type of
18 DSM savings might be incurred as a result of that Tier
19 2 rate. And those rate scenarios that you indicated.

20 MR. WALLACE: Q: So that's Panel 4?

21 MR. GODSOE: That is Panel 4.

22 MR. WALLACE: Okay, and Mr. Godsoe apparently was correct
23 again. That completes my questions for this panel.

24 THE CHAIRPERSON: Thank you, Mr. Wallace.

25 MR. WEAVER: Good morning, Mr. Chairman and members of
26 the panel.

1 THE CHAIRPERSON: Mr. Weafer.

2 **CROSS-EXAMINATION BY MR. WEAFER:**

3 MR. WEAFER: Q: Good morning, B.C. Hydro panel. My
4 name is Chris Weafer, I'm here for the Commercial
5 Energy Consumers.

6 And I'd like to start off with the
7 discussion around Burrard, and I'd just like to take a
8 quick look at recent usages. And so if you could look
9 at Exhibit B-1, page 5-25, Figure 5-7.

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

11 MR. WEAFER: Q: Burrard actual annual generation. And
12 looking at usage since 1961, am I correct in
13 interpreting this that it's been utilized at over
14 4,000 gigawatt hours twice in that time span?

15 MR. O'RILEY: A: Yes.

16 MR. WEAFER: Q: And --

17 THE CHAIRPERSON: Mr. Weafer, I'm sorry.

18 MR. WEAFER: Oh, I'm sorry.

19 THE CHAIRPERSON: I lost the reference.

20 MR. WEAFER: Sorry, Mr. Chairman. That's Exhibit B-1,
21 page 5-25.

22 THE CHAIRPERSON: Thank you. I have it. I apologize.

23 MR. WEAFER: Q: And we'll have some discussion as we go
24 through the cross on the social licence. If we look
25 at the operation of Burrard thermal since 2001, it
26 would be fair to say that B.C. Hydro has been

1 exceptional in terms of meeting its social licence
2 obligation. Would you agree with that?

3 MR. O'RILEY: A: I'm not sure I understand what you
4 mean.

5 MR. WEAFFER: Q: As I understand the permitting in
6 recent years, you could use up to 6,000 gigawatt hours
7 a year. And if I look at your average usage from 2001
8 to 2007, it looks like it would, on rough of this
9 graph, be around 300 gigawatt hours a year. Is that
10 --

11 MR. O'RILEY: A: So your question is, what is the
12 average generation over the last --

13 MR. WEAFFER: Q: My question is, relative to the amount
14 you're approved to use it for, you're using it to a
15 very small level.

16 MR. O'RILEY: A: The usage has been quite small in the
17 last few years. I mean, you can see that from the
18 charts.

19 MR. WEAFFER: Q: Yes. And --

20 MR. O'RILEY: A: Sorry, did that answer your question?

21 MR. WEAFFER: Q: Not particularly well, no.

22 MR. O'RILEY: A: No.

23 MR. WEAFFER: Q: In terms of the social licence
24 obligation.

25 MR. O'RILEY: A: Well, sure.

26 MR. WEAFFER: Q: That the usage -- there's been some

1 discussion earlier around Burrard thermal around
2 authorized usage.

3 MR. O'RILEY: A: Yeah.

4 MR. WEAVER: Q: We've had some testimony from Dr.
5 Preston about the social licence, and the point I'm
6 going to do here is, in recent years, from 2001 since
7 significant investment, in improvement in the
8 efficiency and nitrous oxide treatment, you've done a
9 very good job of utilizing the plant at a much lower
10 level than you're authorized to use it, correct?

11 **Proceeding Time 9:07 a.m. T10**

12 MR. O'RILEY: A: Well, I would just clarify that the
13 social licence really includes three aspects. It
14 includes the permits, so the permitted levels which
15 we've got documentation on what those are. It
16 includes public perceptions and values, and it
17 includes the perspectives of the varying governments
18 and agencies that have a role in the -- in regulating
19 various aspects of a plant. And as we say in the
20 document, and in numerous IRs, we don't believe we
21 have a social licence for 6,000 gigawatt hours. We
22 believe we have a social licence for the kind of
23 operation we've experienced in the last few years. We
24 may have a social licence at the level of 3,000
25 gigawatt hours, but there's some risk associated with
26 that, and the social licence risk goes up as you move

1 beyond 3,000 gigawatt hours. So, we've been low --
2 the actual generation from 2002 onwards has been low
3 relative -- or in the range of our -- where we're
4 quite confident we have a social licence in the 600
5 gigawatt hour range.

6 MR. WEAVER: Q: Thank you. And just to complete the
7 graph, do you know this -- I take it the last bar is
8 2006. Do you, off the top, know what usage was in --

9 MR. O'RILEY: A: The last bar is 7.

10 MR. WEAVER: Q: That's 7. Okay, thank you.

11 MR. O'RILEY: A: And 2008, it's -- I mean, it's pretty
12 modest. Off the top of my head, I would say it's
13 around 200 gigawatt hours, so it's relatively modest.

14 MR. WEAVER: Q: Thank you. Thanks.

15 MR. O'RILEY: A: We ran it in February of last year
16 because of constraints on the Peace River flows,
17 because of an ice problem at the town of Peace River,
18 and there was a risk of an ice jam, and there was
19 quite a bit of concern about the potential to have to
20 significantly cut back generation on our Peace River
21 projects, and then we ran it again for about a week in
22 December, in response to the peak load we had, and in
23 particular some transmission icing problems, and quite
24 a bit of concern on the part of BCTC in response to
25 that. And you'll all remember the cold period we had
26 before Christmas. So those were the two primary

1 times, and there were a few other periods in the year
2 that we ran it.

3 MR. WEAFFER: Q: And is it fair to say, with operational
4 flexibility, when used, you've generally used it in
5 the winter months, as opposed to summer months?

6 MR. O'RILEY: A: I think there's -- there is an IR that
7 lists by month the volumes, and let me just find that.
8 Historical monthly -- that would be IPPBC 3.18.9,
9 which is quite a useful IR, and it shows the results
10 back to 2000, and from there you can see that the --
11 well, it varies. So in the fall of '06 we ran it for
12 energy, based on the value of energy from the plant.
13 So that wasn't a winter peak, and we ran -- we have
14 run it over the peaks in the last three years. We
15 didn't in 2004/5 -- 2004/2005. And then we ran it
16 quite a bit in 2004 in the summer and early fall. So
17 I think it varies.

18 MR. WEAFFER: Q: But there, when you say "running quite
19 a bit", it's still running at a relatively low level
20 relative to what you're authorized to run it at.

21 MR. O'RILEY: A: Yes. Yes.

22 MR. WEAFFER: Q: So, thank you. And that's where I'm
23 just trying to be clear, in terms of -- in reviewing
24 the evidence, the comments about running at 4,000
25 versus 3,000 versus 6,000, the authority to run versus
26 the actual usage of the plant could vary significantly

1 over time. Is that fair to say?

2 MR. O'RILEY: A: I'm sorry, could you say that again?

3 MR. WEAFFER: Q: You're not always running to -- you're
4 not targeting to run to your maximum authorized
5 levels. You haven't in the past, and I would expect
6 you wouldn't in the future. Is that fair to say?

7 MR. O'RILEY: A: Well, we -- I think, as Mr. Elton
8 introduced the topic on Panel 1, in the operational
9 window, which is the window that I'm responsible for,
10 the three-year window, we dispatch the plant subject
11 to our permits, and then based on the economics of
12 operation. So, including the cost of alternate power,
13 the cost of the carbon tax, the variable costs of the
14 plant. So it's done strictly on economics, subject to
15 meeting the permits.

16 MR. WEAFFER: Q: And again, in the recent past, from
17 2001, that's been a fairly -- a relatively low level
18 relative to your authorization, your permits.

19 MR. O'RILEY: A: Yes.

20 **Proceeding Time 9:12 a.m. T11**

21 MR. WEAFFER: Q: Thank you. Moving on, but still on
22 Burrard, we've had reference to the B.C. Court of
23 Appeal's decision this week impacting the 5L83
24 transmission line. And can you tell me, has B.C.
25 Hydro reached any conclusion with respect to how that
26 decision may impact the timing of the project?

1 MR. O'RILEY: A: We've not -- with respect to that
2 decision, we're still evaluating the decision. We
3 have been concerned all along about the risks with the
4 construction of that transmission line and the timing,
5 and that's the reason we've included as part of our
6 contingency planning a five-year delay in the in-
7 service for the transmission. So we're assuming it
8 will be there in 2019. If it comes in earlier, that's
9 great.

10 MR. MATHESON: A: It does speak to the importance of
11 what we're doing with Burrard, and why we've felt all
12 along that Burrard had a very important role to play
13 related to ILM in-service.

14 MR. WEAFFER: Q: Thank you, and I did want to turn you
15 to an IR on that point, and this is in Exhibit B-3,
16 BCUC 1.28.1.

17 MR. MATHESON: A: I have that, yes.

18 MR. WEAFFER: Q: If I could take you to --

19 MR. MATHESON: A: Actually, well, let's get a couple of
20 other copies, get another copy.

21 MR. WEAFFER: Q: Certainly, and I'm going to go to page
22 3 of 4 of that IR, just --

23 MR. MATHESON: A: Okay, we have that.

24 MR. WEAFFER: Q: Now, if I look at the last paragraph of
25 page 3 of 4 and the last sentence:
26 "It should be noted that 5L83 cannot be

1 deferred for any of the cases shown below
2 without committing Burrard capacity as RMR
3 and incurring the associated incremental
4 operating costs."

5 Just to understand that, in light of the decision, do
6 you think there's a higher probability that you will
7 be running Burrard as RMR?

8 MR. MATHESON: A: Sorry, in light of the court --

9 MR. WEAVER: Q: The court decision and the potential --

10 MR. MATHESON: A: Yeah.

11 MR. WEAVER: Q: The potential uncertainty around this
12 material project. In your view does it raise the
13 probability of having to run B.C. Hydro's RMR?

14 MR. O'RILEY: A: Well, we haven't been -- how can I
15 answer that?

16 THE CHAIRPERSON: Reliability must --

17 MR. O'RILEY: A: Yeah, I think there's a bit of
18 semantics here in terms of the RMR. So we will be --
19 given the risk with the project, and as I said, we're
20 not sure, we haven't fully digested this decision but
21 we still consider this to be a high-risk project, the
22 ILM project, we expect to require Burrard capacity for
23 the timeframe through 2019. And it's important for
24 meeting our supply obligations in the Lower Mainland
25 and Vancouver Island.

26 Strictly speaking, I don't think we're

1 going to hand the plant over to BCTC to run as an RMR
2 plant, which means that they would control the
3 dispatch and they could use that to support other
4 transmission users on the system and sell transmission
5 against that. We will be using it to support our
6 load, and in the circumstance that I described to you
7 before Christmas, we had 500 kV lines that were icing
8 up and switching out of service, coming in and out of
9 service in numerous times over the day, and we were
10 running Burrard to support transmissions in that
11 context.

12 So we anticipate a continuing need to run
13 Burrard for capacity through 2019, through the
14 completion of the projects. I don't think, strictly
15 speaking, we're going to define it as an RMR plant as
16 we have with the other coastal hydro plants.

17 MR. WEAVER: Q: Could the deferral result in a
18 temporary higher requirement for Burrard than the 3000
19 gigawatt a year set out in your application?

20 MR. O'RILEY: A: So everything we're talking about with
21 transmission in Burrard is all about capacity. It's
22 got nothing to do with the energy. And I should also
23 -- I just want to clarify. I wouldn't call risk to
24 the in-service date of the project a deferral. Like,
25 a deferral is typically a decision, let's stop working
26 on something, let's say tools down and we'll defer the

1 in-service date of that project.

2 What we're talking about here is a risk of
3 delay to the project. We are proceeding, and BCTC is
4 proceeding, as fast as we can to complete that
5 project. Obviously, there are risks to the project.
6 But again, it's a capacity issue with respect to
7 Burrard. It's got nothing to do with the energy.

8 **Proceeding Time 9:17 a.m. T12**

9 MR. WEAVER: Q: If -- well, just to make sure I
10 understand it, if you don't have the 5L83 transmission
11 line in place and you can't get -- you can't move as
12 much load, is there not a higher need for utilization
13 of Burrard for energy? Potentially?

14 MR. O'RILEY: A: They're -- well, there will be a
15 higher need for utilization of -- for Burrard for
16 capacity, which as you saw from the chart we just
17 looked at, doesn't translate into a lot of energy. So
18 that would be in the range of the 600 gigawatt hours
19 per year.

20 MR. MATHESON: A: Yeah, so it's for peaking purposes,
21 essentially.

22 MR. O'RILEY: A: Yeah.

23 MR. WEAVER: Q: But there's no corresponding need to
24 utilize Burrard at a higher level, because ILM --
25 sorry, 5L83 is not built in a timely basis. Is
26 delayed out beyond your plans.

1 MR. O'RILEY: A: Yeah. We will use it more -- all
2 other things equal, we would tend to use it more with
3 ILM being delayed, but the sum effect of all of that
4 use will be relatively small in terms of energy.

5 MR. WEAFFER: Q: Yes, but you would -- if you were going
6 to use it more, you would have to ensure that it was
7 capable of being used at a potentially higher level,
8 correct? You have to make the investments to match
9 that, if in the event this project is delayed.

10 MR. O'RILEY: A: Yeah, exactly. So the base case for
11 Burrard through 2019 is really Scenario 1, and there's
12 certain investments that are described in chapter --
13 listed in Chapter 5, that go along with keeping it
14 available for capacity. There's another incremental
15 investment required based on the recommendation from
16 AMEC, to keep it available for the 3,000 gigawatt hour
17 per year threshold. And then again for 6,000 there's
18 another -- there's a higher investment required. So,
19 the capacity and energy they've -- they're related but
20 distinct issues.

21 MR. WEAFFER: Q: Yes, but -- they're distinct, but they
22 both -- the need could occur in both areas as a result
23 of this project, not --

24 MR. O'RILEY: A: I would say that the energy issue is
25 disconnected from the 5L83 issue. I wouldn't -- I
26 don't see any -- I don't see the connection there that

1 you're proposing.

2 MR. WEAFFER: Q: Fair enough. The investment, just to
3 deal with the investment in terms of energy at 3,000,
4 the incremental cost to move that to 4,000 gigawatt
5 hours a year, have you done an assessment of what that
6 cost would be?

7 MR. O'RILEY: A: In terms of the capital investment? I
8 don't -- no, we've not done that. We've not done
9 every increment of -- on the technical side. I don't
10 think there's a material difference there. If we look
11 at the --

12 MR. WEAFFER: Q: I'm sorry, Mr. O'Riley, I'd just like
13 to understand. The difference between 3,000 and
14 4,000?

15 MR. O'RILEY: A: Just one -- just give me a second,
16 please.

17 So, if I point you to the Chapter 5 of the
18 application, and I guess this is B-1, and we look at
19 page 30, so 5-30, and you see for Scenario 2 there's a
20 -- and if we look at the first row, which is the
21 average 2009 to 2015 expenditure, the capital proposed
22 by AMEC is \$31 million. The operating is \$18 million.
23 If you go to Scenario 3, the capital is \$35 million
24 and the OMA is \$20 million. So, Scenario 4 would be
25 somewhere in the middle there. We've not detailed
26 every increment between 3 and 6. But it would be in

1 the ballpark of between 31 and 35.

2 MR. WEAVER: Q: So not material.

3 MR. O'RILEY: A: Not material.

4 MR. WEAVER: Q: Thank you. Moving along on the topic
5 -- thank you, that's helpful. And in terms of the
6 operation of Burrard, and I think -- have you still
7 got Exhibit B-1 in front of you? And looking at page
8 5-88.

9 MR. O'RILEY: A: Eighty-eight?

10 MR. WEAVER: Q: Yes. Page 5-88.

11 MR. O'RILEY: A: Okay. I don't have that.

12 MR. WEAVER: Q: Oh, sorry. And here I just want to --
13 and looking at Figure 5-17, the profile of non-firm
14 heritage hydro energy and non-firm IPP energy, just to
15 go to the graphical illustration of the operation of
16 Burrard, in relation to the availability of non-firm
17 energy. This has been discussed through the hearing,
18 but just to have this graphical illustration in front
19 of us.

20 B.C. Hydro receives approximately 4,000
21 gigawatt hours of non-firm energy from the Heritage
22 Hydro system, correct?

23 **Proceeding Time 9:22 a.m. T13**

24 MR. O'RILEY: A: On average, yes.

25 MR. WEAVER: Q: And that's why essentially Burrard is
26 displaced most of the time, is that correct? As we

1 discussed earlier.

2 MR. O'RILEY: A: In an average water year, the first
3 thing you would do before relying on Burrard would be
4 to rely on a non-firm Heritage Hydro, yes.

5 MR. WEAVER: Q: Okay. And again focusing on --

6 MR. O'RILEY: A: Actually, I shouldn't misspeak there.
7 Careful about the use of the term "reliance", because
8 under the Special Direction we're not allowed to rely
9 on the non-firm Heritage Hydro.

10 So if I correct what I said, in the
11 operational timeframe, the first resource you would
12 use rather than Burrard would be non-firm Heritage
13 Hydro.

14 MR. WEAVER: Q: And that's up to 2015 under the
15 direction, as I understand it.

16 MR. O'RILEY: A: The self-sufficiency definition kicks
17 in in 2016.

18 MR. WEAVER: Q: So to 2016, what I'm discussing here is
19 still accurate.

20 MR. O'RILEY: A: Up till 2016, then when we talk about
21 our reliance on Burrard, that is really an issue of
22 risk. And if we rely, if we try and move the reliance
23 from 3,000-4,000, we think we're incurring a higher
24 risk to our social licence. And if you look at the
25 consequences of that risk if we're not able to -- if
26 we try to go from 3,000 to 4,000 and in the course of

1 doing so we lose the 3,000 and we're pushed down to
2 say 600, the costs of that are quite significant. And
3 there's an IR which I can point you to.

4 So prior to 2016, there's a social licence
5 issue in terms of -- there's an issue of risk to our
6 social licence in terms of excessive reliance on
7 Burrard. Beyond 2016, then you're getting into this
8 question of adherence to Special Direction 10.

9 MR. WEAVER: Q: I understand, I understand. So let's
10 just focus on up to 2016 for now and the social
11 licence question will be related, but let's just focus
12 on operations first in terms of what -- how Burrard
13 would operate. And if I understood --

14 MR. O'RILEY: A: Well, I don't think we'll actually
15 change. The operations I don't think will change
16 before or after 2016. The operations will operate as
17 it operates, based on economic dispatch.

18 MR. WEAVER: Q: Okay. Then we'll come back to that.

19 With respect to what is available to 2016,
20 and if I understand the graph correctly, 1,000
21 gigawatts a year would be available 90 percent of time
22 from Heritage Assets. Correct?

23 MR. O'RILEY: A: Yeah, I think it's actually 1500, but.

24 MR. WEAVER: Q: And --

25 MR. O'RILEY: A: From Heritage, yeah.

26 MR. WEAVER: Q: Okay. You would also have non-firm

1 power available from non-Heritage resources to fill
2 this in, and displace use of Burrard. Is that
3 correct?

4 MR. O'RILEY: A: There is non-firm Heritage -- there's
5 non-firm power from IPPs as well, yes.

6 MR. WEAFFER: Q: And that averages about 2,000 gigawatt
7 hours a year, is that --

8 MR. O'RILEY: A: Well, I think the sum of the two, I
9 think the -- on this chart, the bottom line is the
10 Heritage, and then the top line is the total, and the
11 difference between the two would be the IPP non-firm.
12 That's how I read that chart.

13 MR. WEAFFER: Q: Okay.

14 MR. O'RILEY: A: It's a little hard to read.

15 MR. WEAFFER: Q: Would you agree with me that the likely
16 result of utilization of this power up to 2016, before
17 the self-sufficiency requirement kicks in, will be
18 that Hydro would continue to run at most a couple of
19 months a year?

20 MR. O'RILEY: A: In an average water year, we would
21 tend to have non-firm Hydro, Heritage Hydro or IPP
22 Hydro. In a critical water sequence we wouldn't have
23 that. And then we'd be looking to the market, and if
24 the market prices were adverse then we'd be running
25 Burrard.

26 **Proceeding Time 9:27 a.m. T14**

1 MR. WEAVER: Q: And that critical water sequence would
2 occur how often?

3 MR. O'RILEY: A: Well, we've -- the critical water
4 sequence occurred three -- four years out of -- three
5 years, I guess -- for four years out of 60.

6 MR. WEAVER: Q: Thank you, that's helpful. I can move
7 on. Still on Burrard. Would you agree with me that
8 the -- in light of the uses of Burrard to date, and
9 the potential usage to 2016, that the impact of -- on
10 the social licence of moving to 3,000 gigawatt hours a
11 year, to 4,000 gigawatt hours a year, recognizing what
12 the actual usage is likely to be in that period of
13 time, is small. That that increment is not a material
14 increment.

15 MR. O'RILEY: A: No, I would not. And perhaps Dr.
16 Preston might want to speak to that.

17 MS. PRESTON: A: Part of the reason for that is that if
18 Burrard ran at 4,000 gigawatt hours per year, it would
19 be the largest point-source of greenhouse gas
20 emissions in the entire province. At 3,000, it's the
21 second-largest. But given the government's goal of
22 reducing greenhouse gas emissions by 33 percent by
23 2020 from 2006 levels, we do feel that it is certainly
24 a higher risk scenario than running at 3,000 gigawatt
25 hours per year, and also just the fact that it will be
26 operating considerably more, another 1,000 gigawatt

1 hours per year, and therefore there would be that much
2 more by way of emissions of nitrogen oxides, which
3 again are involved in the secondary formation of
4 particulate matter and ozone. So we do think that
5 there is certainly more risk for running at 4,000 than
6 running at 3,000.

7 MR. O'RILEY: A: And the parts -- I would just add that
8 there's tremendous value, economic value, in the
9 reliance on 3,000. And I think if you want to go to
10 4,000 and take that risk you need to think about that
11 in light of the money at stake at 3,000. And if you
12 look at -- if you want to look at that at BCUC IR
13 1.102.1, it might be helpful.

14 MR. WEAVER: Q: We will get there in a moment.

15 MR. O'RILEY: A: Okay.

16 MR. WEAVER: Q: I just want to deal with Dr. Preston's
17 response. Dr. Preston, you've made this comment in
18 terms of the impact of running at 4,000. But did you
19 follow the discussion we just had about what the
20 historic usage of Burrard is over the last six years,
21 where it was authorized to be run at 6,000? And it
22 ran at approximately 400 a year? Do you factor that
23 into your analysis in terms of what the authority is
24 to run at, versus what the probability of running it
25 at that level would be?

26 MS. PRESTON: A: I am aware of that, and certainly we

1 have said that there is a social licence currently for
2 operating in its current peaking function. But for
3 example, when -- there was an article in the *Globe and*
4 *Mail* when the District Director of Metro Vancouver was
5 made aware of the 2008 LTAP filing, and the --
6 essentially the desire to run Burrard at 3,000, he was
7 alarmed, and suggested that they may have to look at
8 -- that there was nothing currently in the permit
9 stopping Burrard from doing that, but they may have to
10 take a look at that and consider re-opening it. And
11 certainly that is within their right. It's set out in
12 the *Air Quality Management By-law* for Metro Vancouver
13 that the District Director can amend a permit if they
14 believe it's for the protection of the environment.

15 MR. O'RILEY: A: And I think the point I would make is
16 that this social licence is tied not just to the
17 actual operation of Burrard but to the planned
18 reliance on Burrard. And we saw that in -- the
19 article in the *Globe* talked about the planned
20 reliance, and that alarmed people.

21 MR. GODSOE: Just for everybody's benefit, that media
22 article is attached to the response to -- it's Exhibit
23 B-3, attached to the response to BCUC IR 1.99.1.

24 MR. WEAFFER: Q: And I appreciate media coverage, but
25 we're dealing with reality in terms of the operational
26 history here, and this is what I'm focusing on, Dr.

1 that's the more binding -- it's more binding than the
2 strict permit requirements. So we, like I said -- as
3 Dr. Preston said, we believe strongly we have a social
4 licence at a 600 gigawatt hour range. We believe we
5 could achieve a social licence at 3,000 gigawatt
6 hours. We believe it goes up at 4. We do not believe
7 we have one at 6,000 gigawatt hours.

8 MS. PRESTON: A: Or that it would be possible to
9 achieve on at 6,000.

10 MR. WEAVER: Q: But it would be at 4.

11 MR. O'RILEY: A: It would be at 4 with higher risk,
12 and the risk is to 3.

13 MR. WEAVER: Q: Thank you. And moving to the IR, maybe
14 there is a misunderstanding in the interpretation of
15 this IR you referenced, BCUC 1.102.1, which you were
16 going to refer to Mr. O'Riley. So I take it you -- do
17 you have that in front of you?

18 MS. PRESTON: A: I do.

19 THE CHAIRPERSON: Mr. Weaver, could you just let us get
20 to it as well?

21 MR. WEAVER: Certainly, Mr. Chairman.

22 THE CHAIRPERSON: 102.1, was it?

23 MR. WEAVER: Q: Yes, Mr. Chairman.

24 THE CHAIRPERSON: Thank you.

25 MR. WEAVER: Q: Do you have that, Mr. O'Riley?

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

1 MR. WEAFFER: Q: Oh, sorry. At page 204 and with
2 respect to the weighted present values of the
3 scenarios of 4,000 to 3,000 -- and perhaps we've
4 misunderstood the response, but we interpreted the
5 weighted present value of the 4,000 scenario to have a
6 value to ratepayers of \$250 million. And maybe you
7 can explain that. Is that correct?

8 MR. O'RILEY: A: I will do that. Yeah, I calculated
9 the difference as 232 million between --

10 MR. WEAFFER: Q: Sorry, roughly speaking --

11 MR. O'RILEY: A: -- 3,000 and 4,000. And the point I
12 would make is 3,000 also has a value relative for
13 ratepayers, relative to 2,000 of \$376 million. So
14 there's value in the 3,000. And unfortunately we're
15 not calculating on here the 600 gigawatt figure, but
16 we can make sort of a rough extrapolation of the
17 increased cost of 600 gigawatt hours, just based on
18 the difference between 2 and 3. And the way I would
19 do that roughly is if I go from 3,000 to 600, I'd be
20 losing 2400 gigawatt hours from the portfolio, which
21 has to be replaced, and I would multiply the \$376
22 million difference between 2 and 3 by 2.4. And that
23 means if you drop down to 600 gigawatt hours relative
24 to the 3,000 gigawatt hours, you're potentially
25 increasing costs by \$900 million in this portfolio.

26 The point being if we try to go from 3 to 4

1 and incur greater risks to our social licence, and in
2 the course of doing so we lose the flexibility to plan
3 for 3,000 gigawatt hours, we could end down at 600
4 gigawatt hours and incur significantly greater costs
5 for ratepayers.

6 **Proceeding Time 9:37 a.m. T16**

7 MR. WEAVER: Q: Mr. O'Riley, if we look at the actual
8 usage -- sorry, let me re-phrase that. I'm focusing
9 on 3,000 to 4,000 here, and I take it -- you've
10 confirmed that there's a \$250 million weighted present
11 value benefit to customers moving from 3,000 to 4,000.
12 That's what this evidence demonstrates.

13 MR. O'RILEY: A: Yeah, and the point I'm trying to make
14 is, that's not a risk-adjusted benefit. The risk-
15 adjusted benefit might be low or negative, when you
16 factor in the risk to your -- the risk to our ability
17 to rely on 3,000 gigawatt hours.

18 MR. WEAVER: Q: Yes.

19 MR. O'RILEY: A: Which is a significant benefit to
20 ratepayers that we don't -- that our recommendation is
21 we don't put at risk.

22 MR. WEAVER: Q: And that risk arises if we have a
23 number of critical water years in a row.

24 MR. O'RILEY: A: No, the risk arises if, in the course
25 of trying to go to 4,000 we trigger what Mr. Elton
26 referred to as the "vigorous debate" about the

1 appropriate reliance on Burrard, and then you start to
2 think about where the various regulators and governing
3 bodies are with respect to support for Burrard for
4 energy. And I think we confirmed that the only
5 jurisdiction that was supportive of -- supportive of
6 Burrard was really the Port Moody City Council, and
7 even then it's mostly for capacity. It's mostly for
8 peaking.

9 So the risk is we trigger the debate and we
10 end up with a reaction from all those various
11 governing bodies, whether it's Metro Vancouver or
12 Fraser Valley Regional District or the province or
13 Ministry of Environment or potentially the -- I'll
14 just stop there. And you end up -- we end up losing
15 the social licence for 3,000, and we end up down at
16 600. That is the risk that we're faced with here.
17 So, in reaching for the four, there's a risk to the
18 three, and that is a lot of money for ratepayers. A
19 lot of value for ratepayers.

20 MR. WEAVER: Q: Thank you. That's helpful, Mr.
21 O'Riley. If we could just move to the Port Moody
22 discussion, and this was in Exhibit B-4, BCUC IR
23 2.214.1.

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

25 MR. WEAVER: Q: Now, I take it that B.C. Hydro worked
26 with Port Moody in helping them get the information

1 together to prepare this resolution, which is attached
2 to the IR response. Is that fair? The resolution is
3 fairly sophisticated in its descriptions of the
4 operation of Burrard, and I'm assuming that B.C. Hydro
5 would have provided them with some information to
6 assist them with this resolution. Is that a fair
7 assumption?

8 MR. O'RILEY: A: We -- this resolution came out of this
9 Burrard thermal liaison committee, which is really a
10 sub-committee of the Council of Port Moody, and
11 includes some Councillors, some city managers, some
12 independent citizens appointed by the city to the
13 Council, and it includes some representatives of our
14 -- of B.C. Hydro. So, I would say that this
15 predominantly came out -- arose from that committee.
16 I don't think we -- I wouldn't say that B.C. Hydro
17 crafted this resolution.

18 MR. WEAVER: Q: No, that wasn't what I said. I said
19 that B.C. Hydro would have provided them with
20 information to assist in the preparation of -- I mean,
21 this is not something the layperson might know off the
22 top of their heads, the information set out --

23 MR. O'RILEY: A: Well, this committee -- I mean,
24 they've been working -- they're pretty sophisticated
25 around this stuff, right?

26 MR. MATHESON: A: They meet regularly, this committee,

1 on Burrard and how it operates and what its role is,
2 so --

3 MR. WEAFFER: Q: And I absolutely -- it's not intended
4 to be a criticism of the committee. My point is
5 simply, the IR asked for documentation on the opinions
6 on Burrard by the city of Port Moody, and what was
7 provided was one resolution. I'm assuming there's
8 other information that may have been provided by B.C.
9 Hydro to Port Moody to assist them in coming up with
10 this resolution. Is that --

11 MR. O'RILEY: A: Sorry, I don't understand what you're
12 saying.

13 MR. WEAFFER: Q: Okay.

14 MR. O'RILEY: A: I don't understand the question.

15 MR. WEAFFER: Q: The IR asks for documentation of the
16 opinions on Burrard by the city of Port Moody
17 officials, and include the documentations of this June
18 24th consideration of the Burrard Thermal Liaison
19 Committee's recommendation. And what we have is --
20 attached is a resolution. And the resolution contains
21 -- we're on the same IR here, actually.

22 MR. O'RILEY: A: No, we totally are on the same IR.

23 MR. WEAFFER: Q: Okay. Okay, great. And what I'm
24 saying is, the resolution has some good description of
25 the operation of Burrard. Would you agree with that?

26 MR. O'RILEY: A: Well, it --

1 MR. WEAVER: Q: Let's focus on the --
2 MR. O'RILEY: A: On the resolution.
3 MR. WEAVER: Q: On the fourth paragraph.
4 MR. O'RILEY: A: Sorry, and that starts --
5 MR. WEAVER: Q: "And whereas pollution for the plant is
6 not a reason to close the plant, given the
7 number of improvements in recent years have
8 significantly reduced emissions of smog-
9 producing pollutants..."
10 And carries on from there. Have you had a chance to
11 read that?
12 **Proceeding Time 9:03 a.m. T2**
13 MR. O'RILEY: A: Yeah. I mean, yeah, I can -- I guess,
14 so what is your question with respect to that
15 paragraph?
16 MR. WEAVER: Q: Well, firstly, would you agree with
17 what's in the resolution?
18 MR. O'RILEY: A: Yes, I would agree.
19 MR. WEAVER: Q: And would you agree with the next
20 paragraph of the resolution?
21 MR. O'RILEY: A: Well -- yeah, I mean, this is probably
22 not how B.C. Hydro would put this, which I think is
23 evidence that this resolution actually arose from the
24 committee and the City of Port Moody. Like, I think
25 the resolution reflects their perspective on the
26 issue.

1 MR. WEAVER: Q: Okay, let's --

2 MR. O'RILEY: A: Not necessarily our perspective on the
3 issue.

4 MR. WEAVER: Q: Perhaps if we could get an undertaking,
5 Mr. O'Riley, of any and all information and reports
6 provided to this committee by B.C. Hydro.

7 MR. GODSOE: Well, that's unmanageable, so I think we
8 need better confinement of that and an explanation as
9 to how that's relevant.

10 THE CHAIRPERSON: You may, Mr. Weaver, do what I did,
11 which was to inform myself by getting on either B.C.
12 Hydro or the City of Port Moody's website, because the
13 minutes of the meetings are on there.

14 MR. WEAVER: They not in the record here though, Mr.
15 Chairman, and that, so --

16 THE CHAIRPERSON: Well, I think what you've asked B.C.
17 Hydro to give you is a fairly wide-ranging request. I
18 mean, if you want to zero in and say, "I want to know
19 what you gave them for this particular meeting or in
20 this particular regard," I think that might be
21 reasonable. But that's a pretty all-embracing
22 undertaking you just sought.

23 MR. WEAVER: And thank you, Mr. Chairman, and that's not
24 my intention. I would like to focus down on what
25 specifically the guidance was given by B.C. Hydro to
26 the committee in terms of specific reports or letters

1 that -- information that assisted the committee in
2 coming up with the facts and assertions it set out in
3 the resolution.

4 So perhaps Mr. Godsoe and I can chat about
5 this off the record and get to the nub of it.

6 THE CHAIRPERSON: I think that would be an excellent
7 idea.

8 MR. WEAVER: It's not my intention to get minutes of
9 meetings, et cetera. B.C. Hydro -- so is that a fair
10 way to go forward, Mr. Chairman?

11 THE CHAIRPERSON: Yes, please do.

12 MR. WEAVER: Okay, is that fair, Mr. Godsoe?

13 MR. GODSOE: So I think that is fair. Just with this
14 proviso. I wouldn't want to be locked in this
15 understanding as Mr. Weaver hadn't explored this
16 further with the panel. I think we've heard Mr.
17 O'Riley's take that this arose -- he's under oath, and
18 that this arose from the committee itself. So my
19 friend is welcome to explore that further, but I don't
20 want to be trapped in the undertaking because my
21 friend hasn't thoroughly vetted that with this panel.

22 THE CHAIRPERSON: Well, my understanding was that you and
23 Mr. Weaver would get together offline and discuss this
24 further and maybe come back up to the break. But I
25 suggest if you want to continue to examine Mr. O'Riley
26 on this between now and the break, that would --

1 MR. WEAVER: I have a follow-up question but I think the
2 discussion needs to occur with Mr. Godsoe and I about
3 what I'd like to see in terms of what Hydro, B.C.
4 Hydro provided, so I --

5 THE CHAIRPERSON: You have more meeting with Mr. Godsoe
6 and then come back and tell us what you agreed or
7 didn't agree.

8 MR. WEAVER: Fair enough, fair enough.

9 MR. WEAVER: Q: Mr. O'Riley, is it fair to say in terms
10 of the Port Moody resolution that this was a
11 resolution that B.C. Hydro supported?

12 MR. O'RILEY: A: Well, we didn't vote on it. I mean,
13 the committee -- my understanding is this came out of
14 the committee. I actually saw the minutes as well. I
15 looked at the minutes of the meetings and it recorded
16 the fact that the B.C. Hydro manager, the plant
17 manager goes to the -- and one of our communal
18 relations persons go to these meetings and they did
19 not vote on the resolution. So the resolution passed
20 without our -- you know, without that. I presume it
21 passed, it sounded like it passed unanimously.

22 MR. WEAVER: Q: So B.C. Hydro is not a member of the
23 committee, so what was its role?

24 MR. O'RILEY: A: Well, we attend the committees but we
25 don't vote. We didn't vote on this resolution. This
26 was voted on at the committee and --

1 MR. WEAVER: Q: And did the person attending on behalf
2 of B.C. Hydro have a role other than to provide
3 information to the group?

4 MR. O'RILEY: A: Yeah, but that would be their -- that
5 would be -- we try and answer their questions. I
6 mean, this is about outreach to the community.

7 **Proceeding Time 9:47 a.m. T18**

8 MR. MATHESON: A: I might be able to help here. When
9 we originally filed the LTAP on June the 12th and this,
10 I think, small firestorm sort of erupted in the Tri-
11 Cities area relative to what we had said in the LTAP
12 versus what had been reported in the media, this
13 committee asked me to attend, to explain what in fact
14 our intentions were in our long-term plan. And I did
15 that. And it was -- you know, I attended so that I
16 could answer their questions about what the role of
17 the plant was, what we intended it to be in the future
18 relative to the long-term plan.

19 We weren't asked during that meeting to
20 endorse this resolution, which was drafted after the
21 meeting and, to my knowledge we had no say in what
22 went into this resolution or were asked to comment on
23 it once it had been drafted, to my knowledge, and so
24 that's the role. The role is one of providing
25 information that they ask us to provide, and try to
26 find some -- try to give them some clarity as to what

1 we intend to do with this plan.

2 MR. WEAVER: Q: Thank you, but I -- just to step back,
3 I take it B.C. Hydro is pleased with the result.

4 MR. O'RILEY: A: Well, the way I look at this
5 resolution is, they're our neighbours. And it's
6 important that they -- it's important that we have a
7 good relationship with our neighbours. I -- what I
8 see this resolution saying is that they like the plant
9 there, they like the jobs, they like the taxes.
10 They'd rather it didn't run all the time. They like
11 the fact that it runs in what we call here emergency
12 conditions, and such.

13 So, I think it -- I see it as kind of a
14 bookend in terms of our support in the community, in
15 the broader community, for the plant, and it's
16 indicative of the fact that even with our -- even with
17 the -- our neighbours who benefit from the jobs and
18 the taxes, they still would rather see the plant not
19 run. Okay? I don't think we would have been as
20 successful -- or that they would have ever come up
21 with a resolution that said, "Let's have the plant,
22 you know, operate at higher utilization rates, at
23 3,000 gigawatt hours." I don't know that that
24 resolution would have passed, in the same way this
25 resolution passed.

26 So this -- to me, it indicates that we've

1 got support there, but it's limited. And when I look
2 out at the rest of the cities and various governing
3 bodies in the Lower Mainland, I don't even see this
4 level of support.

5 So that's all I take from this resolution.

6 MR. WEAVER: Q: So would you agree that where B.C.
7 Hydro provided information to this community on the
8 operation of Burrard, they supported the continued
9 operation of Burrard?

10 MR. O'RILEY: A: Yeah, and they prefer that it doesn't
11 run. They like the fact, when Mr. Matheson went out
12 there, they liked to hear that we don't expect the
13 plant to run very often.

14 MR. MATHESON: A: The plant essentially plays a back-up
15 role in our system.

16 MR. O'RILEY: A: Which I think is reflected in the
17 resolution.

18 MR. MATHESON: A: Can you show me where you'd take that
19 as being reflected in the resolution?

20 MR. O'RILEY: A: Yes. I read that -- I read "high-
21 demand periods" -- well, if -- yeah, I would -- in the
22 last paragraph, the "therefore", which is the binding
23 part of this, right? I hear it's a source to meet
24 B.C. Hydro's electricity needs during high-demand
25 periods, such as winter months, so I -- emergency
26 conditions as well as ongoing voltage regulation. And

1 the voltage regulation, there's no generation there.
2 That's just synchronous condensers. So, high-demand
3 periods such as winter, and emergency conditions, I
4 read that to mean infrequent operation.

5 MR. WEAVER: Q: Thank you, Mr. O'Riley.

6 Mr. Chairman, I'm going to move on to
7 another topic that will take some time. I'm happy to
8 start.

9 THE CHAIRPERSON: Why don't you start, and let me know
10 when a convenient moment comes, round about 10:00.

11 MR. WEAVER: Q: Mr. Ince, moving on to the load
12 forecast, and I appreciated the update provided by
13 your counsel this morning, and the time spent by Mr.
14 Wallace on the topic. Mr. Ince, I just -- I wanted to
15 get a better understanding of your role in terms of
16 low -- creating a load forecast, and you're -- from
17 Exhibit B-13, which you don't need to turn to, it's
18 essentially your CV. You're the manager, market and
19 load forecasting, and you've been with B.C. Hydro
20 since 1999.

21 MR. INCE: A: That's correct.

22 MR. WEAVER: Q: And you also -- do you continue to
23 perform the role of manager, commodity risk and
24 manager, energy planning?

25 MR. INCE: A: No, I don't.

26 MR. WEAVER: Q: Oh, I'm sorry. So that -- so the

1 position now is manager, load --

2 MR. INCE: A: So, I'm responsible for market price
3 forecasting and load forecasting.

4 MR. WEAVER: Q: Okay. And prior to joining B.C. Hydro,
5 you spent 14 years in the natural gas industry in
6 Alberta?

7 MR. INCE: A: That's right. Mainly with the ATCO
8 Group.

9 MR. WEAVER: Q: Okay. And there, were you involved in
10 electricity load forecast planning?

11 **Proceeding Time 9:52 a.m. T19**

12 MR. INCE: A: So I'll give a rundown of my CV. I
13 graduated in 1982, moved on to Canadian Western
14 Natural Gas, was responsible for doing distribution
15 planning. This was natural gas distribution. So I
16 was responsible for doing forecasts of load at the
17 distribution level. In the late eighties I was
18 working for Northwestern Utilities, Canadian Western
19 Natural Gas, for bulk gas purchases and sales. So I
20 was responsible for forecasting overall customer
21 loads, the overall utility loads during that time.

22 I transitioned over to the electricity
23 industry in Alberta in 1996, and with ENMAX, this was
24 during the transition over to market and so I was
25 responsible for ENMAX's load forecast for three years
26 from 1996 to 1999. And then I moved over to B.C.

1 Hydro and I've been responsible for load forecasting
2 with B.C. Hydro since 2005. So the load forecasting
3 file seems to have followed me for most of my jobs.

4 MR. WEAVER: Q: Okay. And --

5 MR. INCE: A: But I should also mention I have
6 significant staff expertise. So I have a number of
7 people with advanced degrees in econometrics,
8 economics, and some of them are here today. So I do
9 have significant base of expertise to draw upon,
10 including several very experienced staff who have long
11 continuity of the load forecast.

12 MR. WEAVER: Q: Thank you. The load forecast, just
13 generally speaking, I take it from B.C. Hydro's filing
14 that the 2006 load forecast was essentially accepted
15 by the Commission, with some recommendations, and B.C.
16 Hydro has taken that approval and it's made some
17 modifications, and how it's filed the forecast for
18 this LTAP. At a high level, is that a fair summary?

19 MR. INCE: A: That's right. There was a number of
20 recommendations made by the Commission in 2006, and we
21 implemented those recommendations where feasible. And
22 we've also had a major internal audit by B.C. Hydro.
23 As part of our regular audit cycle, we were audited in
24 late 2007 and we had -- from an external expert, and
25 we implemented those recommendations in the load
26 forecasts. So I'd say we made progressive

1 evolutionary updates to the load forecasts, and I
2 think it's a good product to this point. That's what
3 the auditor recommended.

4 MR. MATHESON: A: I'd point out that I think the
5 results of our load forecasts have borne out the
6 improvements we've made. Our actual sales have
7 tracked very closely to our forecasts over the last
8 number of years.

9 MR. WEAVER: Q: Well, let's spend a little time on,
10 because I'm having a little -- in terms of industrial
11 load forecasts, forecast actual 2006 to 2007, how did
12 you do there?

13 MR. INCE: A: Well, 2006, as I indicated earlier, in
14 the 2007 load forecasts we made a significant revision
15 downwards as a result of our investigation into the
16 pine beetle effect. And so we have stripped at least
17 several hundred gigawatt hours a year out of that
18 forecast.

19 So, Mr. Weaver, I've got material in terms
20 of how the load forecasts have tracked relative to
21 actuals, if that's -- that's the ultimate answer, I
22 think, in terms of how things are tracking.

23 MR. WEAVER: Q: Well, let's look at one graph firstly,
24 Mr. Ince, and that's at Exhibit B-1, Appendix D, page
25 41. And my interest here is primarily looking forward
26 in terms of looking out 20 years, which is really what

1 we're trying to do in this proceeding in terms of
2 long-term acquisition portfolios. And that's Exhibit
3 B-1, Appendix D, page 41.

4 MR. INCE: A: That's right. This is the 2007 load
5 forecast.

6 MR. WEAFFER: Q: Yes. And the forecast looking out to
7 -- and again focusing on long term here, 20 years out.
8 You'd agree with me that a big part of what we're
9 doing in this proceeding is planning for the future,
10 and we'll get into the portfolio analysis. But you'd
11 agree with me that the more often we are looking for
12 the route, the more risk we take buying too much early
13 on. Is that a fair general statement?

14 MR. INCE: A: Too much or too little.

15 MR. WEAFFER: Q: Yes. Fair enough.

16 MR. INCE: A: So to reiterate, we try and do a P50
17 forecast, that is going forward my expectation, my
18 hope is that we're high 50 percent of the time and low
19 50 percent of the time. I don't try and introduce any
20 specific bias into the forecast.

21 **Proceeding Time 9:57 a.m. T20**

22 MR. WEAFFER: Q: I understand, and that's not what I'm
23 stating. But if we look at the first forecast for
24 2006, and looking out particularly long-term, so
25 '25/'26, 2027/'28, have you adjusted that downward
26 from 2006 to -- sorry, you materially adjusted that

1 downward from 2006 to 2007, correct?

2 MR. INCE: A: As indicated by the chart on page 41,
3 yes, we did make a significant downward revision to
4 the forecast. Again, it was largely in the forestry
5 sector, and it was informed by our study on the pine
6 beetle.

7 MR. WEAVER: Q: And with respect to 2007, have you also
8 made a significant downward adjustment looking further
9 out to 2027/2028? Have you made a further downward
10 adjustment looking further out?

11 MR. INCE: A: You mean 2008 in the new forecast?

12 MR. WEAVER: Q: Yes, the new forecast.

13 MR. INCE: A: We have made specific sector adjustments
14 downward, yes, and forestry is one of them in which we
15 have adjusted downwards again.

16 MR. WEAVER: Q: So do you know off the top of your --
17 your adjustment from 2000 and -- your 2006 forecast,
18 looking out to '25, '26, to what you're forecasting
19 today, how far have you come from what broaches on
20 25,000 gigawatt hours? Over those two cumulative
21 forecasts?

22 MR. MATHESON: A: Sorry, are you asking what the impact
23 of the adjustment was in the farthest years of the 20-
24 year forecast?

25 MR. WEAVER: Q: Yes. Over the two successive
26 forecasts.

1 MR. INCE: A: Between the two forecasts, from 2006 to
2 2007, and 2007 to 2008, I believe it's about 5,000 to
3 5500 gigawatt hours a year.

4 MR. MATHESON: A: Not a year, but cumulatively over
5 those two forecasts.

6 MR. INCE: A: Yes, jumping from 2006 to 2008.

7 MR. WEAFFER: Q: Understood.

8 Mr. Chairman, is this a good time to break?

9 THE CHAIRPERSON: It is, indeed, yes. It's always a good
10 time to break. 15 minutes.

11 **(PROCEEDINGS ADJOURNED AT 10:00 A.M.)**

12 **(PROCEEDINGS RESUMED AT 10:15 A.M.) T21/22**

13 THE CHAIRPERSON: Please be seated.

14 Mr. Weafer, did you resolve with Mr.
15 Godsoe?

16 MR. WEAFFER: Not even close, no. No, we need more time.

17 THE CHAIRPERSON: Okay.

18 MR. WEAFFER: We need more time, Mr. Chairman, and Mr.
19 Godsoe's going to investigate and get back, so we will
20 leave it for now.

21 THE CHAIRPERSON: Very good.

22 MR. WEAFFER: Thank you, Mr. Chairman.

23 **CROSS-EXAMINATION BY MR. WEAFFER (Continued):**

24 MR. WEAFFER: Q: Now, before the break, Mr. Ince, we
25 talked about a 5,000 gigawatt hour downward reduction
26 in load forecasts from 2006 to 2008. Just to --

1 there's been discussion in this hearing around
2 structural change in the economy, and is it occurring.
3 Would you not agree with me that that magnitude of
4 change in the long-range forecasts would indicate a
5 belief that there has been some structural change in
6 the economy?

7 MR. INCE: A: Yes, and I indicated earlier that most of
8 the difference between the 2006 and '07 forecast was
9 as a result of that structural change, the wood
10 sector, forestry sector.

11 MR. MATHESON: A: But in an overall sense, I think we
12 discussed a little bit earlier that the trajectory of
13 the load is anticipated to return to its former
14 levels, albeit with a two-year delay as a result of
15 the economic downturn. So in that sense, in that
16 micro-sense, there isn't a permanent structural change
17 in the overall load of British Columbia, or B.C.
18 Hydro's customers.

19 MR. WEAVER: Q: But Mr. Matheson, isn't the adjustment
20 that's been made, the 5,000 gigawatt adjustment being
21 forecast to be 20 years out, so the adjustment is
22 occurring now, but it's not -- so you're saying it's
23 not bouncing back to what were the forecast levels --

24 MR. MATHESON: A: So, it's a question of semantics. If
25 you're suggesting that the structural change is this
26 two-year hiatus, then yes, I would agree that that's a

1 structural change. If you're suggesting that some
2 proportion of our load has gone away and is never
3 going to return again, such that you wouldn't see that
4 same level or trajectory of the forecast returning
5 ever, then no, that's not the case.

6 MR. WEAVER: Q: So beyond 20 years it may come back.

7 MR. MATHESON: A: Right.

8 MR. WEAVER: Q: But not with -- fair enough. In terms
9 of that adjustment, and this may be a question for a
10 subsequent panel, but if the 2006 Call had not had the
11 level of attrition that it had, would customers be at
12 significant risk if that 2006 forecast had been
13 accepted? The original forecast?

14 MR. INCE: A: Can you repeat the question?

15 MR. WEAVER: Q: If the original 2006 forecast, which is
16 5,000 gigawatt hours less than what B.C. Hydro is now
17 predicting, had been relied on, and the 2006 Call had
18 not had the attrition level that it had, was there a
19 risk that that amount of power may have been purchased
20 at that time?

21 MR. MATHESON: A: Well, it's a hard question to answer.
22 It's -- for one thing, there's two hypotheticals in
23 there that, you know, I think make it hard to answer
24 that question. I think our -- generally speaking,
25 when you're developing a forecast, you're inevitably
26 (a) going to be wrong, because there's things that you

1 simply can't anticipate, and anybody who does
2 forecasting will tell you that; (b) you're trying to
3 find a balance between, you know, responding to that
4 -- as I said earlier, responding to the short-term
5 things, the twists and turns that come along that
6 would change things, and then constantly changing your
7 plans so that you're always -- essentially playing
8 catch-up, or taking a bit of a longer-term view.

9 One of the things we know about the load
10 forecast is that in British Columbia history has shown
11 us that our load grows, and it grows roughly 1.5, 1.4
12 - 1.5 percent every year, if you take an aggregate on
13 the long-term. It's always shown that it does that.
14 And so we try to take that longer-term view and not
15 respond to the "current-itis" that some would have us
16 respond to, and which inevitably could, in the worst
17 case, anyway, put our customers at risk of being
18 short. And I think Mr. Elton pointed out on Panel 1
19 that that's the one thing that we really try to avoid
20 altogether, is being short. We want to continue to
21 provide, you know, reliable service to our customers
22 and so we don't want to be short. If we're long, we
23 know that eventually the load will catch up with being
24 a little bit long without obviously being unreasonable
25 about the amount of financial risk we put our
26 customers to, but that's generally what we try and do.

1 MR. WEAVER: Q: You would agree that the customers
2 would have been at serious financial risk if that 2006
3 load had been relied on. As forecast.

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

5 MR. WEAVER: Q: You would agree that the customers
6 would have been at significant risk if the 2006
7 original forecast had been relied on.

8 MR. MATHESON: A: Had been relied on, or had come to
9 pass?

10 MR. WEAVER: Q: Had been relied on in terms of
11 acquisition of resources.

12 MR. MATHESON: A: Well, the qualifier you used,
13 "serious risk", I'm not sure. I mean, at the end of
14 the day, there's always things that we can do. But,
15 you know, I take your point.

16 **Proceeding Time 10:20 a.m. T23**

17 MR. WEAVER: Q: If the 2006 Call had not had the level
18 of attrition, and that extra 500 gigawatt hours of
19 power have been contracted for, that would have been a
20 real and serious risk and cost. Would you agree?

21 MR. WEAVER: Q: Well, I'm not sure. It turns out that,
22 you know, some of the prices we were getting in that
23 2006 Call were very attractive. And so, you know, it
24 wouldn't necessarily have been a bad thing for us to
25 have been supplied with contracts at that price level
26 as it turns out. But generally I do take your point.

1 There's been a significant downturn in the economy,
2 and so there's been some attrition that's come with
3 the supply we'd anticipated needing at the time and so
4 we've essentially netted out. But I'm not -- I don't
5 think I'm prepared to agree that if there would have
6 been sort of serious financial consequences, I think
7 we'd have been able to figure out how to manage that.

8 MR. WEAFFER: Q: Would you agree that if the power had
9 been acquired at the prices bid into the Call, and not
10 utilized by B.C. Hydro, there would have been a
11 material risk, you would have to sell that power at
12 less than the price paid?

13 MR. GODSOE: Mr. Chairman, I agree with Mr. Wallace [sic]
14 that there are some hypotheticals that should be
15 tested. But the fact is we didn't rely on the 2006
16 load forecast. The fact is there is attrition with
17 the '06 Call. So I'm not understanding how this is
18 relevant.

19 MR. WEAFFER: Well, it's clearly relevant, Mr. Chairman,
20 in that we're relying on a forecast now in 2008, and
21 we've got a Call for power that B.C. Hydro is
22 presently assessing. And if the forecasts are not
23 accurate this time around, as they were originally in
24 2006, that's a material risk. That's what this
25 hearing is all about.

26 MR. GODSOE: So I agree we can test how the forecast is

1 tracking, and that's fine for this panel. What I'm
2 objecting to is this hypothetical of no attrition for
3 the '06 Call. There was, and that's been established,
4 and it can be tested with Panel 4.

5 I also invite my friend, because I think
6 it's relevant and I want his questions answered, to
7 deal with attrition with the Clean Power Call. But
8 I'm struggling to understand the two hypotheticals put
9 together, which is, if you had relied on the '06
10 forecast and there was no attrition from the Call,
11 would customers be at risk? I mean, neither has come
12 to pass in the LTAP. So that's what -- that specific
13 question I am taking exception to.

14 I agree with my friend that testing how
15 load forecasting is tracking is absolutely within
16 scope and should be pursued with this panel. I also
17 agree the testing and the attrition of pre-existing
18 Calls and going forward should actually be tested.
19 But what I am struggling with is there was attrition
20 with the '06 call, so how is this question relevant?

21 THE CHAIRPERSON: Mr. Weafer, I mean you are obviously --
22 as you say, you've got the right witness there. Mr.
23 Matheson seems comfortable with your questions. So, I
24 mean, subject to what Mr. Godsoe just said that you
25 can't -- don't force them to look too obvious in their
26 rear-view mirror.

1 MR. WEAVER: Mr. Chair, I could leave this argument at
2 this point. I think we have canvassed it. And we can
3 move to the present forecasts.

4 THE CHAIRPERSON: All right.

5 MR. WEAVER: Q: And the actual load to September this
6 year was below the 2007 forecast, is that correct?

7 MR. INCE: A: Yes.

8 MR. WEAVER: Q: And Mr. Godsoe will probably point me
9 to this if it's on the record. Can you tell me if
10 that situation is persisting, and can you tell me
11 where the actual is relative to December or January?

12 MR. INCE: A: So Mr. Weaver, are you interested in the
13 2007 forecast or 2008 forecast to date?

14 MR. WEAVER: Q: The 2008 forecast to date.

15 MR. INCE: A: Okay.

16 MR. MATHESON: A: What you're asking is what are our
17 actual sales doing as tracking against what we've
18 anticipated in the '08 forecast?

19 MR. WEAVER: Q: Actually if you can, I would be curious
20 as against the '07 forecast and the '08 forecast.

21 MR. INCE: A: Fair enough. So let's start with the
22 2007 forecast, and the bottom line number to the end
23 of January is that the 2007 forecast was
24 overpredicting load by 1400 gigawatt hours.

25 MR. WEAVER: Q: I'm sorry, Mr. Ince, that's to end of
26 January did I hear?

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

2 MR. WEAVER: Q: Thank you. 1400?

3 MR. INCE: A: Yes. And I think the lion's share of
4 that is in the industrial sector, which is down 1300
5 gigawatt hours relative to the forecast. So that's no
6 surprise.

7 Now, that's on a non-weather adjusted
8 basis, so we'll talk about -- I don't have the weather
9 adjustment numbers for the 2007 forecast, but let's
10 move to the 2008 forecast in that we are currently
11 tracking 300 gigawatt hours actual load lower than the
12 forecast.

13 MR. WEAVER: Q: Year to date, end of January.

14 MR. INCE: A: No, actually this tracking sheet only
15 takes me to December unfortunately, but I think the
16 trend would probably be in the range of 300-350.

17 MR. MATHESON: A: Let's put that in context. That's
18 with three-quarters of the year passed as of the end
19 of December, so --

20 MR. INCE: A: Three months. Three months in the fiscal
21 year left.

22 MR. WEAVER: Q: And that's based on the '08 forecast
23 filed as part of the evidentiary update in this
24 proceeding.

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

26 MR. WEAVER: Q: Thank you.

1 **Proceeding Time 10:26 a.m. T24**

2 MR. INCE: A: And I'm searching for the transmission
3 sales. Unfortunately I don't have explicit gigawatt
4 hours numbers here, but the transmission sales are 1.8
5 percent lower than the 2008 forecast.

6 MR. WEAVER: Q: Given that variance, do you still see
7 the 2008 forecast as the appropriate forecast for
8 planning purpose in this LTAP?

9 MR. INCE: A: Yes, I do.

10 MR. MATHESON: A: One of the interesting things to
11 note, I think, about the '08 forecast is that there's
12 been significant downward pressure on the forecast, as
13 everybody I think has been reminding us, since we came
14 up with the forecast in October of '08. And the real
15 question has been what's the degree of the economic
16 downturn, and at what point in time will it begin to
17 recover and show that trajectory returning in growth?
18 And, you know, we're a little under forecast -- we're
19 a little over forecast against the degree of the
20 downturn, and we're a little under forecast against
21 what others have been telling us will be the strength
22 of the return of the economy in fiscal '10 so that
23 they roughly net out.

24 So while I take your point that there's
25 been significant downward pressure, we're also of the
26 view that things will return in fiscal '10. That's

1 what we've been hearing from the experts. And so from
2 a long-term perspective, would we change anything?
3 Would we change our plans? Not really. So we
4 anticipate that the depth of the downturn may be a
5 little greater than what we had been able to forecast
6 when we actually had to set a market down in October
7 of '08 while were in the midst of this, you know,
8 significant issue occurring and not knowing what was
9 going to come out the other end, not having the
10 hindsight that we do now to say, well, this is the
11 degree of it. But the return is -- everybody is
12 anticipating a fairly robust return in fiscal '10, and
13 in fact they've been -- many of them have been
14 anticipating a more robust return than we actually
15 forecast ourselves.

16 So again, I think they roughly net out and
17 would cause us not to look at any changes in our long-
18 term plan.

19 MR. INCE: A: So going back to the Conference Board of
20 Canada numbers, they show, relative to the evidentiary
21 update, a deeper dip in 2009 and a stronger recovery
22 in 2010, with the net result being by fiscal '12 -- or
23 by 2012, you're back to where you were before.

24 MR. WEAFFER: Q: Now, I did want to get to B.C. Hydro's
25 use of forecasts, and in fairness, these are difficult
26 times in terms of economic forecasts. B.C. Hydro's

1 approach to economic forecasts has been to completely
2 rely on third party forecasts, is that correct? In
3 response to a number of IRs we had, that was basically
4 the response.

5 MR. INCE: A: Well, when you say "completely", I mean,
6 the forecast is not just based on gross domestic
7 product during forecast of housing stock. There's a
8 significant amount of expertise and judgment, in my
9 mind, involved in producing this forecast. So it's
10 talking to the key account representatives, who talk
11 in turn to the customers about what their plans are
12 and what their expansions and shutdowns are. A wide
13 variety of economic indicators, a number of consulting
14 reports on the forestry, the metal and mining sector,
15 the oil and gas sector. So it's not as simplistic as
16 taking a GDP number.

17 MR. WEAFFER: Q: In terms of economic drivers, fair
18 enough, Mr. Ince. The answers that we received in
19 some of our IRs were more direct than in terms of
20 economic forecasts to rely on third party forecasts,
21 and that is really what --

22 MR. INCE: A: All things being equal, we like to draw
23 upon the experts. So if we're looking at an oil and
24 gas sector report we'll call in Zip Energy Group and
25 Pyar, who are the experts on exploration and
26 production and declining rates and so on. So I think

1 we have a suite of experts assembled on these
2 forecasts.

3 MR. WEAVER: Q: Now, would you agree with me that
4 economic forecasters are not always really good at
5 predicting recessions or depressions?

6 MR. INCE: A: Well, that's hard to say. I mean, I
7 could see this coming in 2007 when I cleaned out my
8 entire stock portfolio. But --

9 MR. WEAVER: I wish I'd cross-examined you then.

10 MR. INCE: A: Sorry. Sorry. But I mean, there are
11 some markers and advanced indicators, and the reason
12 why we made these changes to the 2008 forecast, we saw
13 it coming in early 2008 with respect to the housing
14 bubble, and all the things that have developed since
15 then. I mean, I'm somewhat surprised by the severity
16 of it, but to me it wasn't surprising.

17 **Proceeding Time 10:31 a.m. T25**

18 MR. WEAVER: Q: And do you have a high level of comfort
19 in terms of historic forecasts of when economies come
20 out of recessions?

21 MR. INCE: A: We have to depend, I think, primarily on
22 the third-party experts that we've drawn upon, such as
23 the Conference Board of Canada.

24 MR. WEAVER: Q: And do you have -- you're relying on
25 the experts, but still you take a number of reports
26 and you apply judgment to those reports. At the end

1 of the day, B.C. Hydro still provides its judgment, as
2 applied against those third-party reports, correct?

3 MR. INCE: A: Oh, absolutely. At the very least, we
4 have to determine which forecasters and which third-
5 party experts we're going to draw upon. That's
6 judgment.

7 MR. WEAVER: Q: Now, I asked Mr. Elton whether he
8 thought it was going to get worse before it gets
9 better, and I asked your Chief Financial Officer in
10 the revenue requirement hearing whether he thought it
11 was going to get worse before it gets better, and they
12 both agreed it was going to get worse before it gets
13 better. Do you have a different view?

14 MR. INCE: A: No, I think on the balance of evidence,
15 based on between when we filed the evidentiary update
16 and the current situation right now, I would say that
17 things have regressed.

18 MR. WEAVER: Q: And what is your view with respect to
19 whether that will continue on?

20 MR. INCE: A: My estimates are in line with what we
21 have from the Conference Board of Canada, the Ministry
22 of Finance, that we'll see a recovery in 2010.

23 MR. MATHESON: A: Fiscal 2010.

24 MR. WEAVER: Q: And what if you're wrong?

25 MR. INCE: A: Then our forecasts will be too high.

26 MR. WEAVER: Q: And --

1 MR. INCE: A: Now, what do you define by "wrong"?
2 We're trying to be symmetrical in terms of the error.
3 As I said before, we're not trying to introduce bias
4 in the forecast, and I'm hoping when I retire that my
5 forecasts will have a history of being 50 percent too
6 high and 50 percent too low. That's my goal.

7 MR. MATHESON: A: And his stock portfolio will be in
8 excellent shape as well.

9 MR. WEAFFER: Q: You've had two material downward
10 adjustments in your forecasts from '06 and '07,
11 looking forward. And you don't see circumstances now
12 such that you should be looking to further reduce it,
13 looking forward.

14 MR. INCE: A: Not at this point. The point might come
15 in the future that that's the case.

16 MR. WEAFFER: Q: And when do you think you would be in a
17 position to give this Commission more comfort on that?

18 MR. INCE: A: We do forecasts every year, at the
19 minimum. So we do a long-term estimate, typically
20 timed around December, but if there are substantive
21 developments such as a series of major customers
22 dropping off or a major new expansion, then we reflect
23 that in a forecast update. We did produce two
24 forecasts this year.

25 MR. MATHESON: A: Again, Mr. Weaffer, I want to make the
26 point that we're asking the Commission to endorse

1 long-term acquisitions that shouldn't really hinge on
2 any small changes in the depth of the downturn or the
3 degree of its recovery. We believe we've roughly set
4 that out, and we should see something along those
5 lines occur, as we've set out, and we're not asking
6 the Commission to change those things on the short-
7 term. We're really looking at these acquisitions
8 being required for our customers in the long term, and
9 so we want -- I know I keep coming back to it, but I
10 want to remind everybody that that's really what we're
11 trying to do here.

12 MR. WEAFFER: Q: That is understood. That is
13 understood. Just again in terms of the longer-term
14 economic forecasts and those that you've looked at,
15 Mr. Ince, I'm not sure I got it -- I put the question
16 to you clearly. Is it typical that they do not
17 forecast economic recessions looking forward? If you
18 look forward in your forecasts for the next 20 years,
19 do you see in those forecasts from those third-party
20 sources, predictions of recessions or depressions
21 within the next 20 years?

22 MR. INCE: A: No. Very few long forecasts I've ever
23 seen on anything, commodities, the economy or
24 anything, have predicted cycles. And there will be
25 cycles. There will be boom/bust cycles, I think,
26 either in the economy or in commodity prices. But the

1 forecast, so the forecast takes off from a lower
2 starting point. But also, third-party information we
3 depend upon in terms of use rate, that's the Energy
4 Information Administration, it's a department of the
5 U.S. Department of Energy, is predicting that use
6 rates will be lower for households going forward.

7 So, the downward revision in the
8 residential forecasts, and it's not insignificant, is
9 a result of lower housing starts in B.C., but also I
10 guess just more efficient households in terms of use
11 rates.

12 MR. WEAVER: Q: And do you see increased conservation
13 activity as a result of recession? As a result of
14 economic pressures on households? Do you factor that
15 in?

16 MR. INCE: A: Yes. And so, that would show up in the
17 number of housing starts, for one thing. And in the
18 use rate, for another thing.

19 MR. WEAVER: Q: So those -- in terms of the use rate
20 reduction that you have indicated, is that the driver
21 of that, part of that response to --

22 MR. INCE: A: Well, certainly in the short-term, we're
23 starting from a lower starting point, which would
24 reflect the current situation. But again, we don't
25 try and forecast cycles in terms of recessions in this
26 use rate.

1 MR. WEAVER: Q: Okay. If I could turn you to Exhibit
2 B-12, CEC IR 3.5.2?

3 MR. INCE: A: Yes.

4 MR. WEAVER: Q: And here, setting out the impact on
5 residential, commercial, industrial sectors, due to
6 forecast of rate increases assumed. And would you
7 agree that the impact of price on rate increases
8 appears to be a significant factor?

9 MR. INCE: A: Yes. So, the table on the left-hand side
10 is the savings as a result of our rate forecast, long-
11 term rate forecast. And it's showing about the 1,000
12 to 1500 gigawatt hours a year of savings, as a result
13 of the rate forecast that we've put forward of about
14 50 percent real increase over the next ten years,
15 compared to a lower estimate, around 700 to 800 in the
16 2007 forecast. So, we have dropped around 300
17 gigawatt hours as a result of that increased forecast
18 on rates.

19 MR. WEAVER: Q: And in terms of the future costs, as we
20 understand it with respect to BCTC forecasts for
21 capital investments, you're using BCTC's forecasts for
22 the next 20 years, is that correct?

23 MR. INCE: A: I can't speak to the long-term rate
24 forecasts, but presumably an aggregate of costs are
25 built into the long-term rate forecasts that I've
26 embedded in this forecast.

1 MR. GODSOE: And there is an undertaking from Mr. Elton
2 on that, which we will be filing.

3 MR. WEAVER: Okay, fair enough, thank you.

4 MR. WEAVER: Q: Are you comfortable that this forecast
5 captures all rate impacts? With a high level of
6 certainty?

7 MR. INCE: A: Well, as our discussion with Mr. Wallace
8 this morning, there's rate impacts that may occur in
9 the Tier 2 of either the residential or industrial
10 inclining block rates. And I'll defer those to Mr.
11 Hobson, in terms of how he's reflected those changes
12 in the RIB Tier 2s.

13 MR. WEAVER: Q: But are they captured in the load
14 forecast here? Those impacts.

15 MR. INCE: A: As I indicated earlier, my forecasts, I
16 reflect the long-term rate forecast. So that long-
17 term rate forecast is embedded in my forecast.

18 **Proceeding Time 10:40 a.m. T27**

19 MR. WEAVER: Q: Is embedded, okay, thank you.

20 If I could turn you to, again dealing with
21 load forecast, Exhibit B-12, BCUC IR 3.251.1.

22 THE CHAIRPERSON: The number again, Mr. Weaver?

23 MR. WEAVER: 3.251.1, Mr. Chairman.

24 THE CHAIRPERSON: Thank you.

25 MR. INCE: A: Yes.

26 MR. WEAVER: Q: And here we're talking about new mining

1 loads before DSM savings are provided in the table
2 attached. Has B.C. Hydro reassessed its certainty
3 about these new mines going into production, based on
4 the current state of world commodity markets?

5 MR. INCE: A: These would have been current as of late
6 2008. So subsequent to that, no, we haven't done a
7 reassessment in the last six weeks or so.

8 MR. WEAVER: Q: So these, based on current commodity
9 rates, B.C. Hydro has a high level of certainty that
10 these will proceed?

11 MR. INCE: A: Yes.

12 MR. WEAVER: Q: And that is based on -- in the same
13 exhibit book, BCUC IR 3.252.1. Why does B.C. Hydro --
14 do you have that IR?

15 MR. INCE: A: Sorry, that's 252.1?

16 MR. WEAVER: Q: 2.52.1.

17 MR. INCE: A: Right.

18 MR. WEAVER: Q: Can you tell me why B.C. Hydro assumes
19 rate increases at the rate of inflation for 2019 to
20 2029?

21 MR. GODSOE: So I think that was asked and answered on
22 Policy Panel 1, which I clearly assigned the long-term
23 rate increase forecast to, Mr. Chairman. I can pull
24 the transcript up and show my friend that, but that
25 was asked and answered in several IRs and with Mr.
26 Elton, on why from years 11 to 20 we did what we did.

1 MR. WEAVER: Q: Mr. Ince, as the load forecast
2 representative of B.C. Hydro, would you agree that
3 there may be additional cost pressures on B.C. Hydro
4 than the rate of inflation during that period?

5 MR. INCE: A: I am not qualified to speak to revenue
6 issues, those revenue issues.

7 MR. WEAVER: Q: No, this is a load forecast issue in
8 terms of impact on load as a result of rate impacts.

9 MR. INCE: A: Well, I think it's a hypothetical in that
10 if there was a new rate increase forecast provided by
11 Corporate Finance, then we would include it in the
12 load forecast.

13 MR. WEAVER: Q: So we don't know now, so we peg
14 inflation as the rate.

15 MR. INCE: A: This is the most current forecast that we
16 have in the corporation.

17 MR. WEAVER: Q: Fair enough.

18 In terms of specific impact on industrial
19 load in British Columbia, there's been some discussion
20 about housing starts. Do you do any -- in the U.S.
21 Do you have any understanding of the current inventory
22 of housing in the U.S. at this time?

23 MR. INCE: A: I understand it's in excess of one year.

24 MR. WEAVER: Q: And was that considered in preparing
25 the industrial load, or is that a fact that's become
26 more recently known to B.C. Hydro?

1 MR. INCE: A: The consultant that we hired, Temanex,
2 was clear leading into the issuance of their forecasts
3 of the housing sector and the forestry sector and pulp
4 and paper, that there was serious downturns occurring
5 in all of those. And they did indicate, and in fact
6 its in the materials that provided -- both the public
7 versions and the versions provided to the Commission
8 in confidence, that they had serious concerns about
9 the U.S. housing stock and the rate of builds and the
10 inventory.

11 So as of October timeframe, we have
12 reflected that in the forecast.

13 **Proceeding Time 10:45 a.m. T28**

14 MR. WEAVER: Q: I see. I understood their report to be
15 to July, 2008 and it dealt with housing starts in
16 2008, but perhaps I've misread it. Is that your
17 understanding as well?

18 MR. INCE: A: Well, subject to check, I think they did
19 another presentation to us in the October time-frame.
20 Perhaps it was September.

21 MR. WEAVER: Q: Based on the July, 2008 information,
22 though?

23 MR. INCE: A: But certainly we had dialogue with them
24 right up to the last moment, so they were at call for
25 us in terms of consultations on how things were
26 evolving over time.

1 MR. WEAFFER: Q: Okay. The information I've looked at,
2 just for the purpose of the record, is BCUC IR
3 3.238.2, attachment 4, the public version, which is
4 dated July, 2008. Is there a more current forecast
5 from Temanex on the record about U.S. housing starts?

6 MR. INCE: A: Well, perhaps not on the record, but what
7 they did is, they were consulting with us right up to
8 the last moment, in terms of the cut-off date for the
9 forecast. And so, they -- ultimately, the product
10 they provided to us was a production forecast for the
11 major forestry sector customers. In terms of tons of
12 output, or millions of board feet. And so, right up
13 to the last moment, I think, they were providing
14 information on this to be reflected in our industrial
15 forecast.

16 So, although the presentation may be frozen
17 in time, we were reflecting new information as it came
18 along.

19 MR. WEAFFER: Q: And is that information on the record?
20 Or that -- as I understand that study, that was filed
21 as part of the evidentiary -- IRs on the evidentiary
22 update. Is there further information?

23 MR. INCE: A: In -- well, the forecast depends on an
24 account-by-account forecast, so I'm not sure if that
25 -- of the date of that.

26 MR. WEAFFER: Q: Well, that information is July, 2008.

1 The report is July, 2008, which I'm assuming relies on
2 information prior to that date. Is there any other --
3 MR. GODSOE: Why don't we just turn to that IR so you can
4 match the report against the presentation? So, it's
5 Exhibit B-12, response to BCUC IR 3.238.2.
6 MR. WEAFFER: Q: And I'm particularly looking at page 14
7 of 96, in terms of U.S. housing start trends, with
8 forecasts.
9 MR. O'RILEY: A: And, Mr. Weafer, can you repeat the
10 page again?
11 MR. WEAFFER: Q: Oh, I'm sorry. Well, the graph I'm
12 looking at with respect to U.S. housing starts is page
13 14 of 96. And I'm assuming that's the information Mr.
14 Ince is saying has been updated.
15 MR. GODSOE: And then -- and the presentation is
16 Attachment 7.
17 MR. O'RILEY: A: Can you repeat the page reference
18 again?
19 MR. WEAFFER: Q: I'm looking at the graph at page 14 to
20 96.
21 MR. O'RILEY: A: Okay, we've got a different number of
22 pages.
23 MR. WEAFFER: Q: Attachment 4?
24 MR. O'RILEY: A: Oh, Attachment 4.
25 MR. WEAFFER: Q: Sorry, BCUC IR 3.238.2, attachment 4.
26 MR. O'RILEY: A: Thank you.

1 MR. WEAVER: Q: And is that the most -- is there more
2 current updates on U.S. housing starts that B.C. Hydro
3 has relied on in its load forecasts?

4 MR. INCE: A: I'm not sure about specific housing
5 starts, but in terms of the production forecasts, and
6 that's the key thing in terms of developing the
7 forecasts, that is for each individual customer what
8 is their expected long-term output, there may have
9 been more recent information on that.

10 MR. WEAVER: Q: I think in earlier cross-examination
11 you spoke about the structural change in relation to
12 pulp and paper newsprint. Would you agree we've got a
13 fairly fundamental structural change in the housing
14 industry in the United States?

15 MR. INCE: A: I wouldn't necessarily agree with that.
16 I think there is a structural change in newspaper, as
17 people go towards more digital media. But with
18 respect to housing, this is a housing bubble in which
19 there was a lot of houses built that perhaps couldn't
20 have been afforded by people who -- so there was a lot
21 of mortgages floated that -- to people that shouldn't
22 have had them, and so I think it's going to take time
23 to burn that off, but eventually I think things will
24 return to level the sustainable. I think this is an
25 inventory being burnt off of excess housing stock.

26

Proceeding Time 10:49 a.m. T29

1 MR. INCE: A: Yes, and you'd agree that a one-year
2 inventory of housing is as large an inventory as there
3 has ever been in the United States market?

4 MR. INCE: A: I believe so, but I think it will get
5 burnt off eventually. So again, this --

6 THE CHAIRPERSON: -- term, but I'm sure -- you don't mean
7 burnt down.

8 MR. INCE: A: Yes. I don't want to suggest that people
9 will burn down their houses, no.

10 MR. WEAVER: Q: And that inventory of housing stock is
11 on top of -- you're, I'm sure, generally familiar of
12 the mortgage challenge that also exists in the United
13 States in terms of -- so this inventory is on top of
14 that challenge, correct?

15 MR. INCE: A: Yes.

16 MR. WEAVER: Q: Thank you.

17 Moving on -- sorry, a specific question
18 from Mr. Craig, my consultant, and this is in relation
19 to BCUC IR 1.4.1 at Exhibit B-3 on your load forecast
20 methodology. In paragraph numbered 1 and 1.4.1, the
21 adjusted use regression models, do those regression
22 models fit a linear curve --

23 MR. GODSOE: Sorry, can we have the right IR reference?
24 I'm --

25 MR. WEAVER: I apologize. It's BCOAPO. My mistake.
26 Thank you, Mr. Godsoe. Sorry, panel.

1 MR. INCE: A: Yes.

2 MR. WEAVER: Q: And here, in terms of changes to 2006
3 IEP methodology, number 1, adoption of the
4 statistically adjusted end-use regression models which
5 have been used to support the 2006-2007 residential
6 and commercial sector load forecast, do the regression
7 models essentially fit a linear curve or a line to the
8 past data, and project that forward?

9 MR. INCE: A: Essentially, yes.

10 MR. WEAVER: Q: And can you tell me how far you go back
11 with your data?

12 MR. INCE: A: Approximately five years.

13 MR. WEAVER: Q: Five years, just to help me out there,
14 from the date of the --

15 MR. INCE: A: From the most current data that we have,
16 full year data.

17 MR. WEAVER: Q: Thank you. Also specific questions on
18 the load forecast, and here at Exhibit B-3, CEC IR
19 1.1.2.

20 MR. INCE: A: Yes.

21 MR. WEAVER: Q: And in looking at the residential uses,
22 could you tell me why the forecast residential use
23 rate for the Lower Mainland for the next ten years
24 increases at almost 70 percent more than it has in the
25 last ten years?

26 MR. INCE: A: So you're looking at the residential in

1 the leftmost column, is that correct?

2 MR. WEAVER: Q: Yes.

3 MR. INCE: A: And what's the timeframe you're looking
4 at in terms of that increase? Again, what was the
5 number you gave?

6 MR. WEAVER: Q: It is -- over the next -- I'll repeat
7 the question. Why does the forecast residential use
8 rate for the Lower Mainland for the next ten years
9 increase at almost 70 percent more than it has in the
10 last ten years?

11 MR. MATHESON: A: Mr. Weaver, do you have a reference
12 for where you're getting your information about the
13 past ten years?

14 MR. WEAVER: Q: From 2008 to 1998.

15 **Proceeding Time 10:55 a.m. T30**

16 MR. INCE: A: So looking at 2008, it's 10,054. And
17 then going back to in 1999 it would be 9596. I can't
18 specifically answer that in terms of the use rate.
19 It might have been some particular effect in the
20 economy. I think the economy wasn't particular strong
21 in the '98-99 timeframe, so that might have affected
22 the use rate for that particular year.

23 So this is difficult because you're pegging
24 one year, 2008, and then you're pegging another year,
25 1999. And there may be unique characteristics of
26 those two years that cause that effect.

1 MR. WEAVER: Q: Fair enough, fair enough.

2 MR. O'RILEY: A: I don't think we understand the
3 numbers you're using. Can you point to the cells in
4 the spreadsheet that you're -- or the cells in the
5 table that you're referencing?

6 MR. WEAVER: Q: If we take 2008 to 1998.

7 MR. O'RILEY: A: So 10,054.

8 MR. WEAVER: Q: Yes.

9 MR. O'RILEY: A: And then you're landing on fiscal
10 2018.

11 MR. WEAVER: Q: Yes.

12 MR. O'RILEY: A: So subject to the check of the math,
13 there might be a number of circumstances such as 1998
14 and 1999 may have been peculiar years in terms of the
15 economy going forwards. We do use a detailed end-use
16 model in which we try and predict what the housing
17 stock is and what type of appliances and what type of
18 use they have by appliance. So it's a detail answer
19 that I can't give a comprehensive response to at this
20 time. But you're looking at a use rate change from
21 10,054 to 10,883. That's the effect of the change
22 over that time. And I would suggest probably home
23 entertainment and proliferation of computers is behind
24 much of that.

25 MR. WEAVER: Q: And if we move over to the northern
26 region, and I appreciate -- if in looking at the

1 northern region, why does the forecast residential use
2 rate for the northern region decline for the next 20
3 years when it has been increasing for the last ten
4 years?

5 MR. O'RILEY: A: Again, I would have to go one level of
6 detail below this.

7 So as we are discussing, there may be some
8 effects in terms of the housing stock as well, in
9 terms of conversion over to multi-unit res- -- or
10 apartments and condos and so on. But again I'd have
11 to go one level of detail to flesh that out.

12 MR. WEAVER: Q: When you see these results come out in
13 preparing your load forecasts, I assume you do look at
14 those changes to test the validity of the forecast.
15 Is that right?

16 MR. O'RILEY: A: Oh, very carefully, to make sure that
17 there's consistency.

18 MR. WEAVER: Q: I'd like to move on. With respect to
19 the discussion yesterday with Mr. Austin on electric
20 plug-in vehicles, and I don't think we need to turn to
21 IRs on this, although I'll give the reference IPPBC
22 2.4.1, there's discussion around a hypothetical of 10
23 percent of the vehicles stocking electric plug-in.
24 Does B.C. Hydro have any evidence that the expansion
25 of electric plug-in vehicles will increase to 10
26 percent of the vehicle stock at any time within the

1 near future?

2 MR. O'RILEY: A: No.

3 MR. WEAVER: Q: Has B.C. Hydro examined the penetration
4 of electric plug-in vehicles to date? You gave a
5 number yesterday, I believe, in terms of number of
6 plug-in vehicles.

7 MR. O'RILEY: A: I did.

8 MR. WEAVER: Q: Is that based on a study or just --

9 MR. MATHESON: A: Well, we know there's 15 of them in
10 the province right now, so --

11 MR. INCE: A: Registered with ICBC.

12 MR. WEAVER: Q: Thank you. And that's pretty easy to
13 study that, I guess.

14 MR. INCE: A: To be complete, that was mid last year.

15 MR. WEAVER: Q: Thank you.

16 MR. INCE: A: So there may be growth.

17 MR. WEAVER: Q: Has B.C. Hydro reviewed projections for
18 penetration of electric vehicles for any country in
19 the world, where the projection is for the growth to
20 be 10 percent of the vehicle stock?

21 MR. INCE: A: No. I think Israel in particular is very
22 interested in electric vehicles and it's got a
23 substantial program underway. That's the only country
24 that I understand.

25 MR. MATHESON: A: I mean, we're certainly watching very
26 carefully what's going on in the manufacturing sector

1 in particular. That's going to begin to tell when
2 these -- the manufacturing capability is such that you
3 could expect to see some significant penetration, and
4 10 percent is a good -- I think you're right. Ten
5 percent is a good number to start with.

6 **Proceeding Time 11:00 a.m. T31**

7 But as to whether we've seen any markers
8 about that level of penetration when, I don't believe
9 that exists out there right now. People can speculate
10 about it, but until the infrastructure -- as I said
11 yesterday, until the infrastructure is put in place,
12 and some of the key answers -- some of the key
13 questions have been answered, you're -- it's just
14 really pure speculation, even at the 10 percent level.

15 MR. WEAVER: Q: And that's why B.C. Hydro would look to
16 have future LTAP filings --

17 MR. INCE: A: Absolutely.

18 MR. WEAVER: Q: To deal with those as they emerge, is
19 that correct?

20 MR. MATHESON: A: That's right.

21 MR. WEAVER: Q: Thank you.

22 MR. MATHESON: A: And why we do a load forecast every
23 year as well.

24 MR. WEAVER: Q: With respect to electrification of the
25 ports, has B.C. Hydro an estimate as to when that
26 might occur?

1 MR. INCE: A: Sorry, how much load or when it might
2 occur?

3 MR. WEAVER: Q: When it might occur.

4 MR. INCE: A: I don't know the specific dates, although
5 we have investigated the feasibility of it, and the
6 amount of load. It is a fairly substantial capacity.
7 I've heard numbers from 12 to 20 megawatts, and
8 especially in downtown that's a real issue, given the
9 constraints there. But the cruise ships come in on
10 weekends, and typically during the summer, so there's
11 not a lot of energy there.

12 But that's perhaps on one port. That's one
13 terminal.

14 MR. WEAVER: Q: And specifically in terms of timing, do
15 you have an estimate as to when we would -- how long
16 it will take to see electrification of the ports?

17 MR. INCE: A: No, I don't have an estimate. I don't --
18 physically, I don't think it would be very onerous in
19 terms of -- apart from the upgrades perhaps necessary
20 for the downtown system, I don't think it's that
21 onerous in terms of the amount of infrastructure.

22 MR. WEAVER: Q: There's no plan, or no scheduled
23 implementation.

24 MR. INCE: A: Not that I'm aware of.

25 MR. WEAVER: Mr. Chairman, those are my questions. Thank
26 you, panel.

1 THE CHAIRPERSON: Thank you, Mr. Weafer.

2 MR. WEAVER: Mr. Chairman, I am assuming Mr. Godsoe and I
3 will be able to get back to you after lunch on the
4 Port Moody document issue.

5 THE CHAIRPERSON: That will be fine.

6 MR. WEAVER: Thank you.

7 **CROSS-EXAMINATION BY MS. WORTH:**

8 MS. WORTH: Q: Good morning, Mr. Chair, members of the
9 panel, members of the B.C. Hydro panel. I have the
10 unenviable or -- well, depending on how you look at
11 it, enviable position of going after two major hitters
12 in the residential -- or sorry, in the ratepayer
13 group. So a lot of my questions, you'll note I'm
14 flipping a lot of pages and not asking anything. So I
15 expect to be quite a bit shorter than what I was
16 originally intending. Hopefully my questions won't be
17 overly onerous, though.

18 Okay, I'm going to be making reference to
19 tables on pages 3 and 4 of Exhibit B-12, BCUC IR
20 3.250.2. I'll just give you a moment to get to that.

21 It's marked as Table A3.6 on both pages.
22 One with a rate impact with a 1 percent increase in
23 GDP, and one -- and the second one with a 1 percent
24 decrease in GDP for the first three years of the
25 forecast. Do you have that before you?

26 MR. INCE: A: That's right. Yes, I do.

1 MS. WORTH: Q: Okay. Can you please confirm that the
2 load forecast sensitivity in the midpoint, 2018 to
3 2019, is about plus-or-minus 1200 gigawatt hours per 1
4 percent change in GDP?

5 MR. INCE: A: Yes.

6 MS. WORTH: Q: Okay. So, if we were to apply the most
7 recent 2009 GDP projection, and that is the 0.9 in the
8 negative used in the most recent B.C. budget, found on
9 Exhibit B-18, submitted by Mr. Godsoe this morning, to
10 that 2018-2019 figure, the load forecast before DSM
11 will be about how much less than that shown on the
12 December 22nd, 2008 base resource plan?

13 **Proceeding Time 11:05 a.m. T32**

14 MR. INCE: A: First I should explain these tables. The
15 question from the Commission was prefaced on there was
16 a 1 percent decrease or 1 percent increase for each of
17 three years. And then all things remain the same as
18 before. So you're getting a 3 percent cumulative
19 increase in terms of GEP for each of these tables, or
20 decrease. So this isn't a simple 1 percent decrease
21 across the board. This is a 3 percent.

22 So, and then going back to the aid that we
23 provided at the very start of today, this is -- so
24 you're looking at a decrease of about 1.8 percent and
25 a forecast of GEP relative to where we were in the
26 evidentiary update. But over the very end of the

1 term, you reach where you were before. So there's a
2 15 percent cumulative compounded growth rate in the GP
3 estimates and the evidentiary update to 2012, and
4 that's the same number you get to in 2012 with the new
5 Conference Board of Canada numbers.

6 So I can't specifically pluck one number
7 out of isolation and then apply it to this
8 calculation. I think you have to look at the whole
9 calculation or the whole series of numbers as provided
10 by the Conference Board of Canada.

11 MS. WORTH: Q: But if we were to apply the B.C.
12 Ministry of Finance budget figures to the base
13 resource plan instead of the Conference Board of
14 Canada, because I do note that they are slightly
15 different, how would that affect your calculation on
16 the load forecast before DSM in 2018-2019?

17 MR. INCE: A: Okay, again, starting from the premise
18 that our forecast is totally derived based on a GDP
19 forecast, and it isn't, and going back to the
20 Conference Board of Canada most recent numbers, I
21 would say you'd be at the same starting point as you
22 were before.

23 Moving to the Ministry of Finance numbers,
24 I admit that they are somewhat lower compounded at the
25 end of those five years. So again on the premise that
26 the forecast is totally derived from GDP, again, which

1 it isn't, the forecasts would be somewhat lower. But
2 we haven't done the calculations. Just eyeballing it,
3 I'd say you'd be 1 percent cumulative lower over these
4 five years.

5 MS. WORTH: Q: So moving on to talk about Burrard, and
6 just sort of filling in a few gaps, the few gaps that
7 were left by Mr. Weafer, and this is something that
8 was covered by Mr. Weafer somewhat and I just wanted
9 to be a little more specific.

10 Now, when I looked at BCUC IR 1.102.1 in
11 Exhibit B-3, which Mr. Weafer did make reference to,
12 it appeared that B.C. Hydro was estimating the
13 contribution levels of non-firm energy, IPP purchases,
14 and market purchases required to satisfy Burrard's
15 planning capabilities, pretty much the same from the
16 Burrard 2,000 to 4,000 scenarios. Is that right?

17 MR. O'RILEY: A: Well, sliding in that, there's a
18 range, it doesn't change a lot. The comment I would
19 make is this is with a constant water -- water
20 conditions held constant. And because we're holding
21 water conditions constant, we're also not changing
22 market prices or the relationship between gas prices
23 and market power prices with water prices.

24 So it is a fairly simplistic analysis, and
25 I would caution that we make the assumption that the
26 planned reliance on Burrard has no connection to the

1 actual operation. I think in general, if we plan to
2 rely on Burrard for larger amounts, we will tend to
3 operate it more. Obviously not a one-to-one, but if
4 we rely on Burrard for 6,000 we should expect, during
5 critical water years and adverse price scenarios, that
6 we will operate it more than we would if we'd planned
7 to rely on it for 3,000 gigawatt hours.

8 MS. WORTH: Q: Presumably though, the difference
9 between a Burrard 3,000 scenario and a Burrard 4,000
10 scenario would be relatively less as compared to the
11 difference between Burrard 3 and Burrard 6.

12 MR. O'RILEY: A: I would agree with you on that, yes.

13 MS. WORTH: Q: Okay. Now, we've heard a lot about the
14 risks that -- from this panel about the risks in
15 increasing and the planning capability for Burrard
16 from 3,000 to 4,000, and I'd like to refer you to BCUC
17 IR 2.215.2.

18 **Proceeding Time 11:10 a.m. T33**

19 MR. O'RILEY: A: Yes.

20 MS. WORTH: Q: And that can be found at Exhibit B-4.
21 And I would put it to you that this exhibit actually
22 tends to indicate that there is a marginal increase in
23 risk between these two scenarios, rather than the
24 alarming degree of risk that has been put forward this
25 morning. Would you care to comment on that?

26 MR. O'RILEY: A: I will, certainly. I think of risk --

1 we deal with risk in all aspects of our business, and
2 it's really a two-part risk. The probability of the
3 event occurring and the consequences of that event.
4 And what I'm saying, what I spoke about this morning,
5 I think the consequence of losing our social licence
6 for 3,000 gigawatt hours of planning reliance,
7 dropping down to -- having to drop down to 600
8 gigawatt hours, is quite a significant risk, quite a
9 significant consequence, for ratepayers. So that's
10 what I was speaking about.

11 MS. WORTH: Q: So when B.C. Hydro indicated that there
12 was a marginal increase in risk --

13 MR. O'RILEY: A: Well --

14 MS. WORTH: Q: -- it wasn't taking into account the
15 risks in social licence?

16 MR. O'RILEY: A: Can you point me to the use of the
17 word "marginal"?

18 MS. WORTH: Q: Let me just have a moment.

19 MR. GODSOE: This might be of assistance. Page 6 of 6 of
20 the response to 2.215.2, 3,000 is categorized as "low
21 to moderate" feasibility risk, and 4,000 is
22 categorized as a "moderate risk". I don't know if
23 that helps my friend, but --

24 MS. WORTH: Thank you.

25 MS. WORTH: Q: Can you confirm that, from an operating
26 perspective, Burrard is generally a second choice at

1 best, since it is an old, efficient technology?
2 MR. O'RILEY: A: How would I characterize that? I
3 would say that, in the operating time frame, we look
4 to obviously making the decision on the lowest-cost
5 basis, including the environmental permits and market
6 prices, carbon tax and the like. Our first choice
7 would generally be to use the non-firm hydro, because
8 it has a negligible variable cost. I -- so Burrard
9 would come after that. I don't think it's because
10 it's -- I think your term was "old efficient and
11 outdated" -- "old, inefficient and outdated". It's
12 just generally that there's an overwhelming preference
13 to use the non-firm hydro.

14 **Proceeding Time 11:15 a.m. T34**

15 MS. WORTH: Q: Okay. If we turn to Table 2-10 of
16 Exhibit B-10, which is the base resource plan, it
17 includes Burrard at 3,000 gigawatt hours of
18 capability. Now, based on the mid-load forecast
19 beyond 2017, when SD 10 applies, it appears that the
20 full planned Burrard output of 3,000 gigawatt hours
21 would never be required to serve domestic load. Is
22 that right?

23 MR. O'RILEY: A: That's not correct. That's a scenario
24 -- sorry, let me -- sorry, can you clarify for me why
25 you think it would never be required? I don't
26 understand.

1 MS. WORTH: Q: I was looking at the bottom. When we
2 looked at the 2008 mid-load forecast surplus deficit,
3 I looked at -- and there was a 300 gigawatt surplus.
4 MR. MATHESON: A: In fiscal '17?
5 MS. WORTH: Q: In fiscal -- yes, fiscal 2017. If you
6 go down to the second line from the bottom.
7 MR. O'RILEY: A: No, I see that.
8 MS. WORTH: Q: Mm-hmm.
9 MR. O'RILEY: A: So how does that -- I mean, that
10 assumes that Burrard is there.
11 MS. WORTH: Q: Yes.
12 MR. O'RILEY: A: For 3200.
13 MS. WORTH: Q: Yes.
14 MR. O'RILEY: A: So, we do need it.
15 MS. WORTH: Q: But not, presumably, for the full 3,000
16 because you do have the opportunity to offset, as
17 you've testified earlier, a rather large portion of
18 Burrard's planning capability with secondary hydro
19 Heritage resources, as well as IPP purchases and
20 market purchases. Isn't that right?
21 MR. MATHESON: A: But fiscal '17 is the year that
22 Special Direction 10 takes effect. And we are not
23 allowed to rely on any of those resources you've just
24 mentioned.
25 MS. WORTH: Q: You're not allowed to rely on secondary
26 hydro -- Heritage hydro?

1 MR. O'RILEY: A: For planning purposes.

2 MR. MATHESON: A: For planning. This is a planning
3 view that you're showing us here.

4 MS. WORTH: Q: Okay.

5 Thank you, those are my questions.

6 THE CHAIRPERSON: Thank you, counsel.

7 Mr. Andrews, good morning. I intend to
8 break in about 25 minutes, so if you can let me know
9 at a time that will be convenient for you.

10 MR. ANDREWS: Thank you, I'll do that.

11 **CROSS-EXAMINATION BY MR. ANDREWS:**

12 MR. ANDREWS: Q: Good morning, members of the witness
13 panel. My first general topic has to do with electric
14 heat pumps, and I'm sure that at the DSM end of that
15 topic I'll be referred to Panel 4, so my questions
16 here are to the extent to which DSM heat pumps involve
17 forecasting consequences.

18 MR. INCE: A: Sorry, could you restate that, please?

19 MR. ANDREWS: Q: Well, and maybe I should -- this is
20 sort of a threshold question. In your forecasting, do
21 you take into account the existing penetration of
22 electric heat pumps and any future trends or changes
23 in the penetration of electric heat pumps?

24 **Proceeding Time 11:19 a.m. T35**

25 MR. INCE: A: Yes, we do, to the end-use surveys.

26 MR. ANDREWS: Q: And what is your general observation

1 about the future penetration levels of electric heat
2 pumps?

3 MR. INCE: A: Going from memory, we do have a number of
4 categories of home heating, of which baseboard type
5 heating -- if you do have a home that's electrically
6 heated, baseboard type heating is the most common by
7 far. And then forced air furnace is the second most
8 common. I think we have very small numbers for heat
9 pumps at this point.

10 MR. ANDREWS: Q: Something less than 5 percent.

11 MR. INCE: A: Absolutely, yes.

12 MR. ANDREWS: Q: Just to clarify what we're talking
13 about in terms of how it affects your forecasting, can
14 you confirm that the electric -- well, first of all
15 that electric heat pumps have two types, there's an
16 air supply and a ground supply, potentially a third
17 water supply heat pump?

18 MR. INCE: A: I am not an expert on heat pumps,
19 although the end-use survey ultimately is a product of
20 our PowerSmart partners. And Mr. Hobson would be, I
21 think, more appropriate to talk about heat pumps, the
22 technology.

23 MR. ANDREWS: Q: All right. In planning terms, one --
24 let me -- you may have a similar answer here, but one
25 of the interesting features of an electric heat pump
26 for energy is that they are routinely at levels of

1 efficiency substantially higher than 100 percent,
2 correct?

3 MR. INCE: A: Again, well, from an engineering
4 perspective I don't understand that, but I'm not an
5 expert on the technology.

6 MR. ANDREWS: Q: Well, indeed, that is one of the
7 interesting and somewhat puzzling for lay people
8 aspects of heat pumps, so I'll ask that to Mr. Hobson.

9 Okay, now in terms of load forecasting, the
10 consequence of the substitution of an electric heat
11 pump for electric baseboard heating is a reduced
12 electric load, correct?

13 MR. INCE: A: If those efficiency numbers are correct,
14 yes. And if the customer already was a B.C. Hydro
15 customer that was on electric space heat, if the
16 efficiency increases their load will go down, all
17 things being equally.

18 MR. ANDREWS: Q: And tell me if you're not the right
19 person to ask, but one of the features of heat pumps
20 is that their degree of efficiency goes down in colder
21 temperatures.

22 MR. INCE: A: I'm not sure.

23 MR. ANDREWS: Q: And can you confirm that this has
24 consequences for the ability of electric heat pumps to
25 provide -- or to respond to a need for capacity? In
26 other words, that at the coldest times of the year,

1 the comparison between electric baseboard heating and
2 electric heat pumps is a lot closer in terms of the
3 draw on the electric -- the draw on the electric load?

4 MR. MATHESON: A: Mr. Andrews, I don't think we have
5 enough knowledge on the panel to draw that conclusion.

6 MR. ANDREWS: Q: Fair enough, fair enough.

7 THE CHAIRPERSON: Mr. Godsoe, of the remaining people you
8 have on your roster, do any of them have that
9 expertise?

10 MR. GODSOE: The most promising is Mr. Hobson on Panel 4.

11 THE CHAIRPERSON: Is he an electrical engineer?

12 MR. GODSOE: To my knowledge he is not.

13 THE CHAIRPERSON: Because these are pretty technical
14 questions, Mr. --

15 MR. GODSOE: I agree, and probably should have been
16 submitted in information requests. But I'll do my
17 best to check with Mr. Hobson to see if he can at
18 least answer the broad brushstrokes on technology.

19 THE CHAIRPERSON: Okay, thank you.

20 MR. ANDREWS: Q: Just to clarify, the physics of how
21 the heat pump creates energy efficiency levels that
22 are rated 100 percent is not my interest. It's the
23 fact that they do, and the consequences for electric
24 load that are of interest at this hearing.

25 A new topic, that in northeast B.C. and the
26 prospect of new energy load from oil and gas,

1 particularly gas developments there, and the topic of
2 the choice between electric methods of meeting that
3 demand for energy and gas fuel methods of meeting that
4 demand for energy, perhaps you can tell me, who should
5 I be addressing the questions to about the choice
6 between the electricity and gas as a method of meeting
7 that energy load. But between the two of you -- so my
8 question is, has B.C. Hydro done an analysis of the
9 greenhouse gas emissions consequences of that choice
10 between electricity to serve that new load and gas to
11 serve that new load?

12 **Proceeding Time 11:25 a.m. T36**

13 MR. RICH: A: I think in general we have. In response
14 to Terasen 1.8.1.

15 MR. ANDREWS: Q: And --

16 MR. RICH: A: Or is it 3-point -- sorry. 3.8.1.

17 MR. ANDREWS: Q: And what is the -- what is your
18 conclusion?

19 MR. RICH: A: I think the general conclusion is that,
20 if we serve that load electrically, using a combined
21 cycle gas turbine technology, for example, that it is
22 more efficient relative to a gas drive technology.
23 And therefore serving electrically would generally be
24 less. Would result in less GHG emissions.

25 MR. ANDREWS: Q: And is that --

26 MR. RICH: A: And obviously going down the line in

1 terms of resource options to -- using forms of
2 generation that are less GHG-intensive relative to
3 combined-cycle technology, you're producing even less
4 GHG emissions to serve the load.

5 MR. ANDREWS: Q: And when you're using the term GHG
6 emissions there, do you mean deemed GHG emissions
7 after accounting for offsets and so on, or do you mean
8 physical GHG emissions?

9 MR. RICH: A: Physical.

10 MR. ANDREWS: Q: And just to make sure that it -- for
11 my own benefit, that I understand, that's based on a
12 first law-type efficiency consequences between the
13 types of mechanisms to convert the energy into work.

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

15 MR. ANDREWS: Q: Thank you. In my cross-examination of
16 Mr. Elton and Ms. Van Ruyven, I was asking Ms. Van
17 Ruyven about the B.C. Hydro's analysis of the size of
18 the gap in relation to the DSM Option B possibility.
19 And my transcript reference here is Volume 5, page
20 588. So that you have what I'm referring to.

21 MR. MATHESON: A: I'm assuming, Mr. Weafer, you're no
22 longer on Fort Nelson, related to this.

23 MR. ANDREWS: Q: No, and I'm no longer Mr. Weafer,
24 either. Although the transcript did revert to that
25 previously.

26 MR. MATHESON: A: My apologies.

1 MR. ANDREWS: Q: Yes, I'm not on Fort Nelson. So, the
2 -- I'm looking here at Ms. Van Ruyven's response on
3 page 588, and as I would characterize it, and ask for
4 your comment on this is that what she said is that:

5 "Hydro made the decision between Option A
6 and Option B in the first go-round, and it
7 did not revisit that choice in the December
8 '08 update."

9 Is that either your sense of what she said, or do you
10 have some different --

11 MR. MATHESON: A: Can you -- sorry, can you --

12 MR. GODSOE: So, I -- hold on a sec. I don't think this
13 is the right panel to have that debate about Option A
14 versus Option B, and what was looked at. That is
15 clearly Panel 4. This is pre-DSM. This panel is all
16 about pre-DSM, what the gap is before the LTAP action
17 items. My friend can certainly pose that question,
18 it's absolutely relevant, but it's to a different
19 panel.

20 MR. ANDREWS: Q: Yes. And the extent of my questioning
21 is not to get farther into the -- what I want to focus
22 on is whether you can confirm that -- well, maybe Mr.
23 Godsoe has provided the answer. Are you -- in the
24 load forecasting that you do, you do not end up
25 dealing at all with the post-DSM gap. Is that
26 correct?

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

2 MR. ANDREWS: Q: All right. So, in that case, my
3 question indeed does belong for Panel 4, and those are
4 my questions.

5 THE CHAIRPERSON: Thank you, Mr. Andrews.

6 Mr. Bertsch. Are you next, Mr. Bertsch? I
7 had anticipated that Mr. Andrews was going to take us
8 up to the lunch break, but I will make the observation
9 to you that in 15 minutes I intend to call a --

10 MR. BERTSCH: And I'm sure if I forget, you will remind
11 me.

12 THE CHAIRPERSON: Absolutely.

13 **Proceeding Time 11:31 a.m. T37**

14 **CROSS-EXAMINATION BY MR. BERTSCH:**

15 MR. BERTSCH: Q: Good morning, panel. I'd like to go
16 through a few items here, and I hope you'll forgive me
17 if I happen to ask something that has already been
18 answered. It's a little bit difficult to do it in
19 real time, but I will do my best.

20 First I'd like to go through the end-use
21 survey with Mr. Ince. There was a fair bit of
22 discussion yesterday, and when you were in discussions
23 with Mr. Ghikas, and you were reviewing the RIB
24 transcript of myself, cross-examining Dr. Orans. Do
25 you recall that?

26 MR. INCE: A: I remember the transcript. I wasn't at

1 the hearing.

2 MR. BERTSCH: Q: Yes, that's right. If you could look
3 at transcript Volume 6, page 893. And if you look at
4 the top, line 2 and 3, it says:

5 "And we are doing a new end-use survey."

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

7 MR. BERTSCH: Q: And on line 7:

8 "The survey is imminent, within a few
9 weeks."

10 MR. INCE: A: Yes.

11 MR. BERTSCH: Q: Is that right? And then on lines 17
12 and 18:

13 "In constructing the latest load forecast we
14 used the 2006 end use survey, so that is the
15 latest end use survey."

16 Is that correct?

17 MR. INCE: A: Existing, approved. Yes.

18 MR. BERTSCH: Q: Right. And I assume when you use the
19 words "latest load forecast", you were referring to
20 the evidentiary update?

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

22 MR. BERTSCH: Q: If you could now reference, please,
23 ESVI -- or, sorry, Exhibit B-12, ESVI IR 3.1.2.1.1.
24 And I'll repeat that, because that's a lot of numbers.

25 MR. INCE: A: Okay.

26 MR. BERTSCH: Q: B-12, ESVI IR 3.1.2.1.1.

1 MR. INCE: A: Thank you.

2 MR. BERTSCH: Q: And at the top, it says "Load forecast
3 update". And do you notice that ESVI noted that B.C.
4 Hydro updated its load forecast from its previous
5 forecast, in the new section 2.1 called "2008 load
6 forecast update". Do you see that?

7 MR. INCE: A: Yes.

8 MR. BERTSCH: Q: Then we asked what other factors
9 changed other than housing starts for the evidentiary
10 update. Is that correct?

11 MR. INCE: A: Yes.

12 MR. BERTSCH: Q: Our question is, "What other factors
13 changed?"

14 MR. INCE: A: Yes.

15 MR. BERTSCH: Q: If you look at the second bullet to
16 B.C. Hydro's answer, I read:

17 "The residential end-use models were updated
18 in the 2008 load forecast update."

19 Is this the same as the residential end-use survey
20 discussed by Mr. Ghikas yesterday, and it seems
21 contradictory to what we heard yesterday. I'm just
22 trying to get a handle of that.

23 MR. INCE: A: So, in going forward, as I indicated
24 earlier, with respect to efficiency in appliance
25 stock, we use the Energy Information Administration, a
26 division of the U.S. Department of Energy. And we

1 update that -- they provide yearly updates, and that
2 is -- they have different regions in the U.S.,
3 identified. The south, the north, the northeast,
4 Pacific Northwest, and we use the Pacific Northwest as
5 a proxy for what the use rates are going forward in
6 terms of the appliance stock.

7 So, and we also have statistically-adjusted
8 end-use models that we rely on as well for the
9 residential forecast. So we have two types of
10 forecast models. We have a model called REAPS, and we
11 also have statistically-adjusted end-use models. The
12 SAE models do depend on -- these are two complementary
13 models that we're trying to hopefully convert to the
14 same answer. The SAE models would have as inputs
15 disposable income and other economic drivers. So
16 perhaps I was referring to the SAE models in terms of
17 economic drivers such as disposable income.

18 MR. BERTSCH: Q: So this is a different model than the
19 one Mr. Ghikas was talking about yesterday.

20 MR. INCE: A: Yes.

21 **Proceeding Time 11:36 a.m. T38**

22 MR. BERTSCH: Q: Thank you. I'd like to just look a
23 little bit more into the load forecast detail. And if
24 you could look at Exhibit B-10, page 8. And this is a
25 -- in there we see a table which compares before and
26 after the evidentiary update. The forecast for the

1 load and the energy, is that correct?

2 MR. INCE: A: Table 2.3 and 2.4?

3 MR. BERTSCH: Q: Yes.

4 MR. INCE: A: Yes.

5 MR. BERTSCH: Q: So if you could just keep that handy,
6 please, and take a look again at ESVI 3.1.2.1.1 in
7 Exhibit B-12.

8 MR. INCE: A: Sorry, it's off the ends of my binder.

9 MR. BERTSCH: Q: B-12, 3.1.2.1.1.

10 MR. INCE: A: Sorry, could you repeat that reference?
11 It's 3 point --

12 MR. BERTSCH: Q: 3.1.2.1.1.

13 MR. INCE: A: 3.1.2.1.

14 MR. BERTSCH: Q: And another "1", .1.

15 MR. INCE: A: Add 1. Right.

16 MR. GODSOE: -- make the numbering a little less
17 complicated next time. I'm just saying --

18 MR. BERTSCH: Gotcha. I'll remove one level.

19 MR. BERTSCH: Q: Do you have that?

20 MR. INCE: A: Yes.

21 MR. BERTSCH: Q: And at the bottom paragraph it says,
22 "The 2007 residential sales forecast provided in table
23 A.5, A.6, pages 98 to 99". So if you could now go to
24 that table on page 99 in Appendix D.

25 MR. INCE: A: So that is -- you're referring to the
26 2007 forecast?

1 MR. BERTSCH: Q: That's right, yes. So I'm just trying
2 to find -- just go through your indexes on your
3 responses. So we're looking at A3.6 on page 99.

4 MR. INCE: A: Right.

5 MR. BERTSCH: Q: And I just want to pull up one number,
6 just so we can get some references here. If we look
7 at 2016, 2017 and go across, for the energy we see
8 68289, correct?

9 MR. INCE: A: That's right, for fiscal '17.

10 MR. BERTSCH: Q: Right.

11 MR. INCE: A: That is the integrated system, total
12 gross requirements before DSM and with rate impacts.

13 MR. BERTSCH: Q: Correct, and that's 68289, and you can
14 find that in your table on page 8, 68289 on table 2-3,
15 correct?

16 MR. INCE: A: Just a moment, please. Yes.

17 MR. BERTSCH: Q: Yes, okay. And then the same thing
18 for 11914 for the peak onto table 2-4.

19 MR. INCE: A: Yes.

20 MR. BERTSCH: Q: Okay. And all the other years line
21 up, is that correct?

22 MR. INCE: A: That's good.

23 MR. BERTSCH: Q: Now, we also see the reference beyond
24 that to 3 point -- BCUC IR 3.250.2, which is
25 referenced at the bottom of the IR, which is the 2008
26 load forecast. 3.250.2, BCUC, and that's again the

1 one that you referenced for 2008 now.

2 MR. INCE: A: Okay, so now we're at the 2008 load
3 forecast.

4 MR. BERTSCH: Q: That's right. And that one we heard
5 -- we saw earlier this morning. Now, first of all I'm
6 assuming that's not quite the right one, because
7 that's what the one in -- 1 percent increase and
8 decrease.

9 **Proceeding Time 11:41 a.m. T39**

10 MR. INCE: A: One percent increase or decrease for
11 each year for three successive years. So a
12 significant impact.

13 MR. BERTSCH: Q: Right, and this IR wasn't talking at
14 all about increase and decrease, and so I kind of had
15 a look through and I think what you really meant was
16 3.250.1? If you could just pull that out. What I was
17 trying to do was just do the connection between what
18 was in the table to the one level lower, and I had to
19 kind of dig for it. But if you could for the moment
20 pull out 3.250.1, which is one before it.

21 MR. INCE: A: Okay.

22 MR. BERTSCH: Q: And look at 2016, and do the same
23 translation, you should see 66172.

24 MR. INCE: A: So we have to be careful. There's two
25 tables in 250 -- BCUC IR 250.1.

26 MR. BERTSCH: Q: Right.

1 MR. INCE: A: The first one is before DSM and before
2 rate impacts, and the second one is before DSM and
3 with rate impacts.

4 MR. BERTSCH: Q: Yes, it's the 8A 3.6.

5 MR. INCE: A: Yeah, it's probably important to be
6 consistent, to do before DSM with rate impacts, yes.

7 MR. BERTSCH: Q: So exactly the same look-up that we
8 did, we see 66172 and 11761.

9 MR. INCE: A: For fiscal '17.

10 MR. BERTSCH: Q: Yeah.

11 MR. INCE: A: Yes.

12 MR. BERTSCH: Q: Okay. So just to confirm that that
13 should have referenced that table instead of 250.1
14 instead of 250.2?

15 MR. INCE: A: Sorry, I don't follow you.

16 MR. BERTSCH: Q: Well, in the bottom of the IR --

17 MR. INCE: A: So you're referring originally to your--

18 MR. BERTSCH: Q: Yes, my original IR.

19 MR. INCE: A: Okay.

20 MR. BERTSCH: Q: You told me to go to 250.2, but I
21 couldn't find it there. So I found my way to 250.1.
22 I'm just confirming that --

23 MR. INCE: A: Oh yes.

24 MR. BERTSCH: Q: That is was a mistake and I correctly
25 identified the right place to go. That's all I'm
26 trying to --

1 MR. INCE: A: Yes.

2 MR. BERTSCH: Q: Okay, because if I -- because that's
3 not what I was told.

4 Okay, thank you.

5 MR. GODSOE: That's what happens when I review 1800 IRs.

6 MR. BERTSCH: Yeah.

7 THE CHAIRPERSON: Mr. Bertsch, would that be a good time
8 to break?

9 MR. BERTSCH: Just one more point and then --

10 THE CHAIRPERSON: Okay.

11 MR. BERTSCH: -- it'll be a good point.

12 MR. BERTSCH: Q: So --

13 MR. INCE: A: Right, Mr. Bertsch. So, you know, in
14 your response to 3.2.1.1 we should have -- the very
15 last part of that should be BCUC IR 3.250.1 instead of
16 2.

17 MR. BERTSCH: Q: Correct, that's -- yes, that's what
18 I'm just trying to --

19 MR. INCE: A: Guilty.

20 MR. BERTSCH: Q: -- identify, thank you. It took me a
21 while to find there.

22 But what I wanted to do is ask you another
23 question now that we've got the right chart, right?
24 And you've got your finger between the 2008 and the
25 table, and we've got the two numbers lined up for
26 2016. Can you confirm that?

1 MR. INCE: A: Okay.

2 MR. BERTSCH: Q: The problem I have, it's the long way
3 trying to get to the problem that I've been trying to
4 figure out, is for 2008. I see the load matching at
5 58735 for the energy. Do you see that line up between
6 the two? If you look at fiscal --

7 MR. INCE: A: Oh right.

8 MR. BERTSCH: Q: Yeah?

9 MR. INCE: A: Right.

10 MR. BERTSCH: Q: See it? But the problem I have is the
11 peak, where on the detailed spreadsheet I see 9860,
12 yet in the table I see 10596, and that's to me a
13 significant difference from the detail to what is in
14 the table.

15 MR. INCE: A: Are we talking about forecast versus
16 actuals?

17 MR. BERTSCH: Q: We're looking at forecast update, 2008
18 peak, 9860. Do you see that in 3.250.1?

19 MR. INCE: A: Yes.

20 MR. BERTSCH: Q: Okay, so 9860.

21 MR. INCE: A: That's on the integrated system, yes.

22 MR. BERTSCH: Q: That's correct. Now when I try to
23 find that number in the table I see 10597, a totally
24 different number.

25 MR. GODSOE: It's the year.

26 MR. INCE: A: Sorry? Are you -- so are we talking

1 about the fact of the three series IRs for the
2 Commission were generated at a later date than the
3 evidentiary update, so we might have included actual
4 history.

5 MR. BERTSCH: Q: Anyway, it's just the disparity
6 between what seemed to line up and maybe during the
7 break you can look into it and get back to me on that
8 point.

9 MR. INCE: A: I think --

10 MR. BERTSCH: Q: I mean --

11 MR. INCE: A: I think I've got the answer to it. The
12 9860 is presumably heavily influenced by the actuals,
13 and so that -- the actual load up to this date was
14 relatively muted. We didn't have the cold weather, so
15 I assume this --

16 **Proceeding Time 11:47 a.m. T40**

17 MR. BERTSCH: Q: But that's not my question right now.

18 MR. INCE: A: Okay.

19 MR. BERTSCH: Q: My question is, why is the number in
20 the detailed spreadsheet not --

21 MR. GODSOE: Can we take a break and --

22 THE CHAIRPERSON: Okay, we'll take a break until a
23 quarter past one, I guess.

24 **(PROCEEDINGS ADJOURNED AT 11:48 A.M.)**

25 **(PROCEEDINGS RESUMED AT 1:17 P.M.)** **T41/42**

26 THE CHAIRPERSON: Please be seated. Mr. Godsoe.

1 MR. GODSOE: Mr. Chairman, we have twelve undertakings
2 outstanding, and I include Mr. Weafer's undertaking.
3 We're discussing the scope but we're not objecting in
4 principle to it. I did want to enter four
5 undertakings now. The first to be marked Exhibit B-
6 19, is an undertaking to Mr. Fulton concerning
7 revenues from renewable energy credits, and the
8 reference for that is Volume 5, page 774, lines 4 to
9 22.

10 THE HEARING OFFICER: Marked Exhibit B-19.

11 (B.C. HYDRO UNDERTAKING NO. 5, VOLUME 5, PAGE 774,
12 LINES 4 TO 22, MARKED EXHIBIT B-19)

13 MR. GODSOE: The next three are all from Mr. Austin. The
14 first concerns the catastrophic failure at Burrard in
15 2001 and 2002, and the transcript reference is Volume
16 6, page 927, Volumes 3 to 24, and I'd ask that that be
17 entered as Exhibit B-20.

18 THE HEARING OFFICER: Marked Exhibit B-20.

19 (B.C. HYDRO UNDERTAKING NO. 7, VOLUME 6, PAGE 927,
20 LINES 3 TO 24, MARKED EXHIBIT B-20)

21 MR. GODSOE: The next undertaking concerns the infamous
22 issue of the boresonic inspection description. That's
23 found at Volume 6, page 928, lines 10 to 25, and I ask
24 that that undertaking be marked as Exhibit B-21.

25 THE HEARING OFFICER: Marked Exhibit B-21.

26 (B.C. HYDRO UNDERTAKING NO. 8, VOLUME 6, PAGE 928,

1 LINES 10 TO 25, MARKED EXHIBIT B-21)

2 MR. GODSOE: And the last undertaking concerns the
3 saltwater and condenser tube issue found at Volume 6,
4 page 939, lines 1 to page 140, line 7 of the
5 transcript, and I'd ask that that undertaking be
6 entered as Exhibit B-22.

7 THE CHAIRPERSON: Thank you.

8 THE HEARING OFFICER: Marked Exhibit B-22.

9 (B.C. HYDRO UNDERTAKING NO. 9, VOLUME 6, PAGE 939,
10 LINE 1 TO PAGE 940, LINE 7, MARKED EXHIBIT B-22)

11 MR. GODSOE: And those conclude --

12 THE CHAIRPERSON: The episode with the spreadsheet still
13 hasn't taken place, I see.

14 MR. GODSOE: The episode with the spreadsheet.

15 THE CHAIRPERSON: The undertaking that I thought required
16 the use of a spreadsheet.

17 MR. GODSOE: Oh, the Terasen undertaking? We are working
18 on that.

19 THE CHAIRPERSON: Thank you.

20 Mr. Bertsch, please continue.

21 MR. BERTSCH: Yes, I have a series of questions.

22 Hopefully it will clarify what we were discussing
23 before for lunch.

24 **Proceeding Time 1:19 p.m. T43**

25 **CROSS-EXAMINATION BY MR. BERTSCH (CONTINUED):**

26 MR. BERTSCH: Q: If you could please refer to Exhibit

1 B-12, BCUC IR 3.250.1, the second spreadsheet labeled
2 Table A3.6.

3 MR. INCE: A: Okay.

4 MR. BERTSCH: Q: If you could confirm that the peak
5 value for 2007/2008 is 9860 megawatts, and is the
6 actuals for fiscal 2008, is that correct?

7 MR. INCE: A: That's correct. Actual, non-weather-
8 adjusted.

9 MR. BERTSCH: Q: Thank you. If you could look at page
10 8 of B-10 --

11 MR. INCE: A: I'm there.

12 MR. BERTSCH: Q: And there are two tables there. The
13 top table is labeled Table 2-3 and is a comparison of
14 energy load, and is labeled non-weather adjusted
15 actuals. In other words, those are actuals in that
16 table.

17 MR. INCE: A: I'm there, yes.

18 MR. BERTSCH: Q: If you look at the bottom table, Table
19 2-4, it's peak load. Am I to assume that that is not
20 actuals but is weather-adjusted? There's no label
21 indicating that, but is that --

22 MR. INCE: A: These are weather-adjusted peak loads.

23 MR. BERTSCH: Q: Thank you.

24 MR. INCE: A: Hence the apparent discrepancy.

25 MR. BERTSCH: Q: Right, thank you. And could you
26 confirm that the 9860 previously mentioned for fiscal

1 2008, when it's weather-adjusted, is 10,597 megawatts?
2 MR. INCE: A: That's right. So, to add some clarity to
3 that, in that during that year, we didn't reach our
4 peak -- or our design temperature. So design
5 temperature is about minus 5 degrees for the Lower
6 Mainland, and during that winter, was -- our peak day
7 was warmer than that. So, hence the apparent
8 discrepancy. If we would have adjusted that 2800
9 megawatts to a designed day, we would have reached
10 10,597 megawatts.

11 MR. BERTSCH: Q: And therefore, the table A-36 that we
12 previously talked about matches with that explanation
13 to what we see in page 8.

14 MR. INCE: A: We're in agreement now, yes.

15 MR. BERTSCH: Q: Thank you. Appreciate that.

16 Okay. If you could please look at Exhibit
17 B-12, ESVI IR 3.1.2.1.

18 MR. INCE: A: I'm there.

19 **Proceeding Time 1:22 p.m. T44**

20 MR. BERTSCH: Q: And our question has a quote from your
21 evidentiary update, and the quote says:

22 "The residential sales forecast is lower,
23 reflecting a reduction in forecast housing
24 starts."

25 Is that correct?

26 MR. INCE: A: Yes.

1 MR. BERTSCH: Q: Do you agree that housing starts are
2 an important factor in determining the residential
3 load forecast?

4 MR. INCE: A: Absolutely.

5 MR. BERTSCH: Q: Would you say it's the biggest driver
6 for the incremental residential load forecast?

7 MR. INCE: A: Well, it's one of the top three anyway.

8 MR. BERTSCH: Q: Okay. The response to this particular
9 IR references the Conference Board of Canada as the
10 source of housing starts. Do you know the date of
11 that particular reference? When those numbers were
12 actually valid from the Board of Canada?

13 MR. INCE: A: May 2008.

14 MR. BERTSCH: Q: May 2008?

15 MR. INCE: A: Correct.

16 MR. BERTSCH: Q: How often are the forecasts, are those
17 submitted? Is there updates every six months or every
18 --

19 MR. INCE: A: Typically Conference Board of Canada
20 provides a quarterly update but for the near term. So
21 five years. The complete long-term trend is yearly.

22 MR. BERTSCH: Q: So this is the yearly number?

23 MR. INCE: A: Yes, and as I indicated with the witness
24 aid that we talked about at the very beginning, the
25 Conference Board of Canada has come up with a number
26 of subsequent updates to their forecast drivers, but

1 these are short term. So we expect the full, I
2 presume by May 2009, the full long-term update.

3 MR. BERTSCH: Q: And so that would be the soonest that
4 you'd get new numbers for the residential housing
5 starts?

6 MR. INCE: A: For the full 20-year long term, yes.

7 MR. BERTSCH: Q: Thank you. Do you set any regional
8 numbers -- these are provincial numbers.

9 MR. INCE: A: Yes.

10 MR. BERTSCH: Q: How do you translate that to regional
11 numbers, or do you?

12 MR. INCE: A: Conference Board of Canada provides
13 regional numbers.

14 MR. BERTSCH: Q: Okay, so in here is the regions that
15 are then lined in with your --

16 MR. INCE: A: These are aggregates.

17 MR. BERTSCH: Q: Right, okay. I'd like to just
18 understand a little bit more of how you get your load
19 forecast from the residential point of view, and if
20 you could look at page 69 -- sorry, Appendix D to the
21 Exhibit B-1-1. Appendix D, which is the electric load
22 forecast, page 69 of 103.

23 Now, I realize it's a big, complicated
24 formula to do the calculations, but I'd like to just
25 get some general directions here. If you look at
26 about the middle of the page, there's a formula that

1 has a number of squiggly marks in it, starting with
2 RES.

3 **Proceeding Time 1:25 p.m. T45**

4 MR. INCE: A: Okay, so we're on page 68.

5 MR. BERTSCH: Q: Sixty-nine. Oh, sorry, 68 on the --

6 MR. INCE: A: Right.

7 MR. BERTSCH: Q: -- yes, 68 on the plan, 69 on the
8 exhibit.

9 MR. INCE: A: Right. So the --

10 MR. BERTSCH: Q: If you could just explain the squiggly
11 marks, I assume, are a summation.

12 MR. INCE: A: Yes.

13 MR. BERTSCH: Q: And is it true that basically you have
14 the equivalent of 16 little forecasts, one for each of
15 the four regions, and one for each of the four type of
16 housing types?

17 MR. INCE: A: Yes.

18 MR. BERTSCH: Q: Okay. And so then from there, are the
19 appliance mixtures and the consumption values
20 different for each region, or are they the same?

21 MR. INCE: A: Well, that's a good question. I think
22 they're the same for the different regions.

23 MR. BERTSCH: Q: For the different regions.

24 MR. INCE: A: The breakdowns. So, we certainly do
25 break down the expected growth in housing stock by the
26 different regions of the province.

1 MR. BERTSCH: Q: Right. Yeah.

2 MR. INCE: A: And -- but I don't think we assume
3 fundamentally different appliance assumptions for the
4 different regions.

5 MR. BERTSCH: Q: For the different regions. Do you
6 have different appliance assumptions for the different
7 types of houses?

8 MR. INCE: A: Yes.

9 MR. BERTSCH: Q: Okay. So, if those assumptions are
10 correct, as far as if you have the same appliance mix,
11 would the housing starts be proportional to the
12 incremental -- would it be a one-to-one
13 correspondence? If you have more houses, or fewer
14 houses, that that would then translate to directly
15 proportional incremental load?

16 MR. INCE: A: So, if I understand the premise of your
17 question, all things being equal, if you increased or
18 decrease the housing stock, the load forecast would
19 change proportionally? Yes.

20 MR. BERTSCH: Q: Thank you. Okay. I'd like to go on
21 to another topic. If you could look at transcript
22 Volume 5, page 618, this is the transcript for
23 February 23rd. Do you have it? Oh.

24 MR. INCE: A: Sorry, Mr. Bertsch, is this a load
25 forecast question?

26 MR. BERTSCH: Q: Yes. It was directed directly at you.

1 MR. INCE: A: Okay.

2 MR. BERTSCH: Q: I was questioning panel number 1. If
3 you look at the bottom, I was referencing a particular
4 IR. You don't have to pull it out yet. But if you
5 look at the top of page 20 -- 620 -- I had started
6 some questions and I was directed to your panel, to
7 yourself. So I just want to make the connection that
8 I'm trying to follow through with what was asked
9 there, and totally understand if it gets punted to
10 another panel.

11 **Proceeding Time 1:28 p.m. T46**

12 MR. INCE: A: Okay.

13 MR. BERTSCH: Q: So with that in mind, I wonder if you
14 could reference B-12, BCUC IR 3.270.1. IR 3.270.1
15 BCUC. Exhibit B-12.

16 MR. INCE: A: Close. I'm there.

17 MR. BERTSCH: Q: Okay. If you could just look at the
18 fourth paragraph, and this IR deals with the energy
19 deficit in the years fiscal 2013 and 2014 as a result
20 of the evidentiary update. Is that roughly what is
21 involved in this IR? I'll just give you time to read
22 it.

23 MR. INCE: A: It doesn't seem to match up the question.
24 So going back, you're referring to 3.270.1.

25 MR. BERTSCH: Q: Yes, at the top it says "load resource
26 balances short-term deficit".

1 MR. INCE: A: Right.

2 MR. BERTSCH: Q: Yes.

3 MR. INCE: A: And it's the fourth paragraph talking
4 about --

5 MR. BERTSCH: Q: Fourth paragraph.

6 MR. INCE: A: -- economic conditions.

7 MR. BERTSCH: Q: That's right. I'll just read that
8 off.

9 MR. INCE: A: That would be helpful, yes.

10 MR. BERTSCH: Q: "Given the current global economic
11 conditions, B.C. Hydro will carefully
12 monitor its customer demand in the near
13 term. If conditions deteriorate from those
14 underpinning B.C. Hydro's 2008 load forecast
15 update set out in Exhibit B-10, the
16 shortfall in fiscal 2013 and 2014 may be
17 reduced or eliminated."

18 Is that what that --

19 MR. INCE: A: Yes.

20 MR. BERTSCH: Q: -- response from B.C. Hydro was? As
21 we mentioned in our opening comments, in the Throne
22 Speech and you don't have to refer necessarily to that
23 quote, there was a quote saying:

24 "Only a few weeks ago, most experts
25 predicted a net growth for British Columbia
26 in the year ahead. Today we must brace for

1 a period of recession."

2 And the reference to that if you need it is C17-8,
3 page 6. With that mind, I wonder if you could take a
4 look at Exhibit B-10, page 29, Table 2-10. And it's
5 labelled "Base Resource Plan Energy Table".

6 MR. MATHESON: A: Yeah, we have that.

7 **Proceeding Time 1:31 p.m. T47**

8 MR. BERTSCH: Q: Okay, thank you. Now, I know we
9 talked about this earlier this morning. Given the
10 scenario that B.C. Hydro has set out that perhaps this
11 table is sufficient for planning purposes, given that
12 is true, and if you now look specifically at the
13 conditions that we talked about -- in other words, not
14 changing this, but what I understand within here, you
15 have some range between the high, medium and low. If
16 you take into account the conditions that we have
17 today, where would you put the -- let's say from
18 fiscal 2014 where there is a deficit either of 2800 or
19 a surplus of 1900; given what you know today versus
20 when this was written, which was quite a few months
21 ago, where would you see us? At the low, medium, high
22 or somewhere in between? And at this point, it's just
23 kind of an indication of where we are sitting.

24 MR. MATHESON: A: Well, the first thing I'd point out
25 is, it was written essentially two months ago, so it
26 wasn't really all that long ago, and although there's

1 been some, you know, further information that's --
2 we've -- that we've obtained from the market about the
3 depth and degree and timing of the recession that
4 we're in, our view is that our evidentiary update
5 still stands, and so we still believe this is the mid-
6 load forecast, and that's what we would put to the
7 Commission as our case for our long-term acquisition
8 plan.

9 Having said that, the Information Request,
10 I think, sets it out fairly well in the sense that the
11 first thing we'll do is, we'll monitor how our actual
12 sales occur over the next short while or the near
13 term, to determine whether or not there's any reason
14 to believe these small deficits will either shrink or
15 become larger. And if they become larger, we do set
16 out some actions that we could take in the short-term
17 that should be sufficient to deal with them.

18 The bottom line for us is that we never
19 like to see a deficit show up, particularly in the
20 near term of one of our long-term plans. It's
21 important for us to show that we're able to meet our
22 customer need, and these small deficits in fiscal '13
23 and fiscal '14 were relatively unexpected, and were a
24 result of new attrition numbers coming from the 2006
25 Call for tenders process. So, but we've given that --
26 we felt that there was sufficient -- they were

1 sufficiently small in size, and we had enough time,
2 that we could respond to them if we needed to.

3 MR. BERTSCH: Q: So you see us at this point on the
4 mid-load --

5 MR. MATHESON: A: Yes.

6 MR. BERTSCH: Q: -- route, is where you feel we are.

7 MR. MATHESON: A: Yes.

8 MR. BERTSCH: Q: Okay. Now, this may be re-directed to
9 Panel 4, Mr. Godsoe, maybe you can help me on this.
10 There is a mention within that IR about advancing DSM
11 acquisition plan, and I had some questions on that,
12 and I just wanted to know if this is the panel, or
13 Panel 4?

14 MR. GODSOE: It is Panel 4.

15 MR. BERTSCH: Okay. That's fair enough. I'll take that
16 up with Panel 4.

17 MR. BERTSCH: Q: Okay, if you could please look at
18 Exhibit B-12, ESVI IR 3.1.4, electric plug-in
19 vehicles. Now, I'm not sure who to direct this to.
20 So, in this particular IR, ESVI asked for a discussion
21 of the off-peak/on-peak energy requirements for that
22 particular type of load. And we were then directed to
23 BCUC IR 3.246.3, in Exhibit B-12, if you --

24 MR. INCE: A: I'm there, yes.

25 MR. BERTSCH: Q: Okay. Now I realize it's in the early
26 days of electric vehicles, but we heard Ms. Van Ruyven

1 talking about a technology officer group that is
2 looking at these, so I hope that you can at least shed
3 some light in this area.

4 The response says:

5 "It is possible that all or most of the
6 energy demand due to charging plug-in
7 electric hybrid vehicles could be met by
8 charging during off-peak hours, with little
9 impact on peak demand. For this to happen,
10 the customer would need to be encouraged to
11 charge their vehicles during off-peak
12 hours."

13 I wonder if you could explain to me what you mean, and
14 how you might encourage customers to use their
15 vehicles in off-peak hours.

16 **Proceeding Time 1:36 p.m. T48**

17 MR. INCE: A: Well, we struggled with this wording
18 considerably, and particularly the use of the word
19 "encouraged", in that this implies both a carrot and a
20 stick. Electric vehicles are a real perhaps risk and
21 a real perhaps potential in terms of perhaps flowing
22 back into the grid during peak hours to mitigate peak
23 loads, but they're also a threat in terms of if people
24 get off the day at work and they want to them go out
25 for the evening, and they plug in at 5:00 and then
26 they start going in at 6:00, our biggest in-rush

1 current from the new electric vehicle load could occur
2 right at the worst time, which is 5:00 to 6:00 p.m.
3 So it could exacerbate our capacity problem.

4 So there's two ways that this could go, and
5 the encouragement could be through -- this is the
6 stick side, this is differential rates, so it could be
7 time of use rates, which penalized people plugging in
8 during the super-peak period. Or it could be, I
9 guess, inverse billing, in that people were encouraged
10 by not doing that. And then there could be technology
11 in terms of perhaps systems that limit the vehicle's
12 ability to charge up during those peak periods.

13 So that if you've got a vehicle and
14 somebody admits that they're not going to plug it in
15 -- or if they're not going to be going out for the
16 evening, the technology would indicate to that vehicle
17 to coast for the next few hours. And then come 10:00
18 p.m., then it starts to charge up again.

19 So there's a number of approaches to this.

20 MR. BERTSCH: Q: And would that basically require Smart
21 Meters then, to do the time of use?

22 MR. INCE: A: I'm not sure about that. I'm sure it
23 would help enable, but -- some aspects, but I don't
24 know if it's completely required.

25 MR. BERTSCH: Q: Okay. And again, I'm not sure if this
26 will be covered in Panel 4, if you could explain the

1 relationship of this electric plug-in vehicles to time
2 of use Smart Meters in a Smart Grid. Just what you
3 describe, what is the relationship there, and again I
4 don't know if you want to cover that here or in Panel
5 4.

6 MR. MATHESON: A: Well, I don't think we're equipped to
7 cover all of that, really. Our plan doesn't
8 anticipate any electric vehicle load occurring, and we
9 haven't put in any SOR -- expenditure request pursuant
10 to it. So I'm not sure that we're able to give a
11 fulsome treatment of that.

12 MR. BERTSCH: Q: Further questions should be directed
13 to 4 on that?

14 MR. GODSOE: Well, picking up where Mr. Matheson left
15 off, I am questioning the relevancy of this line of
16 inquiry.

17 MR. MATHESON: A: And we haven't yet set out our
18 business case for SMI, so it's a little premature, I
19 think, for us to try and have that discussion with you
20 officially on the record.

21 MR. BERTSCH: Q: Yesterday at Volume 6, page 809, if
22 you could just pull that out -- sorry, page 809, pages
23 14 to 16, and Ms. Van Ruyven was talking about the
24 reverse, and Mr. Ince talked a little bit about this.
25 "How that technology unfolds could actually be a
26 potential benefit to provide electricity back to us

1 context of that. Thank you.

2 If you take a look at Exhibit B-1, page 2-
3 21 through 2-23, it's Section 2.52, labeled "Lower
4 Mainland Vancouver Island". And I know this was
5 touched upon. I just have a few points on it. So you
6 look at the bottom paragraph -- oh, sorry. This is
7 for you, Mr. Matheson?

8 MR. MATHESON: A: I'm not sure.

9 MR. BERTSCH: Q: Okay. I'll ask the question and then
10 we'll find out. The bottom paragraph says:

11 "The LMVI region is the principal load
12 centre for the B.C. Hydro system, accounting
13 for 73 percent of the total load peak, while
14 containing only 23 percent of the system
15 dependable capacity."

16 My question is, could you tell me in rough terms and
17 as specific as you can, what makes up that 23 percent
18 of the system dependable capacity, in that particular
19 context? And there is a chart, Figure 2-9, that may
20 be helpful, on page 2-23.

21 MR. MATHESON: A: I'll let Mr. O'Riley answer that.

22 MR. BERTSCH: Q: Okay.

23 MR. O'RILEY: A: That would include our coastal hydro
24 generating stations. So Vancouver Island generating
25 plants, the Lower Mainland, Fraser Valley, Squamish
26 plants, Bridge River -- I think it would include

1 Bridge River plants as well as Burrard.

2 MR. BERTSCH: Q: Okay. And that's what would make up
3 the 23 percent?

4 MR. O'RILEY: A: Yes. It's about -- so roughly 2500
5 megawatts, which is 1500 megawatts of hydro and about
6 -- and 900 megawatts of thermal.

7 THE CHAIRPERSON: And that's what you'd also call
8 "coastal generation".

9 MR. O'RILEY: A: Coastal generation, yeah. It's used
10 typically as the hydro.

11 THE CHAIRPERSON: Yeah.

12 MR. BERTSCH: Q: Okay. Thank you. On page 2-22, near
13 the end of that first paragraph, I'll just read what
14 it says.

15 "Until the ILM network is reinforced, the
16 LMVI region will be more capacity-critical
17 than the rest of the system, i.e.,
18 approximately 300 megawatts in fiscal 2012."

19 I wonder if you could explain to me in practical terms
20 what does it mean to be more capacity-critical? What
21 is the effect? What does that really mean?

22 MR. MATHESON: A: Well, maybe I can begin, and Mr.
23 O'Riley can add what he would like to. Essentially,
24 the Vancouver -- the Lower Mainland/Vancouver Island
25 region is like an electricity island. And it's got
26 the bulk of our load is located in it, and yet the

1 resources that are used to supply it are very remote,
2 and they're brought to it by a series of big large
3 bulk transmission lines, and those lines have reached
4 the point where they're creating constraints on the
5 ability of the resources to get to the load centre, or
6 that electricity island that I referred to. And so,
7 so when it says "peak critical" or "capacity
8 critical", that's really what it's referring to.

9 MR. BERTSCH: Q: And what is the effect? Does it mean
10 outages? Does it mean -- what does it mean in actual
11 terms?

12 MR. MATHESON: A: Well, I think it means that if there
13 are -- yeah, if there were outages in the Peace or the
14 Columbia areas, that we would be constrained from
15 providing other resources, or if there were
16 transmission outages, that it would be more difficult
17 to supply that load.

18 MR. BERTSCH: Q: So you may have higher percentage of
19 outages, that type of thing. Is that the answer?

20 MR. MATHESON: A: No, it's not related to the adequacy
21 of the system itself, as much as it's related to the
22 ability to get that system to respond to outages and
23 critical events.

24 MR. BERTSCH: Q: Right. To dealing with the N-minus-1.

25 MR. MATHESON: A: Essentially.

26 MR. BERTSCH: Q: And did you, Mr. O'Riley, have any --

1 MR. O'RILEY: A: I don't have anything to add. I just
2 -- one comment. The Island Cogeneration plant would
3 also be included in that list of coastal area
4 generation.

5 MR. BERTSCH: Q: In that mix.

6 MR. O'RILEY: A: As a firm resource. I see it on the
7 list here.

8 MR. BERTSCH: Q: Okay. And in there, there is a
9 mention of 300 megawatts in fiscal 2012. And the same
10 question, given that this information as I understand
11 -- this was written back in June, 2008, is that
12 correct?

13 **Proceeding Time 1:45 P.M. T50**

14 MR. MATHESON: A: Yes, you're correct, it was written
15 in 2008.

16 MR. BERTSCH: Q: Given it's now February 2009 with a
17 lot of changes that have occurred since that time,
18 would that statement be different that 300 megawatts
19 in fiscal 2012 is -- would you categorize that
20 differently today, or would you reference it the same
21 way as you've done here?

22 MR. MATHESON: A: I'd reference it the same way. The
23 load -- I mean the one thing that would impact it, of
24 course, would be increased load growth, and I don't
25 think we've seen enough of that over the intervening
26 six months or so to cause us to say that the number is

1 changed or grown by any appreciable amount. The whole
2 discussion really, I think, highlights the importance
3 of Burrard in this, and that is that as the system --
4 as our load continues to grow and our resources get
5 more constrained from being able to meet that load,
6 Burrard becomes more important to us as time goes on.

7 MR. BERTSCH: Q: And by giving that consideration
8 you're also taking into account the latest court case?
9 Is that also part of your input to keeping that number
10 the same?

11 MR. MATHESON: A: You're referring to the court case on
12 ILM?

13 MR. BERTSCH: Q: ILM, yeah.

14 MR. MATHESON: A: Well, what I just described to you is
15 not -- essentially doesn't take into the additional
16 risks that that court case might represent. It's a
17 physical fact that our load lives in an electricity
18 island that is served by a number of very important
19 transmission lines. The extent to which we can build
20 new transmission to serve growing load in our load
21 centre is put at risk, I think, by court decisions
22 such as that. And that's the relevance of that court
23 decision.

24 MR. O'RILEY: A: Again, the court decision, we believe,
25 extends to the scheduled risk on the project, and
26 potentially the costs of the project, and that's why

1 we're planning to an in-service date of 2019 for that
2 transmission line, which includes a five-year buffer,
3 really, for a risk buffer.

4 MR. BERTSCH: Q: Okay, if you could -- earlier this
5 morning we had some discussions about Burrard, and Ms.
6 Worth was talking to you about Burrard. I'd like to
7 just follow on on one of her points. If you could
8 take a look at Exhibit B-4, BCUC IR 2.215.2, I don't
9 know who this is directed to. Mr. O'Riley. If you
10 take a look at the last sentence in the first
11 paragraph, it says:

12 "B.C. Hydro further submits that it
13 considers 4,000 gigawatt hours per year
14 reliance to incur marginally more risk
15 beyond 3,000 gigawatt hours per year."

16 How would you define risk in that sentence?

17 MR. O'RILEY: A: Well, I think of risk in terms of the
18 probability and the consequence of the risk, and you
19 have to really look at them separately. Part of the
20 reason for looking at them separately is sometimes the
21 consequences of the risk are so great you don't want
22 to expose yourself to the probability of that risk.
23 And our belief is that by shifting from 3,000 to 4,000
24 gigawatt hours, we're putting at risk our social
25 licence to rely on the project for 3,000 gigawatt
26 hours, which --

1 MR. BERTSCH: Q: Does that risk include the social --
2 the risk associated to the social licence?

3 MR. O'RILEY: A: The risk refers to not -- the risk
4 refers to losing -- we believe we have a social
5 licence for 3,000. It's not for sure, but we believe
6 we have one. We believe that there's a risk that in
7 the course of pushing for a higher reliance on
8 Burrard, we could lose that social licence and end up
9 with a much smaller reliance for energy and I think
10 you can do the math on that, and it's a very, very
11 significant cost for ratepayers.

12 **Proceeding Time 1:50 p.m. T51**

13 MR. BERTSCH: Q: But I'm now triggering on the word
14 "marginal", and this seems to be different than what
15 was talked about earlier, being -- going from 3,000 to
16 4,000 didn't seem to be a marginal -- more risk. And
17 I'm trying to -- if you could just explain what it
18 says here about marginal more risk from 3,000 to 4,000
19 and corresponding to what has been talked in the last
20 couple of days about that.

21 MR. O'RILEY: A: And what I think we're trying to do is
22 to separate the discussion of probability and
23 consequences, like to disaggregate the risk into
24 probability and consequences. And I was speaking to
25 the consequence -- potential consequence of that risk
26 is what I characterized as, you know, based on

1 extrapolating from the modeling in BCUC 1.102.2, I
2 believe. Was potentially a \$900 million cost, if we
3 lose our social licence at 3,000 and get pushed down
4 to 600 gigawatt-hours.

5 MR. BERTSCH: Q: So it's like saying that there is
6 marginally more risk, but the consequences of taking
7 on that marginally more risk is a bigger consequence?
8 Is that a good summary?

9 MR. O'RILEY: A: Yeah, that's what I'm saying. Yeah.
10 I mean, you can debate the probability. Probabilities
11 are really hard to debate, and qualitative terms like
12 low, medium and high, and moderate or marginal, are
13 also hard to debate. We can get really clear on what
14 the consequences are. That's usually when we're
15 talking about really serious risks in our company, you
16 fall back on, what are the consequences and are you
17 willing to take those consequences? And I think the
18 consequences from an economic perspective of falling
19 back to 600 gigawatt hours, because we lose that
20 social licence, the consequences are quite serious in
21 dollar terms.

22 And we just want to clarify, the -- we do
23 believe we have the social licence at 600 for peaking,
24 600 gigawatt hours, and that we could achieve the
25 social licence at 3,000 with some risk, and I think I
26 may have said we have the social licence at 3,000 with

1 some risk. So, a subtle difference there, but I just
2 want to clarify that for the record.

3 MR. BERTSCH: Okay, thank you very much, those are all my
4 questions. I appreciate it.

5 THE CHAIRPERSON: Mr. Bertsch.

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

7 MR. OULTON: Q: Good afternoon, Mr. Chairman,
8 Commissioners. Good afternoon, panel.

9 Those of you on the panel that don't know,
10 I'm Mark Oulton. I'm appearing on behalf of COPE.
11 And I'd like to start off by building on some
12 questions that were asked by my friends this morning,
13 and in that regard I'd ask that you turn -- you may
14 already have it before you -- to Table 2-10 from the
15 evidentiary update. It's at page 29 of Exhibit B-10.

16 Now, I'm not sure who my question should go
17 to, so I'll just invite whichever one of you it's
18 appropriate to respond.

19 I'm correct that this table sets out the
20 revised base resource plan underlying the LTAP, is
21 that correct?

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

23 MR. OULTON: Q: And if we look at the supply that is
24 noted in this table, am I correct that in terms of
25 need, assuming an average water year, Burrard is going
26 to be the last supply option that's going to be

1 invoked by B.C. Hydro to meet its needs?

2 MR. MATHESON: A: You're speaking now in an operational
3 sense? This is a planning table you're speaking
4 about, how we would operate the plant?

5 **Proceeding Time 1:55 p.m. T52**

6 MR. OULTON: Q: Absolutely.

7 MR. MATHESON: A: Make operational decisions?

8 MR. OULTON: Q: Yeah, when you make an operational
9 decision based on these sources of supply, Burrard is
10 the last one that you're going to ramp up to meet
11 needs. Is that fair to say?

12 MR. O'RILEY: A: Generally that's probably true. In
13 practice it's more complicated than that because we
14 make decisions, for example, on how much to draft a
15 reservoir, and we may run Burrard before we draft a
16 reservoir below a certain level, just based on the
17 economics of that. So I think generally I would agree
18 with what you said.

19 MR. OULTON: Q: And if we leave aside -- and I think
20 when you're talking about economics you're talking
21 about optimizing the value of the system. Is that a
22 fair way to characterize it? I think that's a phrase
23 that's been used.

24 MR. O'RILEY: A: Yes, and that's how we -- that's the
25 basis upon which we make decisions in the operating
26 timeframe.

1 MR. OULTON: Q: And I mean, my question is more along
2 if you look at the characteristics of the supply, it's
3 fair to say that the EPAs and the Call results, those
4 are all take or pay assets. B.C. Hydro has to take
5 that power, or if it doesn't it still has to pay for
6 it, correct?

7 MR. O'RILEY: A: Generally. I mean, Island Cogen is
8 not a take or pay contract. It's a -- you know, we
9 have the flexibility to take or not.

10 MR. OULTON: Q: All right, but leaving aside Island
11 Cogen, the bio-energy Call, F2006 Call, the Alcan EPA,
12 those are all take or pay.

13 MR. O'RILEY: A: Yes, that's generally, yeah.

14 MR. OULTON: Q: And B.C. Hydro's Heritage Assets, of
15 course, are priority Call assets by virtue of the
16 Heritage Contract, correct?

17 MR. O'RILEY: A: Some of them have more flexibility
18 than others, and we make a choice on -- we have a
19 choice with many of them because they're dispatchable
20 when we generate and when we don't.

21 MR. OULTON: Q: Right, but in general terms, I'm just
22 following up, generally speaking Burrard is the last
23 one that comes on line, usually motivated by economic
24 circumstances, correct?

25 MR. O'RILEY: A: Yes.

26 MR. OULTON: Q: And so as the need is fulfilled --

1 sorry, I'll go on here.

2 If you look at the mid-load forecast in
3 Table 2-10, there's a surplus indicated from 2016
4 onwards. Do you see that?

5 MR. MATHESON: A: You're looking now at the bottom
6 line, the mid-load forecast surplus deficit?

7 MR. OULTON: Q: Yes.

8 MR. MATHESON: A: After which year, sorry?

9 MR. OULTON: Q: From 2016 onwards.

10 MR. MATHESON: A: Yes.

11 MR. OULTON: Q: B.C. Hydro is forecasting a surplus of
12 varying sizes, correct?

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

14 MR. OULTON: Q: And in fact in the latter part of the
15 period covered by the LTAP, it's projected that
16 there'll be a surplus of 3,000 gigawatt hours per year
17 or greater, correct?

18 MR. MATHESON: A: Well, we've put that amount in there
19 because, of course, that's pursuant to the requirement
20 under Special Direction 10 to obtain by the year 2026
21 3,000 gigawatt hours of insurance.

22 MR. OULTON: Q: But if you have 3,000 in surplus,
23 there'd be no expectation to run Burrard anywhere near
24 3,000 in those years, correct?

25 MR. O'RILEY: A: Well, again, this is a planning view,
26 so this is not an operational view. So this is what

1 it is, a planning view with the hydro in at critical
2 water. You know, we don't expect to have critical
3 water in all those years either. So this is a
4 planning view of the system for that period.

5 MR. MATHESON: A: And I think you just heard the
6 discussion that we just finished having with Mr.
7 Bertsch that talked about the role of Burrard in the
8 event that there are constraints on the big system
9 operationally, getting energy from our major resources
10 in the interior of the province to the load centre.
11 So I mean, depending on the circumstances, and that's
12 a long way out, we could find that Burrard's role is
13 quite -- something that we can't foresee even today.
14 So it's hard to sort of make those definitive
15 statements 20 years out about how we might operate
16 Burrard.

17 MR. OULTON: Q: But your current plans are not to be
18 operating Burrard on a day-to-day basis at 3,000
19 gigawatt hours in 2028, are they?

20 MR. O'RILEY: A: Well, we can talk about the plan for
21 Burrard. Burrard -- we will rely -- our proposal is
22 that we rely on it for 3,000 gigawatt hours, and that
23 means in lower water years, when the -- well, we will
24 use it periodically, as we do today, for capacity and
25 short-term -- to manage short-term constraints in the
26 system, and I talked about a few examples of that. In

1 terms of energy dispatch, we can expect in lower water
2 years and in market conditions where the prices are
3 adverse, which there's a connection between those two
4 things happening, that it will tend to operate at
5 higher levels. And that's what came out in our
6 scenario 3-B, which we provided to RWDI to calculate
7 the term in the social licence at -- to make the
8 social licence assessment at higher volumes.

9 **Proceeding Time 2:00 p.m. T53**

10 MR. OULTON: Q: Would you agree with me that whether
11 we're talking about reliance for planning purposes on
12 a capability of 3,000 gigawatt hours per year or 6,000
13 gigawatt-hours per year, in an average water year you
14 wouldn't expect Burrard to operate anywhere near those
15 levels, is that correct?

16 MR. O'RILEY: A: In an average water year, we would
17 have about 4,000 gigawatt hours of non-firm Heritage
18 hydro energy. We talked about that this morning, and
19 some non-firm IPP energy that would tend to offset the
20 planning reliance on Burrard. I think -- I wouldn't
21 say -- what I would say in general is that the more we
22 rely on Burrard, whether it's 3,000 or 6,000, there
23 will be a tendency over time to generate more from
24 Burrard. So I don't think that the operational use of
25 Burrard is independent of how much we plan on it for.

26 MR. OULTON: Q: I heard you say that this morning, Mr.

1 O'Riley, and I will come back to it, because I've got
2 some specific questions flowing out of some of the IRs
3 on that. But for the purposes of my question right
4 now, in an average water year, you'd expect the
5 majority of Burrard's capability to be displaced by
6 the Heritage non-firm or other non-firm or market
7 resources. Is that fair to say?

8 MR. O'RILEY: A: Well, we would certainly -- in an
9 average water year, we will certainly, if we're
10 relying on Burrard for 3,000 gigawatt hours, we will
11 certainly use that non-firm hydro before we use
12 Burrard.

13 MR. OULTON: Q: Similarly, hypothetically speaking, if
14 you were relying on Burrard for 6,000 gigawatt hours
15 per year --

16 MR. O'RILEY: A: Well, then there would be a net, if
17 you -- because we only have -- in an average water
18 year, we have 4,000 gigawatt hours of non-firm hydro.
19 There would be a 2,000 gigawatt hour short-fall and
20 then, whether we ran Burrard or not would depend on
21 the market prices prevailing. So you could envision a
22 circumstance, and this has happened in the past, where
23 the market heat rates, or the relationship between
24 power and gas prices was such that we would run
25 Burrard in that time period, in an average year, just
26 to meet the load.

1 MR. OULTON: Q: I'm not saying that you wouldn't run
2 Burrard either in the 3,000 or 6,000 gigawatt hour
3 years. I'm talking about, you won't come anywhere
4 near that limit in an average water year, the 3,000 --
5 3,000, if you can displace it with 4,000 gigawatt-
6 hours of non-firm Heritage resource, you may not
7 operate it above system reliability and support
8 levels. Correct?

9 MR. O'RILEY: A: Yes. Okay. Sure. I misunderstood
10 your question.

11 MR. OULTON: Q: Fine. So, carrying -- I think we were
12 speaking over top of one another there, but just so my
13 question is clear on the record, if you were relying
14 on Burrard for 3,000 gigawatt hours per year in an
15 average water year, you wouldn't expect Burrard to run
16 above system reliability and support levels, which is
17 about 600 gigawatt hours. Is that correct?

18 MR. O'RILEY: A: Yes.

19 MR. OULTON: Q: All right. Similarly, in an average
20 water year, if you were relying on Burrard for 6,000
21 gigawatt hours for year for planning purposes, you
22 wouldn't expect its operation to go much above 2,000,
23 if it even got to that, because there are other
24 resources that you may well use to displace Burrard,
25 correct?

26 MR. O'RILEY: A: Yes.

1 MR. OULTON: Q: In fact, the only times that you would
2 expect the operation of Burrard to come anywhere near
3 its planning level, if it was set at 3,000 gigawatt
4 hours, is in a critical water year. Is that fair to
5 say?

6 MR. O'RILEY: A: Critical and low water years. I mean,
7 there's low water years that may approach critical.

8 MR. OULTON: Q: All right. And --

9 MR. O'RILEY: A: There's a range of water years, I
10 guess. And in lower water years, you could expect to
11 -- with 3,000 gigawatt hours of planning reliance, you
12 could expect to run it for that amount.

13 MR. OULTON: Q: All right. How often would you say
14 those low water years would be expected, in a 60-year
15 period?

16 MR. O'RILEY: A: Well, if you go back to Scenario 3(b),
17 which is -- I think it's Table -- it's shown -- Table
18 5.8 --

19 MR. OULTON: Q: This is 5.8 from Chapter 5?

20 MR. O'RILEY: A: From Chapter 5, sorry. And it's page
21 5.28. And it -- I mean, in this scenario, this is
22 when we were relying on it for 6,000 gigawatt hours,
23 in this scenario. It would run at that 6,000 for a
24 large part but not all of the critical water years,
25 and there would be a number of years where it ran over
26 -- occasionally where it would run over 5,000, and

1 MR. O'RILEY: A: Well, we're assessing the capability
2 assuming it produces electricity. What we can't do or
3 we don't feel we can do is construct an argument in
4 favour of its capability that in fact relies upon it
5 not running.

6 MR. OULTON: Q: Yet you'll agree with me that B.C.
7 Hydro's intention, even after 2016, is to displace
8 Burrard with market power where it optimizes the value
9 of the system, correct?

10 MR. O'RILEY: A: Our intent is to, as we do today,
11 optimize the decision-making, and we will make those
12 decisions on an economic basis trading off, and we'll
13 use non-firm Heritage energy if we have it, non-firm
14 IPP energy, market purchases or Burrard, whatever is
15 the lowest cost, subject to our various liability and
16 environmental constraints.

17 MR. OULTON: Q: Yes, so your intention going forward is
18 to operate Burrard in the same manner that you do
19 today, correct?

20 MR. O'RILEY: A: Our intent is to make the decisions in
21 the same manner. The operation will flow from those
22 decisions. I can't predict what the prices will be in
23 2016, so I don't know whether, in the course of making
24 the decisions on the same basis, we'll get a different
25 operation.

26 MR. OULTON: Q: You couldn't say with certainty whether

1 Special Direction 10 was there or not, whether or not
2 your decision-making process would result in the exact
3 same result in any given year. That's what you're
4 saying.

5 MR. O'RILEY: A: Yeah. You took my statement one step
6 further, I think, than I took it, so.

7 MR. OULTON: Q: But I think you agreed with me that
8 whatever the level Burrard is being relied upon for
9 planning purposes, whether it's 3,000, 4,000 or 6,000,
10 you're only going to approach those levels in, I think
11 you said low or critical water years, correct?

12 MR. O'RILEY: A: Yes.

13 MR. OULTON: Q: And if we look at 6,000 and if you look
14 at -- I think it was Figure 5-8, it showed you only
15 went above 5,000 four years. That's, as I understand
16 it, the assumption that was given to RWI is critical
17 water flows will happen four out of every 60 years,
18 based on historic experience, is that correct?

19 MR. O'RILEY: A: That was the scenario we gave them. I
20 mean that scenario used actual water years over that
21 time period, 1942 to -- 1940 to two thousand and --

22 MR. OULTON: Q: Are you able to tell me what the
23 statistical probability is of a critical water year
24 occurring between 2016 and 2028?

25 MR. O'RILEY: A: Well, a critical water year is a
26 grouping of years, right? It's not one year. It's a

1 period of low inflows that extends over time. The
2 reason we look at that is because we have the ability
3 to draft large hydro reservoirs. We have the record
4 that it occurred four in sixty some-odd years. It's
5 not as simple as saying that's a 1 in 15 and then
6 applying that to the --

7 MR. OULTON: Q: And I recognize that. That's when I
8 made the reference to the statistical probabilities.
9 I take it from your answer you can't say with any
10 certainty what the probability is.

11 MR. O'RILEY: A: And that's a relatively short record
12 upon which to make that kind of calculation, so I
13 can't make that kind of calculation for you.

14 THE CHAIRPERSON: Let me hop in here, Mr. Oulton, if
15 you'll excuse me. I did try and canvass this question
16 yesterday with Panel 1, and probably put my own
17 evidence on the record that the 42,600 was P-99 or P-
18 100, I think. I do invite you to canvass with your
19 colleagues, and if you can come up with a better
20 number, then --

21 **Proceeding Time 2:11 p.m. T55**

22 MR. MATHESON: A: In terms of probability?

23 THE CHAIRPERSON: Yeah.

24 MR. O'RILEY: A: I wouldn't say it's definitely not P-
25 100, because it happened four years out of 60.

26 THE CHAIRPERSON: I understand that.

1 MR. O'RILEY: A: So that's not --

2 THE CHAIRPERSON: So is it -- but what I want to know, is
3 it P-90, is it P-93, is it P-80? Can somebody tell me
4 --

5 MR. O'RILEY: A: I think we have that -- we probably
6 can get that calculation.

7 THE CHAIRPERSON: I would ask you to present it if you
8 have it, please.

9 MR. O'RILEY: A: Sure. I think that's an important
10 number.

11 **Information Request**

12 THE CHAIRPERSON: Sorry, Mr. Oulton.

13 MR. OULTON: No, you went where I was hoping to end up,
14 so thank you, Mr. Chairman.

15 MR. OULTON: Q: Now, staying with the evidentiary
16 update -- sorry, staying with Table 10 for a moment,
17 as a result of the changes that were made to this
18 resource plan in the evidentiary update, you're now
19 forecasting a short-term energy deficit in 2013 and
20 2014. That's correct?

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

22 MR. OULTON: Q: And if you turn to page 33 of Exhibit
23 B-10, I believe it sets out what B.C. Hydro's plans
24 are for addressing that deficit, under Section 2.7.1.

25 MR. MATHESON: A: Yes.

26 MR. OULTON: Q: And there's essentially three action

1 items that B.C. Hydro proposes, and the first is to
2 negotiate early delivery of IPP power under the Clean
3 Call where appropriate. Do you see that?

4 MR. MATHESON: A: Yes.

5 MR. OULTON: Q: What criteria does B.C. Hydro intend to
6 use in determining whether it's appropriate to
7 negotiate such deliveries?

8 MR. GODSOE: That's a fair question, but it would be
9 addressed to Panel 4. We're getting to the base
10 resource plan now.

11 MR. OULTON: Q: I had it on both lists, I just wasn't
12 sure if this panel would be able to answer.

13 The second is to undertake to advance its
14 DSM plans, and then the last is to evaluate any other
15 power acquisition opportunity that may present
16 themselves. Do you see that?

17 MR. MATHESON: A: Yes.

18 MR. OULTON: Q: You'd agree that those are the three
19 actions that B.C. Hydro is intending to take?

20 MR. MATHESON: A: Well, we're not intending to take
21 them. They're the actions that we could take, should
22 the circumstances present themselves.

23 MR. OULTON: Q: And by that, you mean whether or not
24 the deficit actually appears to be becoming a reality,
25 I guess?

26 MR. MATHESON: A: Yes.

1 MR. OULTON: Q: Now, you'd agree with me that if
2 Burrard was -- if reliance on Burrard was maintained
3 at 6,000 gigawatt hours per year, for planning
4 purposes there would be no forecast deficit in either
5 of those years, let alone any year up to 2016. Under
6 high, low or mid.

7 MR. MATHESON: A: Yes, I'd agree with that. There would
8 be very large surpluses, in fact.

9 MR. OULTON: Q: Indeed. And we were discussing earlier
10 about whether or not Burrard would actually operate at
11 those levels, and I'll come back to that.

12 Now, the final action that was noted was to
13 evaluate any other power acquisition opportunities.
14 You'd agree with me that the self-sufficiency
15 requirement in SD 10 is not in force in 2015, correct?

16 MR. MATHESON: A: Up to 2015, that's correct.

17 MR. OULTON: Q: Yes. So, B.C. Hydro would be free,
18 subject to transmission and availability constraints,
19 to make up any potential deficit in those years using
20 the electricity market, correct?

21 MR. MATHESON: A: Well, we would not be legally
22 constrained from doing so, that is -- that's right.

23 MR. OULTON: Q: It's a power acquisition opportunity
24 that would be available to B.C. Hydro in those years.

25 MR. MATHESON: A: Yes.

26 MR. OULTON: Q: And in particular you're aware that

1 MR. O'RILEY: A: Yes, I'm aware of that.

2 MR. OULTON: Q: And in that regard, the futures market
3 is a particular power acquisition opportunity that
4 would be available to B.C. Hydro to address potential
5 deficits in those years. Is that correct?

6 MR. O'RILEY: A: Well, we already transact in the
7 market today, and we do that to acquire shortfalls,
8 and in the case we had a surplus we would transact.
9 And we make those transactions through Powerex, and we
10 actually transact based on the spot price. There's a
11 provision in that transfer pricing agreement, and that
12 transfer pricing agreement has been filed with the
13 Commission at least once if not several times.

14 The provision for buying forward blocks of
15 power is really through the hedging mechanism in that
16 agreement, and that was the subject of some debate in
17 the RRA hearing and there was fairly strong views, I
18 guess, among various intervenors about the benefits of
19 hedging. But that is the mechanism by which B.C.
20 Hydro can buy short-term power in the market.

21 MR. OULTON: Q: To your knowledge has B.C. Hydro
22 investigated or assessed the opportunity to buy firm
23 electricity in the futures market to address the
24 deficits in -- the projected deficits in 2013 and
25 2014, at present? Through that hedging mechanism.

26 MR. MATHESON: A: Well, we haven't really -- I mean, I

1 think the information requests that we had out earlier
2 set out quite specifically that we'll first assess
3 whether or not the load looks as though it will
4 require us to act on behalf of those deficits, and
5 then we'll look at the opportunities available to us
6 and we'll pick the ones that make the most sense. But
7 in terms of right now, whether we've gone and explored
8 those markets to purchase something in a timeframe
9 that sits five years out, four years out, no, we
10 haven't.

11 MR. O'RILEY: A: I should say that we are presently
12 having some discussions with Teck Cominco about buying
13 surplus power from the Waneta Dam, and that would
14 resolve the issue in those years if that came to
15 fruition. So we're not in a position or a state where
16 we can talk more about that, but that would be one
17 resolution there.

18 So we're not at present looking to buy
19 power in the market to offset that.

20 MR. OULTON: Q: Right, but you are taking some
21 initiative to look at other opportunities. Is that
22 correct?

23 MR. O'RILEY: A: We are.

24 MR. OULTON: Q: But you aren't looking at the forward
25 market at the --

26 MR. O'RILEY: A: We look at the forward market in the

1 context of those opportunities, so we're closely
2 connected to Powerex in terms of what is the market
3 price with respect to those opportunities. It's part
4 of the decision-making that goes around.

5 MR. OULTON: Q: In response to BCUC IR 3.270.1, B.C.
6 Hydro advised that it was aware as recently as
7 December 10, 2008, some 12 days prior to delivering
8 the evidentiary update, that the price for a five-year
9 forward firm 7 by 24, which I assume means any day,
10 any time, electricity product at mid-C was
11 approximately 63 to 64 dollars per megawatt hour. Are
12 you aware to that?

13 MR. MATHESON: A: Can you point us to a specific
14 passage in the IR response?

15 MR. OULTON: Q: Certainly. It's BCUC IR 3.270.1 and
16 it's page 3.

17 MR. O'RILEY: A: Last paragraph, page 3, we've found
18 it.

19 MR. MATHESON: A: Yeah, we've got it.

20 MR. OULTON: Q: Would you agree with me that 63 to 64
21 dollars per megawatt hour is a favourable price for
22 firm electricity?

23 MR. MATHESON: A: Well, I think there was some
24 discussion with Ms. Van Ruyven on this, and it depends
25 on the timeframe and the --

26 MR. OULTON: Q: As I understand a five-year forward

1 contract, that would mean you're paying -- you're
2 agreeing today to pay \$63 for power delivered five
3 years from now.

4 MR. MATHESON: A: Yes.

5 MR. OULTON: Q: At December 10, 2008, that would be in
6 the middle of the period that was showing a projected
7 deficit of 200 to 500 gigawatt hours per year. Is
8 that correct?

9 MR. O'RILEY: A: The period coincides, yes.

10 MR. MATHESON: A: Yeah, that's correct.

11 MR. OULTON: Q: Yes, and I'm -- \$63 per megawatt hour
12 is a favourable price today for electricity.

13 MR. O'RILEY: A: Relative to what?

14 MR. OULTON: Q: To the average IPP power that B.C.
15 Hydro is going to be bringing on board in the next
16 three years.

17 **Proceeding Time 2:21 p.m. T57**

18 MR. O'RILEY: A: But we're not -- I guess the go-
19 forward decision is, what do we do, if anything, with
20 respect to that gap? So, you'd have to compare that
21 to other things that you're doing to meet that gap.

22 MR. MATHESON: A: I mean, the gap is a two-year
23 shortage, a very small one in a two-year time frame.
24 Comparing it to IPPs that have typical contracts of
25 20- to 30-year time spans isn't all that useful.

26 MR. OULTON: Q: There's no discussion about disrupting

1 existing arrangements or contracts you've already
2 entered into. This is a projected shortfall based on
3 the supply assumptions that have been made in this
4 LTAP. Correct? This is an opportunity to acquire
5 power to address that deficit at what is a favourable
6 price today, I would suggest. Do you disagree?

7 MR. O'RILEY: A: Well, I think we've laid out some
8 alternatives about what we might do, and I described
9 one that we're working on. We may do nothing. It's
10 not that much of a -- it's not a very big number 200
11 gigawatt hours.

12 MR. MATHESON: A: I mean -- it wouldn't -- let me put
13 it this way. It wouldn't be all that favourable if it
14 turns out that all we had to do was monitor our load
15 in the -- and a decrease in the load forecast took
16 care of it for us. Then it would be decidedly
17 unfavourable.

18 MR. OULTON: Q: And if the market price rises such
19 that, in 2013 and 2014 -- I believe the forecast is
20 that it will be higher than \$63, in the pricing
21 forecast, which I think is a different panel, if I'm
22 not mistaken, Mr. Godsoe, but my understanding is, is
23 B.C. Hydro's own price projections for the market show
24 a price that is going to be higher than \$63 to \$64.

25 MR. MATHESON: A: Yeah. I mean, we're not prepared at
26 this time to go out and sign a forward, or make a deal

1 on a forward, until we've had a little more time has
2 passed, and we can assess what may occur in a very,
3 you know, volatile period as far as our load is
4 concerned. And then we'll go forward and make some
5 decisions, based on some of the options we have that
6 we've laid out in this information response.

7 MR. OULTON: Q: So it's fair to say that, to date, B.C.
8 Hydro hasn't taken many steps to evaluate the
9 opportunity for acquiring firm power today in the
10 futures market to cover that deficit. It's something
11 you're going to wait and see.

12 MR. MATHESON: A: Yeah, I think that's fair.

13 MR. OULTON: Q: And the price that's noted in BCUC
14 3.270.1 was December 10, and the price does have a
15 habit of fluctuating. Are you aware of the current
16 price available for purchases of firm power of a
17 similar type contract to what's described in that IR
18 response?

19 MR. MATHESON: A: I'm not, no.

20 MR. OULTON: Q: Is that something that you could find
21 out? Or is that something for another panel?

22 MR. GODSOE: I guess first help me understand how it's
23 relevant, and then maybe it's better taken up with
24 Panel 3, or maybe it's better taken up as an
25 undertaking.

26 MR. OULTON: Well, the LTAP is designed to talk about

1 B.C. Hydro's plans moving forward. There's been an
2 evidentiary update that indicates that there is a
3 projected shortfall, and I'm trying to assess the
4 options that B.C. Hydro has considered or could
5 consider.

6 MR. GODSOE: I understand, but I think you heard from
7 this panel that it's a wait-and-see attitude, and the
8 load might take care of itself. So I'm just probing a
9 little bit further as to how this price information is
10 going to help us assess that.

11 MR. OULTON: One of the issues in my submission in
12 looking at whether or not the LTAP ought to be
13 approved and the like is looking at matters of public
14 interest and the like, and the reasonableness of B.C.
15 Hydro's approach to some of its planning decisions, I
16 think is relevant. And in that regard, I think the
17 price of these forward future contracts to meet the
18 projected deficits is a relevant matter.

19 THE CHAIRPERSON: Well, Mr. Oulton, you have a price at
20 December. I mean, are you trying to demonstrate or
21 you're trying to ascertain if the market is volatile,
22 or relatively flat? Or what?

23 MR. OULTON: I'm happy to -- I am content with \$63 to
24 \$64, because I think that's a very favourable
25 response.

26 THE CHAIRPERSON: I think you --

1 MR. OULTON: I just wanted to give B.C. Hydro the
2 opportunity, if the price has gone up, to have a more
3 substantive response to any submissions I may make
4 regarding that price.

5 THE CHAIRPERSON: Does that seem reasonable to you, Mr.
6 Godsoe?

7 MR. GODSOE: Why don't I take that under advisement?

8 THE CHAIRPERSON: Very good. Mr. Oulton, it's -- are you
9 ready to break? Or --

10 MR. OULTON: I am content to break. This is a good time.

11 THE CHAIRPERSON: Very good. We'll break for 15 minutes.

12 **(PROCEEDINGS ADJOURNED AT 2:27 P.M.)**

13 **(PROCEEDINGS RESUMED AT 2:43 P.M.)** **T58/59**

14 THE CHAIRPERSON: Please be seated.

15 Nothing? Okay, Mr. Oulton, please
16 continue.

17 MR. O'RILEY: A: Mr. Oulton, perhaps I could clarify a
18 question answer we gave to a question, and it really
19 relates to this issue of increasing our reliance on
20 market prior to 2016. And I would just like to point
21 out that we do have planning reliability criteria that
22 have been endorsed by the Commission in prior
23 integrated electricity planning exercises, and that
24 includes 2500 gigawatt hours of market allowance. And
25 I would reiterate that we are fully utilizing that
26 allowance in the time period in question, the years in

1 which there is this gap, and that to be putting an
2 increased reliance on market in those years would in
3 fact be a change to those planning criteria. So I
4 think that's a little more significant issue than a
5 tactical change in portfolio because you like the
6 price. And we would recommend that considerable
7 thought go into that before we made such change.
8 Thank you.

9 MR. OULTON: Q: You'd agree with me that the planning
10 criteria don't preclude B.C. Hydro from going beyond
11 the 2500 gigawatt hours of market allowance in any
12 given year to make up the shortfall, is that correct?

13 MR. O'RILEY: A: The planning criteria constrain our
14 ability to plan to rely on market in a particular year
15 will, by what we have to do, by -- to keep the lights
16 on in the province.

17 MR. OULTON: Q: Right. So if I take your point on the
18 planning criteria, if we look at Table 2-10, what
19 you're saying is the planning criteria prevent you
20 from including a line that says "firm forward market
21 contract, 500 gigawatt hours, for 2013 and 2014".

22 MR. O'RILEY: A: Yes.

23 MR. OULTON: Q: Is that fair to say?

24 MR. O'RILEY: A: Yeah.

25 MR. OULTON: Q: But operationally, you could decide
26 today to secure a price for power in those years on a

1 forward future contract. There's nothing precluding
2 you from doing that.

3 MR. MATHESON: A: Operationally though, it's probably
4 -- there's a key word there. I don't know that -- we
5 could make an argument that operationally five years
6 ahead of time, we're making a decision and that
7 wouldn't be construed in a planning timeframe.

8 MR. O'RILEY: A: And I'm not sure that such an action
9 would be consistent with the planning criteria. You
10 know, it would be -- just like we don't want to
11 subvert SD 10 beyond 2016, I don't think we want to
12 find ways to subvert our planning criteria prior to
13 that.

14 MR. OULTON: Q: You'd agree me that it's in B.C.
15 Hydro's interest, as measure of trying to maintain
16 some control over its operating cost, to secure power
17 at the lowest cost that it can? There are other
18 factors, but that's one factor that comes to play,
19 correct?

20 MR. O'RILEY: A: Well, typically we treat the
21 reliability planning criteria as constraints, and
22 optimize within that.

23 MR. MATHESON: A: The thing is, we buy and sell energy
24 every day on the spot market to optimize the big
25 system. So it seems inconceivable to me that in
26 either of these years, that we wouldn't be able to

1 find some point in time where we could buy a little
2 bit more during off-peak hours or light-load hours,
3 and make up that difference. I'm not saying that's
4 what we'd do, but it just seems it's -- with a load of
5 almost 60,000 gigawatt hours, to think that we
6 couldn't somehow, with reasonable pricing, make up
7 those differences of 200 and 500 respectively, on a
8 60,000 gigawatt hour load, seems sort of hard to
9 imagine.

10 **Proceeding Time 2:47 p.m. T60**

11 MR. OULTON: Q: I think this is an issue I'll bring up
12 with the panel that deals with the price forecasts.

13 MR. GODSOE: Can I just get a little bit of understanding
14 of what issue you'd like to raise? Just so I ensure
15 your questions are appropriately directed?

16 MR. OULTON: Well, I -- this panel just said that they
17 buy and sell power every day, and they don't see how
18 they won't be able to find that power, and he used the
19 phrase "at reasonable prices", to make up that
20 shortfall in 2013. And I'm going -- what I'll explore
21 is whether or not reasonable prices, what that means
22 in a context when they could buy today for \$63 to \$64
23 per megawatt hour.

24 MR. GODSOE: So let me help you out, I think. I think
25 the reliability criteria debate is absolutely for this
26 panel, and I think you've heard from them on that.

1 The market forecast is for Panel 3. And I guess I'm
2 struggling with the last part, the 63 to 64, I think
3 you started here -- just give me a minute. I want to
4 make sure you get your question answered.

5 I think the market forecast and the forward
6 market contract, you could put to Panel 3. But the
7 reliability criteria, this is the right group of
8 folks.

9 MR. OULTON: Q: Mr. O'Riley, I just want to make sure I
10 understand the clarification that you gave to your
11 evidence at the -- when we resumed after the break.
12 Are you saying that, in your -- in B.C. Hydro's view
13 the planning criteria preclude you from entering into
14 any forward market contracts outside of the 2500
15 gigawatt hours of market allowance?

16 MR. O'RILEY: A: Yes, that is correct. So we could
17 include -- if we decided to lock up, or we wanted to
18 fix a portion of the 2500 gigawatt hours, we could do
19 that, and we would probably do that through our
20 hedging program. But just increasing that 2500
21 arbitrarily to, say, 3500 or 3,000, that would be
22 going outside the planning criteria. And I'm just
23 saying, that's a decision that requires some thought,
24 and pause, and we wouldn't typically make that kind of
25 decision without involving the Commission, and without
26 -- just because we happen to like the price on a

1 particular day.

2 MR. OULTON: Q: And my suggestion was not that the
3 planning criteria need to be changed or modified. If
4 I understand what you're saying, then, it would be
5 open to B.C. Hydro to lock in a forward future
6 contract today, to secure a certain amount of power at
7 \$63 to \$64, assuming that's the -- approximately the
8 price today, for this period where there's a
9 shortfall. In other words, hedging its bets, that if
10 it has to go to the market to get power, in those
11 years, which, given that you're projecting a
12 shortfall, you have other opportunities available to
13 you. Waneta, and others. But in the event that you
14 were going to go to the market in those years, you'd
15 be hedging your bets that \$63 to \$64 today would be
16 less expensive than the price, then. That would still
17 be open to you, correct?

18 MR. O'RILEY: A: It would. I -- it would, subject to
19 the duration limit on our hedging program. We'd
20 probably have to go back to our Board on that, because
21 there's a limit there. And I think it's also subject
22 to the Commission decision on our RRA, and we'll see
23 whether there still is a hedging program after we get
24 that decision.

25 MR. OULTON: Q: Do you know what the limit is on your
26 hedging program?

1 MR. O'RILEY: A: I believe it's three years.

2 MR. OULTON: Q: Turning now to another load resource
3 balance issue, if you could turn to B.C. Hydro
4 response to COPE IR 3.1.4, in Exhibit B-12. Now, this
5 IR is a follow-up to Table 2-10, which is the table we
6 were just looking at, and there are two tables
7 attached to the response. Table 1, if I'm not
8 mistaken, is simply a tabular representation of a
9 question I asked earlier that I believe, Mr. Matheson,
10 you responded to, which is if Burrard was maintained
11 at 6,000 gigawatts per year, there would be no
12 projected deficit in the period covered by the LTAP.

13 **Proceeding Time 2:52 p.m. T61**

14 MR. MATHESON: A: Yes.

15 MR. OULTON: Q: Correct?

16 MR. MATHESON: A: Yes.

17 MR. OULTON: Q: And Table 2 is a similar table, only,
18 as I understand it, the Clean Power Call is taken out,
19 correct?

20 MR. MATHESON: A: Yes.

21 MR. OULTON: Q: And if we look at that table again,
22 maintaining Burrard at 6,000 gigawatts per year means
23 that there's no deficit, at least up till 2016, and if
24 you go on the mid-load forecast going forward as well.

25 MR. MATHESON: A: That's right. By the year fiscal
26 2022, you're down to a fairly skinny deficit of 200.

1 But you're correct, there's no deficit throughout the
2 planning period.

3 MR. OULTON: Q: Sorry, there's a deficit of 200 in
4 2022?

5 MR. MATHESON: A: No, I'm sorry, there's a skinny
6 surplus in 200 in the year fiscal 2022, but there are
7 no deficits in the planning horizon.

8 MR. OULTON: Q: Okay. And I did have one follow-up on
9 this table, just to be fair to B.C. Hydro and my
10 friend. As I understand it, the only difference
11 between Table 1 and Table 2 is Table 2, the clean
12 power -- the amounts for the Clean Power Call were
13 taken out, correct?

14 MR. MATHESON: A: Correct.

15 MR. OULTON: Q: And I haven't checked the math, but
16 over the break when I was looking at this in
17 anticipation of my questioning, I note that starting
18 in 2019, I'm not sure the mid-load surplus actually
19 correlates to that. I may be mistaken, but it appears
20 to me -- because starting in 2019 the Clean Power Call
21 is already up to 2100 gigawatt hours. Do you see that
22 in Table 1?

23 MR. MATHESON: A: Oh.

24 MR. OULTON: Q: Sorry, I'm comparing the two tables,
25 because I think there's an error in Table 2, not
26 that's material to my question but I just want to make

1 sure for the record --

2 MR. MATHESON: A: And you're, you're at fiscal 2019?

3 MR. OULTON: Q: Yeah, in 2019 the only difference

4 between Table 1 and Table 2 should be that 2100

5 gigawatt hours is taken out. And as I do the math,

6 2400 less 2100 is not 500, which is what's indicated

7 in the panel.

8 MR. MATHESON: A: Yes, yeah.

9 MR. OULTON: Q: And I think there's similar errors

10 going forward.

11 MR. MATHESON: A: Okay.

12 MR. OULTON: Q: But the point that I was making is

13 still correct, namely if you take out the Clean Power

14 Call, at least up to 2016, there's still a surplus.

15 Correct? In Table 2?

16 MR. MATHESON: A: I'll say correct and --

17 MR. OULTON: Q: Subject to check.

18 MR. MATHESON: A: -- subject to check, because if there

19 are errors here there may be others.

20 MR. OULTON: Q: Yeah, I haven't seen any in the years

21 leading up to that. I was surprised when I was

22 looking at the two tables because there was a small

23 surplus in Table 1, and if you took 2100 from that I

24 expected to see a deficit and I didn't. Again, not

25 material in my view to my question, but I thought the

26 record should be correct.

1 MR. MATHESON: A: Thank you.

2 MR. OULTON: Q: I'd like to turn now to another issue,
3 one that I'm sure my friend Mr. Godsoe told you would
4 likely be coming, and that's Burrard.

5 MR. O'RILEY: A: I thought we were already dealing with
6 Burrard.

7 MR. OULTON: Q: Well, a different angle, let's say.
8 Now, given that Mr. Godsoe introduced you
9 as the Burrard Panel, I'm assuming you're all familiar
10 with the Burrard Thermal Generating Station?

11 MR. O'RILEY: A: Yes.

12 MR. OULTON: Q: And we heard from Mr. Elton that it's a
13 unique asset of tremendous value, and you'll all agree
14 that Burrard is an asset of considerable significance
15 for B.C. Hydro's operations.

16 MR. O'RILEY: A: Yes.

17 MR. OULTON: Q: And in particular, from a planning
18 perspective, it has a firm energy capability that B.C.
19 Hydro can draw upon if it needs to, correct?

20 MR. O'RILEY: A: Yes.

21 MR. OULTON: Q: And it also serves an important backup
22 role for the Lower Mainland, Vancouver Island as well
23 as B.C. Hydro's hydroelectric system generally,
24 correct?

25 MR. O'RILEY: A: Yes, I agree with all that.

26 MR. OULTON: Q: And Burrard's capability extends up to

1 approximately 7,050 gigawatt hours per year, is that
2 correct?

3 MR. O'RILEY: A: I probably would disagree with that.

4 MR. OULTON: Q: It may be that it's its rated capacity,
5 but I have a witness aid that I provided to your
6 counsel a couple of days ago that I'd ask --

7 **Proceeding Time 2:57 p.m. T62**

8 MR. O'RILEY: A: Sure.

9 MR. OULTON: Q: Do you have it? I'm not sure. It's --

10 MR. O'RILEY: A: I did see it. But you can have it.
11 We can have it again.

12 MR. GODSOE: While we're going that, I did want to thank
13 all counsel that have given me these witness aids in
14 advance. It's tremendously helpful to myself and the
15 witness panels, and I think it allows for a more
16 effective and fair hearing. So thanks.

17 MR. OULTON: Q: And I believe for the record this is
18 Exhibit C16-11.

19 THE HEARING OFFICER: C16-11.

20 (WITNESS AID ENTITLED "THERMAL GENERATION SYSTEM",
21 LAST MODIFIED JAN. 12, 2009, MARKED EXHIBIT C16-11)

22 MR. OULTON: Q: And what this is, is a print-out from
23 B.C. Hydro's website, and it's a write-up dealing with
24 the thermal generation assets of B.C. Hydro and if you
25 note, it's last modified January 12, 2009. Do you see
26 that, in the middle of the page?

1 MR. O'RILEY: A: Yes. Yes.

2 MR. OULTON: Q: So it's a relatively current document.

3 MR. O'RILEY: A: Yeah. I'm not sure what was modified
4 on 2009, but -- I mean, this is in error. So, there's
5 tens of thousands of pages, probably hundreds of
6 thousands of pages on our Internet website, and this
7 is an error.

8 MR. OULTON: Q: All right, I accept that. I just --
9 that was the basis for my question, was --

10 MR. O'RILEY: A: Yes.

11 MR. OULTON: Q: Because it indicates that Burrard is a
12 950 megawatt generating station that has a capability
13 of 7,050 gigawatt hours, and you're saying that that's
14 an error.

15 MR. O'RILEY: A: Yeah.

16 MR. OULTON: Q: That that's not its rated capability,
17 or --

18 MR. O'RILEY: A: Well, I mean, what I would do is to
19 point to, in terms of the evidence, which is
20 consistent with what we've talked about. And the
21 challenge with 77,050 [sic] gigawatt hours is you'd be
22 running at 89 percent capacity factor. Which compared
23 to 76 percent capacity factor for the 6,000 gigawatt
24 hours. And I would point to the discussion in the
25 application on page 5-32, where they talk about the
26 6,000 gigawatt hours as being "equivalent to a 77

1 percent annual capacity factor, and an output factor,
2 when available, of almost 94 percent. This leaves
3 almost no margin to accommodate unplanned outages,
4 unit start-up failures or constraints such as
5 potential cooling water constraints in the summer
6 months, which may at times limit Burrard output to
7 four units of full load."

8 And they go on to say that "such a scenario
9 is not realistic for a plant that's currently 32 to 40
10 years old." Et cetera, et cetera. And this related
11 to the 6,000 gigawatt hours. So getting another 1,000
12 gigawatt hours out of the plant, I think, would be
13 physically impossible. So it just -- the point being,
14 we -- this is in error.

15 MR. OULTON: Q: I'm -- no, I defer to the technical
16 people on the panel. I just -- I had seen that.

17 MR. O'RILEY: A: Thank you for pointing it out, though.

18 MR. OULTON: Q: And I just wanted to understand the
19 capability of Burrard. It's fair to say that B.C.
20 Hydro has generally operated with a -- I believe Mr.
21 Elton referred to it as a practical limit on Burrard's
22 capability of 6100 gigawatt hours per year.

23 MR. O'RILEY: A: That's been the planning reliance that
24 we've had for Burrard -- assumed for Burrard.

25 MR. OULTON: Q: And you say that's been the planning --
26 or, sorry, the planning reliance for Burrard. That's

1 what the value that B.C. Hydro has historically used
2 for planning purposes for Burrard, correct?

3 MR. O'RILEY: A: Yes, that is correct.

4 MR. OULTON: Q: And in fact, Burrard's never operated
5 at that level, has it?

6 MR. O'RILEY: A: No, the chart in the same chapter, on
7 page 5-25, shows -- Figure 5-7 shows the actual
8 operation, and the greatest output, I think, was 4200
9 gigawatt hours a year, and that was in 1989, so --

10 MR. OULTON: Q: Yes. And if you look at the write-up
11 immediately above Figure 5.7 -- or 5-7, on page 5-25,
12 there's a discussion of the historic operating -- for
13 the history of Burrard and -- sorry, I have a note
14 here that I'm just -- that sets out the history, and
15 Burrard has only operated above 3,000 gigawatt hours
16 per year in less than 20 percent, or 7 of the years
17 since 1970. Is that correct? That's the paragraph
18 immediately above Figure 5-7.

19 MR. O'RILEY: A: Yes. Yes. Yes.

20 MR. OULTON: Q: And --

21 MR. O'RILEY: A: Seven years, it says.

22 MR. OULTON: Q: Yes, subject to check, that amounts to
23 slightly less than 20 percent of the years since 1970.
24 Would you accept that?

25 MR. O'RILEY: A: I'm just doing the math. That's --

26 MR. OULTON: Q: Yes. Seven out of 39.

1 MR. O'RILEY: A: Sure. Sure.

2 MR. OULTON: Q: And similarly, Burrard has operated at
3 less than a thousand gigawatt hours per year and in
4 particular the last six years it's operated less than
5 a thousand gigawatt hours per year in 24 of the 39
6 years since 1970, or more than 60 percent of the time.

7 **Proceeding Time 3:02 p.m. T63**

8 MR. O'RILEY: A: Yes, I accept that.

9 MR. OULTON: Q: And the historical average over that
10 period was approximately 1100 gigawatt hours per year?

11 MR. O'RILEY: A: Yes.

12 MR. OULTON: Q: And that's operating the facility in
13 the way we were talking about before the break, using
14 the method that -- or the approach that B.C. Hydro has
15 taken to Burrard, which is you operate it for system
16 reliability and support, and then typically not much
17 more than that, other than low or critical water years
18 or where economic dispatch, I'll refer to it,
19 dictates.

20 MR. O'RILEY: A: Yeah, I'm not sure I would agree with
21 that, because the actual -- that describes the recent
22 operations of Burrard, probably going back to the late
23 '90s. But the operation of Burrard has changed over
24 time, you could see in the document here. It actually
25 ran as a baseload plant in the sixties until the large
26 hydro generators came into service, and with GMS in

1 '68. In the nineties it ran extensively for energy,
2 really relying on this Valley Gas contract we had with
3 the old BC Gas. So its current operation as a peaking
4 unit, with firm winter capacity, is really only in the
5 last ten years when we got the -- or did the Burrard
6 upgrade project and secured the long-term firm gas
7 contract -- gas transportation contract, from Terasen.

8 MR. OULTON: Q: But you'll agree with me that in
9 operating as a peaking facility, the general
10 experience is Burrard is only operated at system
11 reliability and support levels, subject to economic
12 dispatch considerations, correct?

13 MR. O'RILEY: A: Yes, that refers to, probably at the
14 high end, the 600 gigawatt hour amount.

15 MR. OULTON: Q: And earlier today when you were
16 speaking with Ms. Worth, you said, "Generally
17 speaking, if you rely on Burrard more for planning,
18 you will operate it more." Is that a fair assessment
19 of what you said earlier?

20 MR. O'RILEY: A: That's what I said and that's what I
21 believe, yes.

22 MR. OULTON: Q: All right. But historically, B.C.
23 Hydro has relied on Burrard for 6100 gigawatt hours
24 per year for planning purposes, is that correct?

25 MR. O'RILEY: A: Actually I don't know when that
26 started actually, and I was going to -- I tried to

1 check and couldn't. So I know that we've relied on it
2 for the last -- certainly the last ten years. When
3 that actual 6100 was set, I did try and check but I
4 don't have that date with me. Obviously -- and it
5 just goes back to the point I made, that it was used
6 in many different ways over the years.

7 MR. OULTON: Q: But for the last ten years, say, --

8 MR. O'RILEY: A: Yes.

9 MR. OULTON: Q: -- it's been relied upon for planning
10 purposes at 6100 gigawatt hours per year, correct?

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

12 MR. OULTON: Q: And if we look at Figure 5-7, in the
13 last six years, I believe Mr. Weafer took you to this,
14 we see actual operations substantially below 1,000
15 gigawatt hours per year, correct?

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

17 MR. MATHESON: A: But I think it's worth pointing out,
18 the system has tightened up considerably in the last
19 ten years. In other words, the ability of our
20 resources to meet the growing load has become much
21 tighter over that period of time. So I think it's one
22 thing to look back to a time when we had a relatively
23 sizable surplus and say that Burrard operated very
24 little. And I think Mr. O'Riley's point is that in
25 the period we're now heading into, where our load
26 resource balances are much tighter than they have

1 been, you've got a very different operating paradigm.
2 MR. O'RILEY: A: I guess the reason I make the
3 statement that it will be, will result -- will tend to
4 have a different result of actual generation by
5 relying on it at 6,000 versus 3,000 is, if we rely on
6 it at 3,000, we'll make a number of other decisions
7 with respect to our system acquiring, you know, IPP
8 contracts, doing additional conservation and such, and
9 we'll have a certain supply/demand balance in terms of
10 what is handed over to the operations. If we rely on
11 it for 6,000, we will be in a systemic net short
12 position in an average water year that will be relied
13 -- it will be filled either by market purchases or
14 reliance on Burrard. And in a circumstance where the
15 heat rate, or the relationship between the gas and
16 power curves moves against us, we will be running
17 Burrard to fill that gap.

18 So there is a difference -- you get a
19 different outcome by planning to rely on it for 3,000
20 versus 6,000.

21 MR. OULTON: Q: Has B.C. Hydro given any consideration
22 to relying on Burrard for 6,000 gigawatt hours per
23 year in the short term, say up to 2016, when its
24 ability to go to the market to displace Burrard is
25 affected?

26

Proceeding Time 3:07 p.m. T64

1 MR. O'RILEY: A: We've given -- we've certainly given
2 consideration to that, and that goes back to this
3 question of social licence, and the risk we would be
4 taking on with respect to trying to achieve a licence
5 for 6,000. And my colleague can speak to that, but
6 that's a significant risk, because we may not, in the
7 course of trying to achieve the 6,000, we may not
8 retain the 3,000 and may find ourselves at a much
9 lower, lower level.

10 MR. OULTON: Q: Let's explore that for a moment. You
11 have a social licence, as I understand it. Dr.
12 Preston, your conclusion was that B.C. Hydro likely
13 has a social licence to continue operating Burrard in
14 the manner it has. Is that correct?

15 MS. PRESTON: A: It has -- what we said is that Burrard
16 has a social licence for its current peaking function
17 up to 600 gigawatt-hours per year. And a social
18 licence consists of many different elements. We
19 defined it as requiring both the tacit and explicit
20 approvals of governments, communities and other
21 stakeholders. So a part of that is to have the
22 required permits, but also there's a requirement from
23 a social aspect to go beyond compliance. And we've
24 certainly seen B.C. Hydro currently going beyond
25 compliance, in the sense that it is emitting far less
26 than it's allowed to within its permits, and Metro

1 Vancouver has certainly been okay with its current
2 operations as such.

3 But what we did say is if there was a plan
4 to go beyond that, say to 3,000, that some work would
5 need to be done. That there isn't currently a social
6 licence for 3,000 gigawatt hours per year, but that's
7 probably achievable, with correct consultation,
8 through the Burrard liaison committee, consultation
9 with Metro Vancouver, et cetera. And we were also
10 asked to look at two situations for 6,000 gigawatt
11 hours per year, and what we concluded that was to run
12 at 6,000 every year that there would not be a social
13 licence to do that, because it's well above any
14 previous operations, in other years. It would be the
15 largest point source of emissions. And quite frankly,
16 the FVRD has been very clear since -- during SE 2 and
17 since then as well, we meant to give one example,
18 since SE 2, that they want no increase in emissions,
19 whether it's from a new source or an existing source.
20 And Metro Vancouver keeps tabs on the operations of
21 Burrard. Burrard has to file weekly reports. It's in
22 their permit, that they have to file a backcast of
23 what they did the previous week, they have to forecast
24 what they're planning on doing that week and the
25 following week, and then they also have to do
26 quarterly and annual reports. And as far as Metro

1 Vancouver is concerned, the total emissions from
2 Burrard, they look at it every year when they
3 calculate what the cost is for the permit for the
4 emissions, but also every five years they do an
5 emission inventory. And as far as they're concerned,
6 the emissions at Burrard are very low, and they
7 currently have a principle of continuous improvement.

8 So I think that's one of the reasons why we
9 saw in June, 2004, when the -- of this year, when the
10 LTAP was released, that a district director for Metro
11 Vancouver was very concerned when he saw that Burrard
12 was planning on -- planning for 3,000 gigawatt hours
13 per year.

14 And I do think that everyone in this room,
15 I think, understands to plan to rely on it, but to not
16 actually use it. But the public and regulators don't
17 understand that. To get a permit to operate, you have
18 to look at maximum potential operations. And we've
19 seen historically that Metro Vancouver, this currently
20 is their fourth permit. And with every permit, they
21 have reduced the emissions that Burrard is allowed --
22 the allowed emissions of Burrard. And so, I just --
23 oh, I've lost my train of thought, sorry.

24 MR. OULTON: Q: You'll agree with me, Dr. Preston, that
25 your conclusions regarding social licence are premised
26 on the assumption that Burrard will be operated at the

1 level that it's planned for, correct?

2 MS. PRESTON: A: Sorry, can you repeat the question?

3 **Proceeding Time 3:12 p.m. T65**

4 MR. OULTON: Q: Your assumptions regarding the risk to
5 the social licence are predicated on the assumption
6 that if Burrard is relied upon for 6,000 gigawatt
7 hours per year, or 3,000 gigawatt hours per year, that
8 it actually will operate at those levels and have the
9 emissions levels associated with that operation.

10 MS. PRESTON: A: No, I think what I am saying, we
11 didn't make that assumption. For instance, for a
12 permit you don't look at the actual operations or even
13 the expected operations. You look at the maximum
14 possible operations. And I do believe that if there
15 was a plan to increase those operations from the
16 current baseload function that there has been since
17 2000, we've seen the evidence that the district
18 director would consider reopening their permit.

19 MR. OULTON: Q: And by "that evidence" you're referring
20 to the *Globe and Mail* article?

21 MS. PRESTON: A: Yes.

22 MR. OULTON: Q: Where the director saw that 3,000
23 gigawatt reliance for planning purposes was an
24 increase from 6100 gigawatt hours per year for
25 planning purposes? Because that's what the last LTAP
26 was about.

1 MS. PRESTON: A: He didn't understand that nuance.
2 That's my point.

3 MR. OULTON: Q: And when it was explained to him he
4 backed down from his comments, I believe you were
5 saying earlier.

6 MS. PRESTON: A: I did not say that.

7 MR. MATHESON: A: The *Globe and Mail* article
8 erroneously reported that B.C. Hydro planned Burrard
9 to 3,000 gigawatt hours a year baseload. So in other
10 words, it was going to go into our plan as a
11 baseloaded plant, which of course was incorrect. And
12 so that's what he was reacting to.

13 MR. OULTON: Q: And this goes to the transparency, and
14 maintaining your social licence requires some
15 education in transparency of the public, correct? And
16 the regulators.

17 MS. PRESTON: A: Correct.

18 MR. OULTON: Q: Right, and --

19 MR. O'RILEY: A: And I would just add, the 3,000
20 gigawatt hours is a reduction from the 6,000 gigawatt
21 hours that it's currently planned for. It's actually
22 an increase from where the public thought it would be
23 beyond 2014, because there was considerable discussion
24 from B.C. Hydro and in fact a proposal from B.C.
25 Hydro, and some interest from the province to see it
26 go to zero beyond 2014. So people were expecting a

1 lower number, and now they're saying 3,000 for beyond
2 2014.

3 MR. OULTON: Q: And you're referring to the proposal
4 made in the last LTAP that was rejected --

5 MR. O'RILEY: A: Yes, it was rejected.

6 MR. OULTON: Q: -- to shut down Burrard, correct?

7 MR. O'RILEY: A: Yes.

8 MR. OULTON: Q: And you'll agree with me that any
9 potential shutdown of Burrard is subject to the
10 supervisory jurisdiction of this Commission.

11 MR. O'RILEY: A: I do agree. So what I am speaking to
12 is the perception among many stakeholders that in fact
13 the plan was to not rely on the plant for energy
14 beyond 2014.

15 MR. OULTON: Q: But the reality is, reliance going
16 forward at 6,000 gigawatt hours per year would not --
17 would actually be a reduction of 100 gigawatt hours
18 per year from what B.C. Hydro has done up till this
19 point, correct?

20 MR. O'RILEY: A: You mean you're talking about the
21 difference between 6,000 and 6100?

22 MR. OULTON: Q: Yes.

23 MR. O'RILEY: A: Okay, I think that's probably noise
24 and shorthand. I think we see those as the same
25 number.

26 MR. OULTON: Q: Yeah. They're the same number.

1 MR. O'RILEY: A: Yeah.

2 MR. OULTON: Q: If B.C. Hydro were to rely on 6,000
3 going forward, it would be open to it to continue to
4 rely on Burrard and operate it in the exact same
5 manner that it has for the last ten years. As a
6 matter of fact it's --

7 MR. O'RILEY: A: You're talking prior to 2016 or --

8 MR. OULTON: Q: Yes.

9 MR. O'RILEY: A: Prior to 2016. With the qualification
10 that we are taking some risk to the social licence for
11 the -- it is open to B.C. Hydro to plan to rely on the
12 system, to rely on Burrard for 6,000 gigawatt hours.
13 But having said that, we don't believe we have a
14 social licence for that, and we'll put at risk the
15 reliance for 3,000.

16 MR. OULTON: Q: Do you believe you have a social
17 licence for the manner in which you currently operate
18 Burrard?

19 MS. PRESTON: A: Yes, but I don't think the public
20 understands that B.C. Hydro is currently relying upon
21 it for 6100 gigawatt hours per year. The public
22 currently believes that the plant is being used as a
23 peaking facility that runs at around 600 gigawatt
24 hours per year and not ten times that.

25 MR. O'RILEY: A: And the evidence for that would be, if
26 we go back to our biggest supporter, supporters in the

1 whole Lower Mainland area, which is the City of Port
2 Moody, they came out publicly advocating for a
3 continuation of the plant, continued reliance on the
4 plant as backup capacity emergency supply, which is in
5 line with 600 gigawatt hours. Not for energy
6 reliance.

7 So our biggest supporter, and arguably one
8 of the more educated supporters, because they've been
9 going through this committee. They believe -- you
10 know, they would extend us a social licence for 600
11 gigawatt hours.

12 **Proceeding Time 3:17 p.m. T66**

13 MR. OULTON: Q: I'm unclear as to whether or not B.C.
14 Hydro is of the view it currently has a social licence
15 for the way it currently operates Burrard. I keep
16 getting qualifiers.

17 MR. O'RILEY: A: Well, I think Dr. Preston was quite
18 clear in that -- I may have been responsible for
19 muddying that up a few -- in the last hour, but we're
20 quite clear that -- well, first of all I would say the
21 licence includes both -- input to the licence is both
22 a planned reliance on the plant and the actual
23 reliance on the plant. So you can't say you have a
24 licence for one and not the other.

25 So we believe we have a licence for our
26 reliance on the plant for -- in its current operating

1 mode. So in the order of 600 gigawatt hours. We
2 don't think we have a licence for 6,000 gigawatt hours
3 of planned reliance.

4 MR. OULTON: Q: You have a permit that would permit you
5 to -- currently, that would permit you to operate at
6 that level, correct?

7 MR. O'RILEY: A: And again, again, the permit is one
8 input, one aspect of the licence. You've also got the
9 public values and perceptions, you've got the relative
10 positions of government -- the various governments and
11 regulators that have input into it.

12 MS. PRESTON: A: And there's also a curtailment
13 provision within the permit as well, with regards to
14 -- if ambient air quality is adverse, that the
15 district director can cause the closure of it -- of
16 the facility.

17 MR. OULTON: Q: But that's dependent on how the plant
18 actually operates, correct?

19 MS. PRESTON: A: It also depends upon meteorology and
20 ambient air quality at the time.

21 MR. OULTON: Q: I appreciate there's factors that go
22 into air quality. Burrard won't get to 6,000 gigawatt
23 hours per year operation except in critical water
24 years, is that correct? That's what we were
25 discussing earlier.

26 MR. O'RILEY: A: We said that before, previously, yes.

1 MR. OULTON: Q: Yeah. So it's only in critical water
2 years that there's even a risk that you're going to
3 come close to your permit levels, your existing permit
4 levels, correct?

5 MR. O'RILEY: A: And again, that's not the only input
6 into the social licence question.

7 MR. OULTON: Q: Yeah. I'm trying to talk about your
8 permit right now. The permit is the legal document
9 that permits Burrard to operate and emit air
10 emissions, right?

11 MR. O'RILEY: A: Dr. Preston can speak to all the
12 permit levels that we have.

13 MR. OULTON: Q: I don't intend to get into detail, I'm
14 asking -- the permit is the legal document that
15 permits Burrard to operate as an air emitter -- or as
16 an emitter of NOx and other particulate and other
17 substances, correct?

18 MS. PRESTON: A: It is, and a permit would be an
19 example of an explicit approval by a government for a
20 facility to operate, and we've said that the social
21 licence is also dependent upon tacit approvals by
22 communities and other stakeholders as well. And
23 there's also the concept -- as far as the public these
24 days is concerned, the social obligations of a
25 company, they start at meeting regulatory requirements
26 and legal obligations. The public expects companies

1 to go beyond compliance, and to do much better than
2 that, and not only the public, but the regulators as
3 well. Environment Canada came out extremely clearly
4 during the SE 2 hearing that you cannot pollute up to
5 a limit.

6 MR. OULTON: Q: You agree with me that if Burrard was
7 -- Burrard's current permit would authorize -- I
8 appreciate something could change in the future, but
9 its current permit would authorize Burrard to operate
10 at 6,000 gigawatt hours per year.

11 MS. PRESTON: A: With the caveat of the curtailment
12 provision, it is possible that there could be a
13 considerable number of days where curtailment is
14 required.

15 MR. OULTON: Q: And you've also -- the panel's also
16 agreed that 6,000 gigawatt hours per year is going to
17 be -- I'll phrase it, the exception, not the rule.
18 It's only in critical water years, correct?

19 MR. GODSOE: I do think that question's been asked and
20 answered now several times, Mr. Chairman.

21 THE CHAIRPERSON: I would certainly agree with you. Do
22 you want to be a little bit more specific, or identify
23 that particular aspect of the answer that you wish to
24 test a little further?

25 MR. OULTON: Q: Burrard's current operations don't come
26 anywhere near its existing permit levels, correct?

1 For the last six years we've seen, at best, 500 or 600
2 gigawatt hours per year, correct?

3 MR. MATHESON: A: I think you've asked several times.

4 MR. OULTON: Q: I know --

5 MR. MATHESON: A: Mr. O'Riley said to you that the past
6 ten years aren't necessary indicative of what may
7 happen in the future.

8 MR. O'RILEY: A: No. Well, I think we've -- and we've
9 answered that -- we've answered that direct question
10 several times. And it's in the evidence. All over
11 this -- all over the application. All over the IRs.
12 That -- I think you can establish that from the
13 evidence. From the written evidence.

14 **Proceeding Time 3:22 p.m. T67**

15 MR. OULTON: Q: The question that I'm putting to you
16 has to do with the permit itself. Burrard's operation
17 has not in the past ten years exceeded its permit
18 levels, correct? I haven't asked that question
19 before, I don't think.

20 MR. O'RILEY: A: It's my understanding we've not
21 exceeded the permit, the overall permit level. Are
22 there any -- we've not exceeded the permit level.

23 MR. OULTON: Q: Your modelling exercises, even assuming
24 it operates at 6,000 gigawatt hours a year -- and I'm
25 leaving aside social licence right now, I'm just
26 talking about the permit; shows that you're still

1 going to be in compliance with the strict letter of
2 your permits regarding the particulate in NOx and so
3 on.

4 MS. PRESTON: A: Are you referring to the dispersion
5 modelling report?

6 MR. OULTON: Q: I believe that was the reference in the
7 report, yes, but --

8 MS. PRESTON: A: The permit itself does not have any
9 requirements for meeting ambient air quality
10 objectives. However, we did do a dispersion modelling
11 assessment of the three scenarios, and what we found,
12 Metro Vancouver's ambient air quality objective for
13 one hour nitrogen dioxide is 200 micrograms per metre
14 cubed. And what we found is that if we added -- we
15 also add a background value to take into consideration
16 the contribution from all the other sources of NOx
17 emissions. And what we found is that if we added the
18 98 percentile -- I'm just going to, just so I don't
19 misspeak, I'm going to turn to that, those results,
20 and it's Appendix J-3, page 249 of 250. And what we
21 found for Scenario 3 is that if we add the 98
22 percentile background value we get 194 micrograms per
23 metre cubed. And if we add the 99th percentile, we get
24 199 micrograms per metre cubed.

25 The objective again is 200, and I can tell
26 you these dispersion models are not that good.

1 They're plus or minus considerably more than 1 or 6
2 micrograms per metre cubed. So you're right on the
3 edge. And for the other scenarios, due to the
4 auxiliary boiler, we did predict exceedences.

5 And again I would suggest that -- as well,
6 these are at the permitted levels. So what we ran
7 here at 6100, it just so happens the facility operates
8 right now at less than its permitted levels and that's
9 what we modelled. So we didn't model the exact
10 permitted amounts. If we did model the exact
11 permitted amounts, we would exceed the ambient air
12 quality objective because it's currently running at 24
13 grams per second, each unit, and the permit is more
14 like 39 grams per second. So in fact, if we ran at
15 the permitted levels we would -- there would be
16 exceedences at Scenario 3.

17 But in any event, you're so close to the
18 objective, there's clear examples. Environment Canada
19 has come out and said you can't pollute up to a limit.
20 Metro Vancouver in their 2005 Ambient Air Quality
21 Management Plan has a principle of continuous
22 improvement. Really, this suggests that the social
23 licence would be in jeopardy if you were to run at
24 these levels.

25 MR. OULTON: Q: Again, that's if you run at 6100
26 gigawatt hours per year in operational terms, correct?

1 MS. PRESTON: A: It's actually -- yes, and if you run
2 it, if you run it less than, you have exceedences.
3 MR. OULTON: Q: If you run it below 6100 gigawatt hours
4 per year, you're going to exceed your permit levels.
5 MS. PRESTON: A: Again, the ambient air quality
6 objectives aren't part of the permit. So there's two
7 different things. The permit is based on the emitted
8 concentrations. And so there's the permit, which is
9 provided in Appendix J-3, and I can -- the actual
10 permitted values are provided -- there's a few parts
11 to it. But on page 129 of 250 it shows the maximum
12 combined flue discharge, gas discharge rate, which is
13 45,600 metre cubed per minute. And on page 130
14 there's two different concentrations. So on a 24-hour
15 average rolling basis it's 35 milligrams per metre
16 cubed. So you can emit more during any one hour
17 though, up to 52 milligrams per metre cubed.

18 **Proceeding Time 3:27 p.m. T68**

19 And when you multiply it -- when you
20 multiply the 52 milligrams per meter cubed by the
21 45,600 you get the 39 and a half grams per second I
22 was mentioning. There's also, on page 131 of 250, if
23 you look at the year 2000 numbers, there's also total
24 caps of 2.3 tons per day, and 715 tons per year. So
25 these are all based on emissions.

26 The dispersion modeling report is based --

1 we aren't comparing -- there is no information here on
2 ambient concentrations, which is what the dispersion
3 modeling report was comparing to. So, by being less
4 than an ambient air quality objective doesn't mean
5 you're within your permit or not. It's whether or not
6 you meet these concentrations and the emission caps.
7 And yes, at 6100 you would meet those.

8 MR. OULTON: Q: I appreciate the level of detail that
9 you're getting into, Dr. Preston. My questions are at
10 a much broader level, and they come from your report.
11 And if you look at page 7 of 50, of Exhibit J-3, the
12 first paragraph on that page says:

13 "Burrard's potential annual emissions ..."

14 MR. O'RILEY: A: Wait a second. Sorry.

15 MS. PRESTON: A: Page 7 of 250 was that?

16 MR. OULTON: Q: Yes. It's page 4 of your executive
17 summary.

18 MS. PRESTON: A: Yes, sorry, which paragraph?

19 MR. OULTON: Q: The first sentence.

20 "Burrard's potential annual emissions of
21 common air contaminants...for all scenarios ..."

22 And that would include the 6100 gigawatt hour
23 scenarios,

24 "... were estimated based on historical data
25 and were found to be less than currently
26 permitted levels."

1 That's correct, right?

2 MS. PRESTON: A: Yeah, and that's what I was trying to
3 get at just now, is there's a difference between the
4 modeling that we did for ambient air quality levels
5 and this is based on the emissions, as opposed to the
6 ambient concentrations. So you can certainly compare
7 the permit with its emission levels. That sentence is
8 correct.

9 MR. OULTON: Q: Yeah. And if you turn to page 5 of
10 250, so two pages before, in Exhibit -- or Appendix J-
11 3, the last paragraph on that page says:

12 "Although Scenario 3A and 3B...are less than
13 the authorized maximum levels in B.C.

14 Hydro's current Air Emission Permit ..."

15 The modeling that you did, Scenarios 3A and 3B are
16 both predicated on 6,100 gigawatt-hours reliance,
17 correct? So that's the first thing. 3A and B --

18 MS. PRESTON: A: Yes. Scenarios 3A and 3B are both
19 based on 6100, yes.

20 MR. OULTON: Q: And your work showed that their
21 emissions are projected to be less than the authorized
22 maximum levels in the current permit, correct?

23 MS. PRESTON: A: Yes.

24 MR. OULTON: Q: Thank you. To your knowledge, are B.C.
25 Hydro's current permits up for expiry or renewal, in
26 the immediate future?

1 MS. PRESTON: A: What we are aware of is, again, that
2 article from the *Globe and Mail* where the district
3 director has talked about the potential of needing to
4 re-open it. So there is some question there, I would
5 suggest.

6 MR. OULTON: Q: There's a term specified in the permit,
7 that the permit is valid for, correct? Or is it an
8 open-ended -- if it's open-ended, then I'll accept
9 that.

10 MS. PRESTON: A: I'm going to look. I'm not aware of
11 there --

12 MR. O'RILEY: A: It's at their pleasure, right?

13 MS. PRESTON: A: Subject to check, I'm not aware of
14 there being a term for which this is valid.

15 MR. OULTON: Q: All right, so there wouldn't be --
16 they're not currently due to be renewed or up for
17 expiry or anything. I take your point that there's
18 been an article in the *Globe and Mail* in which they
19 stated there may be a potential for review.

20 MS. PRESTON: A: But this isn't -- certainly isn't the
21 first permit that Burrard has had. This is, at a
22 minimum, the fourth. And again, every time they've
23 had a permit, it's been ratcheted down. And we've
24 seen before, when Burrard has operated at high levels,
25 that the permit was reopened.

26 MR. OULTON: Q: You'll agree with me that if the

1 Director is going to issue a new permit or take steps
2 to review this permit, they'll give B.C. Hydro notice,
3 correct?

4 MS. PRESTON: A: Yes.

5 MR. OULTON: Q: So B.C. Hydro would have the
6 opportunity to consider changes to its operations in
7 order to accommodate whatever new requirements the
8 director was considering.

9 MR. GODSOE: And we're getting back into legal areas that
10 I'm certainly going to address in argument. But --

11 MR. OULTON: Q: In your report, I believe you talk
12 about the Director giving reasonable notice to the
13 proponent or the holder of the permit.

14 MR. GODSOE: Can we get a page reference for that,
15 please?

16 MR. OULTON: Q: My apologies. I'm out of order in my
17 notes, so it's easier for me to just look in the
18 report.

19 It's in your executive summary, I do recall
20 that. Sorry, I don't have a page number in front of
21 me.

22 MR. O'RILEY: A: I think we've got page 8 of 250.

23 MS. PRESTON: A: But it -- that's a different -- I
24 mean, the word "reasonable" is there, but it's not the
25 same thing. It's on reasonable grounds. Is that what
26 you were referring to?

1 MR. OULTON: Q: That wasn't what I was referring to.

2 MS. PRESTON: A: Okay.

3 **Proceeding Time 3:33 p.m. T69**

4 MR. OULTON: Q: Yes. However, in the same paragraph,
5 this is what I was thinking of, page 8 of 250 of
6 Exhibit J-3, the second full paragraph on that page,
7 about halfway down there's a sentence beginning:

8 "Metro Vancouver will not grandfather a
9 facility that met the old ambient objectives
10 but does not meet the new ones."

11 And it says:

12 "However, they will allow facilities an
13 appropriate amount of time to meet
14 objectives."

15 That's correct, is it not?

16 MS. PRESTON: A: That's my understanding of how they
17 would operate, but in some ways that's not based on
18 what they would with respect to amending a permit.
19 That's what I was told with respect to grandfathering
20 facilities. So it's a bit of a reach. Although I
21 believe that Metro Vancouver would enter into
22 consultation with B.C. Hydro, but I also think you
23 don't want to get to that point, because you are
24 already risking your social licence if you get to that
25 point. And by that point, probably the public is
26 fairly alarmed and not very happy, and again I think

1 it's a question of risking being able to even to
2 operate it at 600.

3 MR. OULTON: Q: You agree with me that the risk to B.C.
4 Hydro's social licence with respect to Burrard can be
5 mitigated by operating Burrard in the manner that it
6 has been recently as a peaking facility, correct?

7 MS. PRESTON: A: Can be mitigated.

8 MR. O'RILEY: A: Well, I guess we believe that both the
9 planning and the actual operations are key inputs into
10 the social licence. So you can't separate the two.

11 MR. OULTON: Q: But there is a distinction between the
12 two, Mr. O'Riley, correct?

13 MR. O'RILEY: A: We think they go together in terms of
14 determining the social -- whether you have the social
15 licence.

16 MS. PRESTON: A: In addition, we don't think that the
17 public and other stakeholders necessarily understand
18 that distinction.

19 MR. OULTON: Q: As I understand it, the concern from
20 the public with respect to the operation of Burrard
21 are its air emissions, correct? That's the principal
22 complaint?

23 MS. PRESTON: A: And greenhouse gas emissions. Sorry,
24 air contaminants and greenhouse gas emissions, yes,
25 it's their emissions.

26 MR. OULTON: Q: They're all emissions into the air, is

1 what I meant by air emissions. I appreciate there are
2 gaseous and particulate components to that.

3 MS. PRESTON: A: Okay.

4 MR. OULTON: Q: So it's only if Burrard is operated at
5 a level that is going to impact the ambient air
6 quality that the public is even going to become
7 concerned about this in most cases. Is that fair to
8 say?

9 MS. PRESTON: A: It's the planning for it as well.
10 Because even if it ends up being just four out of 60
11 years, quite frankly the public will probably think
12 that's a pretty high frequency.

13 MR. MATHESON: A: And we saw an example of that to the
14 contrary when we filed the long-term acquisition plan
15 in June. The public got very engaged very quickly
16 based on erroneous information in a newspaper report.
17 And it was amazing how quickly that sort of swung out
18 of control.

19 MR. OULTON: Q: Again, but appropriate dissemination of
20 information to the media would alleviate that risk.

21 MR. MATHESON: A: Well, in a perfect world, you'd always
22 have appropriate dissemination of information, but you
23 don't always.

24 MR. O'RILEY: A: And I guess just to remind everybody,
25 we are talking about the period prior to 2016. So the
26 strategy that you are proposing, which is put in a

1 high reliance that -- a high reliance for energy on
2 Burrard knowing that you are never going to have to go
3 there would be prohibited, we believe, under SD 10
4 starting in 2016. So you'd be engaging in a strategy
5 in the next few years that you know would not be
6 acceptable beyond 2016 and we might want to think
7 about what the province's perspective on that would
8 be.

9 MR. OULTON: Q: And which part of Special Direction 16
10 prohibits B.C. Hydro from operating its plant in the
11 manner that it has?

12 MR. O'RILEY: A: Well, that there's no constraint in SD
13 10 in terms of how B.C. Hydro operates the plant. A
14 constraint would be planning to rely on the plant in a
15 -- for an amount that you know you can't achieve.

16 It's back to the principle I talked about
17 earlier on that we came to fairly early in setting out
18 these studies. If our argument for the capability of
19 the plant depends on the plant not running, that's not
20 an argument that -- that argument by definition --
21 that kind of argument doesn't have integrity in terms
22 of meeting the spirit and intent of SD 10. It's an
23 attempt to subvert SD 10, to get around it. So it's
24 not a principled argument that would could take
25 forward.

26 MR. OULTON: Q: SD 10 requires that B.C. Hydro be

1 MR. O'RILEY: A: Special Direction 10 talks about being
2 capable of operating, capable of meeting the
3 requirements in the province by 2016. And we're
4 defining capable as including both technical
5 engineering capability and social licence.

6 MR. OULTON: Q: You will agree with me that what B.C.
7 Hydro is capable of and what it does in operation are
8 different, correct?

9 MR. O'RILEY: A: Well, again, I'll keep giving the same
10 answer to a very similar question. We think that
11 capable includes both technical and social licence
12 considerations.

13 MR. OULTON: Q: I didn't realize my question was that
14 similar to what we were talking about before, but what
15 B.C. Hydro is capable of now and what it's capable of
16 in 2016 is different than what it's going to do on an
17 operational basis. Correct?

18 MR. O'RILEY: A: Not -- well, there are circumstances,
19 there are circumstances based on the water conditions
20 and the market prices, where we will operate -- if we
21 plan to rely on Burrard for 3,000 gigawatt hours,
22 where we will generate to that level.

23 MR. OULTON: Q: Those would be the critical water
24 years?

25 MR. O'RILEY: A: The critical water years, yes.

26 MR. OULTON: Q: Outside of the critical water years,

1 B.C. Hydro will operate Burrard essentially as a
2 peaking facility.

3 MR. GODSOE: Mr. Chairman, we seriously have been asked
4 and answered about ten times this question now.

5 MR. O'RILEY: A: And it's not just the critical water
6 years. There's a whole continuum of water conditions.
7 So the critical water years happen. The near critical
8 water -- a certain percentage of the time. The near
9 critical water years happen. We had a critical water
10 -- a low water period in the '70s, late '70s. We had
11 a very low water period in the early to mid-90s.
12 We've had relatively adverse water conditions in the
13 early part of this decade.

14 So we can expect to get some significant
15 quantities of energy generated from Burrard when those
16 periods coincide with adverse market prices. And
17 that's actually -- those things are correlated, so. I
18 think the assumption, a go-forward assumption that
19 Burrard won't run, or will run like it's run the last
20 few years, is not a reasonable assumption to make.

21 MR. OULTON: Q: B.C. Hydro's expectation is that there
22 will be zero gigawatt hours per year of economic
23 dispatch operation of Burrard, regardless of whether
24 it's relied upon for 600, 3,000 or 6,000 gigawatt
25 hours per year.

26 MR. GODSOE: Could we have the IR reference for that,

1 please.

2 MR. OULTON: Yes. My apologies, Mr. Chairman.

3 MR. OULTON: Q: I believe it's 2.215, but .2. If I may
4 -- it's BCUC 1.103.1. It's the third paragraph of
5 the response reads:

6 "Specifically the annual energy output from
7 Burrard, as modelled in the 2008 LTAP study,
8 showed essentially zero gigawatt hours per
9 year economic dispatch in all portfolios and
10 scenarios, even when the simulation of
11 Burrard is hypothetically extended to 6,000
12 gigawatt hours per year."

13 MR. O'RILEY: A: Yeah, and every one of those portfolio
14 studies was done at average water conditions and using
15 price curves that guaranteed that Burrard would not
16 run. So, this is not indicative of how Burrard would
17 operate in a critical water year in adverse price
18 scenarios.

19 **Proceeding Time 3:44 p.m. T71**

20 MR. OULTON: Q: You have Mr. Chairman's request on the
21 probability of that occurring, so I'll leave that
22 alone.

23 Sticking with this IR response, when it's
24 talking about economic dispatch, that's the operation
25 of Burrard over and above system reliability and
26 support, correct?

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

2 MR. OULTON: Q: And that's, in many respects, the
3 peaking function that we referred to earlier.

4 MR. O'RILEY: A: No. No. The system -- the economic
5 dispatch is the energy function. The source --

6 MR. OULTON: Q: Right. The peaking is the system
7 reliability and support --

8 MR. O'RILEY: A: Yes. Yes.

9 MR. OULTON: Q: Sorry, my question wasn't as clear as
10 it should have been.

11 If we turn to page 3 of the response to
12 1.102.1, the first full paragraph talks about B.C.
13 Hydro's expectation that the actual operating level of
14 Burrard won't be zero because of this system
15 reliability and support, and then it estimates that
16 that's 600. There's a reference to RMR operation, and
17 I just wanted to ask you what that means.

18 MR. O'RILEY: A: RMR stands for "reliability must run",
19 and that is when we essentially hand the plant over to
20 BCTC, as in our transmission network contract, to
21 allow them to dispatch Burrard, or instruct the
22 dispatch of Burrard to support the transmission
23 system. We've not done that in the past formally, and
24 don't plan to, but we expect there to be what we call
25 a -- might refer to as a "soft RMR" requirement, where
26 there is a need to support the transmission system,

1 support our load, and we will of course run the plant.
2 So it's probably a subtle distinction. And we ran in
3 that mode, I would argue, that week prior to
4 Christmas, where we had the cold snap here.

5 There wouldn't be a lot of energy
6 associated with an RMR, soft or hard operation.

7 MR. OULTON: Q: All right. I just didn't know what
8 that meant, so --

9 MR. O'RILEY: A: Yeah.

10 MR. OULTON: Q: -- thank you. Sorry, I've finally
11 found my place in my notes, but I'm much further along
12 than --

13 THE CHAIRPERSON: You've caught up with yourself, have
14 you?

15 MR. OULTON: I have, yes.

16 THE CHAIRPERSON: Good.

17 **Proceeding Time 3:47 p.m. T72**

18 MR. OULTON: Q: In actual terms, we've heard a lot of
19 discussion about the displacement of Burrard above and
20 beyond this system reliability and support level by
21 market power and by the Heritage non-firm resources.
22 There are other sources that are used to displace
23 Burrard, correct?

24 MR. O'RILEY: A: Well, there's IPP non-firm energy,
25 there's power from the market and there's Heritage
26 non-firm energy. I think that's the full set.

1 MR. OULTON: Q: Is Alcan included in the IPP category?
2 MR. O'RILEY: A: Yes, I would probably count it there.
3 MR. OULTON: Q: All right. Because there is non-firm
4 power available under the 2007 EPA, correct?
5 MR. O'RILEY: A: Yes, I would call that an IPP in that
6 context.
7 MR. OULTON: Q: In that context, yes. I recognize they
8 are not an independent power producers.
9 MR. O'RILEY: A: They might disagree with that but --
10 MR. OULTON: Q: Yes.
11 MR. O'RILEY: A: -- broadly speaking they fit in that
12 category in that context.
13 MR. OULTON: Q: For the purposes of our discussion here
14 they are akin to an IPP.
15 MR. O'RILEY: A: Yes.
16 MR. OULTON: Q: And the amounts that are typically
17 available from those sources has been set out in the
18 response to COPE IR 1.2.4 in Exhibit B-3. If I
19 could ask you to turn to that.
20 MR. O'RILEY: A: I don't have that one.
21 MR. OULTON: Q: It's 1.2.4.
22 MR. O'RILEY: A: Yes, I have that.
23 MR. OULTON: Q: And what is in the response is a table
24 setting out what appear to be pretty much set amounts
25 for the Heritage Hydro non-firm, the IPP non-firm, and
26 the Alcan non-firm under the 2007 EPA of 4200, 900 and

1 300 gigawatt hours respectively.

2 MR. O'RILEY: A: That is what this says, yes.

3 MR. OULTON: Q: Yeah, and the numbers are given for
4 F2016 and F2020. Are similar values applicable in the
5 intervening period, 2017 to 2019?

6 MR. O'RILEY: A: Well, the Heritage hydro would be the
7 same. The non-firm IPP power might not be. I'm not
8 aware of what the number would be in the prior years
9 for the IPP non-firm and even the Alcan non-firm.

10 MR. OULTON: Q: And what about in the period prior to
11 this?

12 MR. O'RILEY: A: Well, that's what I'm referring to.
13 I'm not aware -- perhaps someone else on the panel is --
14 of what the equivalent numbers would be prior to 2016.
15 I mean the issue is there's an assumed schedule of
16 IPPs coming on line and that would translate into that
17 900.

18 **Proceeding Time 3:50 p.m. T73**

19 MR. OULTON: Q: I think I asked two questions. The
20 first was, do I take it that the numbers here, they're
21 the same shown at 2016 and 2020 --

22 MR. O'RILEY: A: Sure, you asked the intervening years.

23 MR. OULTON: Q: Yeah, the intervening years are the
24 same.

25 MR. O'RILEY: A: I would say they're the same, yeah.

26 MR. OULTON: Q: Okay. And is it possible to estimate

1 what they would be prior to that? And I'll limit my
2 request to the planning years, which I think are 2012
3 to 2015.

4 MR. O'RILEY: A: Do we have that? Do we have a non-
5 firm Hydro in that?

6 MR. GODSOE: I think if you put that question to Panel 3
7 they can answer it.

8 MR. OULTON: Okay. If not I'll give my friend notice
9 that I will be asking that they undertake to provide
10 that estimate.

11 Sorry, that was Panel 3, Mr. Godsoe? Thank
12 you.

13 MR. OULTON: Q: And I think you mentioned earlier
14 there's another potential source of domestic non-firm
15 power available that is potentially available to B.C.
16 Hydro, and that's Waneta, correct?

17 MR. O'RILEY: A: I did talk about that before.

18 MR. OULTON: Q: Yeah, there's potential -- there is
19 surplus power at Waneta, to B.C. Hydro's
20 understanding, correct?

21 MR. O'RILEY: A: Yes.

22 MR. OULTON: Q: And if I understood your evidence
23 earlier, B.C. Hydro is in discussions to see if they
24 can acquire some portion of that.

25 MR. O'RILEY: A: That's what I said, yes.

26 MR. OULTON: Q: I just wanted to make sure I understood

1 what you said earlier.

2 Before I move to another brief that
3 hopefully I'll be able to get through before 4:00,
4 with respect to Alcan, as I understand it B.C. Hydro
5 has rights to acquire additional non-firm power if the
6 modernization project doesn't proceed as scheduled, is
7 that correct? Or is this a question for another
8 panel?

9 MR. GODSOE: I think that's probably better put to Panel
10 4.

11 MR. OULTON: I'm going to leave Burrard alone for a
12 moment because I do need to go through my notes. I'm
13 sure there's a couple of things I'll come to tomorrow
14 morning, but --

15 THE CHAIRPERSON: Excuse me, which witness in particular
16 on Panel 4? I know you --

17 MR. GODSOE: Mr. Scouras --

18 THE CHAIRPERSON: Scouras.

19 MR. GODSOE: -- through Contract Administration should be
20 able to speak to that.

21 THE CHAIRPERSON: Okay.

22 MR. GODSOE: You like to pin it down to a particular
23 witness, don't you, Mr. Chairman?

24 THE CHAIRPERSON: No, I just -- I was wondering. It's
25 the same person as administers the Island --

26 MR. GODSOE: Correct.

1 THE CHAIRPERSON: Right, yes.

2 MR. OULTON: Would the same hold true for questions
3 regarding discussions with Alcan, whether there'll be
4 delays, or is that something for this panel?

5 MR. GODSOE: I think you heard from Mr. Van Ruyven
6 probably as much as we're going to be able to say,
7 which is there's a confidentiality agreement that
8 allows us to disclose that there discussions but we
9 can't go any further than that. So I'm not sure we
10 could help you out with that.

11 So I think Ms. Van Ruyven's testimony, you
12 can turn to it, was there's a confidentiality
13 agreement exists, and the delivery of additional Tier
14 1 energy is the subject of that discussion, and that's
15 all we can say. Is that your question?

16 **Proceeding Time 3:53 p.m. T74**

17 MR. OULTON: Well, my understanding of Ms. Van Ruyven's
18 evidence is that it was in respect to, I think it was
19 Mr. Wallace's questioning about Alcan's recent
20 announcement that they are delaying modernization
21 somewhat. My question had to do with whether or not
22 there will be any further delays as a result of the
23 *Carrier Sekani* decision.

24 MR. GODSOE: I think I addressed that in my statements on
25 Friday, which is, our legal position right now is, we
26 would not remove Alcan from our stack. I don't think

1 we're able to address whether there will be additional
2 delays to the modernization as a result of that
3 decision.

4 MR. OULTON: Yeah, which was the latter, the latter
5 point, was the one I was interested in.

6 MR. GODSOE: Yeah. I don't think legally we can address
7 that right now.

8 MR. OULTON: All right. See if I can get through this
9 area in five minutes.

10 MR. OULTON: Q: I'd like now to address some pricing
11 questions that I believe are appropriate for this
12 panel, but I defer to Mr. Godsoe.

13 You'll agree that the industrial sector is
14 a significant portion of B.C. Hydro's domestic
15 consumer base, correct?

16 MR. MATHESON: A: Correct.

17 MR. OULTON: Q: And you'll also agree that the
18 industrial load is forecast to grow, particularly in
19 the mining and oil and gas sectors?

20 MR. INCE: A: Well, certain sectors -- among all the
21 sectors of B.C. Hydro, it's the slowest-growing, but
22 there are some growth areas. You've identified
23 mining. I would suggest oil and gas is the other one.

24 MR. OULTON: Q: I think I actually said mining and oil
25 and gas, but --

26 MR. INCE: A: Oh.

1 MR. OULTON: Q: -- that's all right. If we could turn
2 to BCUC IR 3.248.1.

3 MR. INCE: A: Yes.

4 MR. OULTON: Q: There's Table 1 to that response, shows
5 an increasing load before DSM and before rates each
6 year up to 2021, is that correct? Am I interpreting
7 that table correctly, Table 1?

8 MR. INCE: A: Well, I think we discussed this table
9 before, but briefly, the left-most column is the 2008
10 forecast, the middle column is the 2007 forecast, the
11 rightmost column is the difference between the two,
12 but it does show -- in the leftmost column the 2008
13 forecast does show an increase in oil and gas-related
14 load.

15 **Proceeding Time 3:56 p.m. T75**

16 MR. OULTON: Q: Yeah, there's an incremental load
17 increase that levels off at about 710 gigawatts per
18 year in 2021.

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

20 MR. OULTON: Q: And if you turn to Table 3 of that
21 response, it shows a similarly increasing load. And
22 as I understand it, this is the system generally? Is
23 this correct? Or am I -- I get mixed up in the
24 numbers a little bit.

25 MR. INCE: A: Well, Table 1 refers to Fort Nelson
26 specifically, which is a non-integrated area.

1 MR. OULTON: Q: Yes.

2 MR. INCE: A: Table 3 refers to the integrated area.
3 So we'd be looking at Chetwynd and Dawson Creek and
4 Fort St. John and so on.

5 MR. OULTON: Q: And has B.C. Hydro estimated the
6 average revenue that it expects to receive from these
7 incremental loads?

8 MR. INCE: A: I'm not an expert on rates.

9 MR. RICH: A: Insofar as the application is concerned,
10 our analysis is a total resource cost analysis, so
11 there isn't an aspect that estimates revenues from the
12 customers.

13 MR. OULTON: Q: Sorry, did you say there is an aspect?

14 MR. RICH: A: Is not.

15 MR. OULTON: Q: Is that something that B.C. Hydro can
16 do, without undue burden?

17 MR. GODSOE: If I could just explore a bit more why that
18 would be relevant to this proceeding.

19 MR. OULTON: This has to do with a point that I believe I
20 raised, and I think my friend Mr. Wallace raised,
21 about the current buy high/sell low circumstance is
22 arising.

23 MR. OULTON: Q: And perhaps a different way to get at
24 the same information is, it's B.C. Hydro's expectation
25 that these new loads, these new incremental loads, are
26 going to be paying one of the stepped industrial

1 rates. Is that fair to say?

2 MR. RICH: A: Yes, if they're transmission voltage
3 customers, yes, that's correct.

4 MR. OULTON: Q: Is that B.C. Hydro's expectation of
5 what these incremental loads will be?

6 MR. RICH: A: By and large I think there'll be
7 transmission levels, but there may be some
8 distribution voltage level customers as well.

9 MR. OULTON: Q: And it's fair to say that those rates
10 are significantly less than \$100 per megawatt hour?
11 They're in the tariff, I think, but I get confused as
12 to which tariff I'm looking at.

13 MR. RICH: A: That is correct.

14 MR. OULTON: Q: But it's less than \$100 per megawatt
15 hour, correct?

16 MR. RICH: A: I believe so.

17 MR. OULTON: Q: All right. And --

18 THE CHAIRPERSON: Are you referring to the Fort Nelson
19 load or the integrated loads? I maybe mislinked or
20 something.

21 MR. OULTON: I think I was asking a question about both,
22 broadly, but --

23 THE CHAIRPERSON: For both. Okay.

24 MR. OULTON: Q: But perhaps -- does B.C. Hydro expect a
25 distinction between those two incremental loads with
26 respect to --

1 MR. RICH: A: No, they're both part of Zone 1.

2 **Proceeding Time 4:00 p.m. T76**

3 MR. OULTON: Q: That was my understanding from some of
4 the evidence I heard earlier this week.

5 Can you confirm that B.C. Hydro estimates
6 that the incremental cost of this -- these incremental
7 loads -- of this incremental load in both the
8 integrated and the Fort Nelson area is more than a 100
9 megawatts -- a hundred dollars per megawatt-hour.

10 MR. MATHESON: A: Well, I think you heard from Mr. Rich
11 earlier that we're considering a number of long-term
12 supply options. Are you referring to those options
13 and those costs? Because we haven't really done
14 detailed estimates of that. And -- or are you
15 referring to the short-term? I mean, this application
16 is proposing an upgrade to the current Fort Nelson
17 plant. Is it that you're referring to?

18 MR. OULTON: Q: Well, what I was specifically referring
19 to is, if you could turn to page 72 of 166 of the
20 updated Appendix N-1, that's part of B1-10. So it's
21 page 64 of the actual appendix, but it's labeled page
22 72 of 166.

23 And I assure the Commission Panel I have
24 two questions, and then I'm done this segment.

25 THE CHAIRPERSON: Go for it, Mr. Oulton. Can you give me
26 the reference again, I'm sorry?

1 MR. OULTON: Sorry, it's the updated Appendix N-1.

2 THE CHAIRPERSON: I've got that.

3 MR. OULTON: To the application that was provided as part
4 of Exhibit B1-10, and it's page 72 of 166.

5 THE CHAIRPERSON: 72. Thank you.

6 MR. OULTON: Q: It should have a Figure 7-3, levelized
7 dollars per megawatt hour from 2012 through 2027. And
8 I'm not an economist, and get confused by graphs, but
9 as I understand this graph, this is a levelized cost
10 estimate for the price of the incremental load
11 increases. And it -- all the data points are above
12 \$100 per megawatt hour. And I took from that that the
13 expected cost of this incremental load is going to be
14 more than \$100 per megawatt hour. Am I correct in
15 that?

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

17 MR. OULTON: I note the time. This is a very convenient
18 time for a break.

19 THE CHAIRPERSON: That's good.

20 Mr. Fulton, what does tomorrow look like?
21 Other than the fact it will probably be raining again,
22 but --

23 MR. FULTON: Yes, well, apart from the weather outside,
24 Mr. Chairman, I see tomorrow as us finishing with Mr.
25 Oulton, and then my cross-examination of this panel,
26 any re-examination that my friend Mr. Godsoe has, but

1 prior to that any questions the Commission Panel has.
2 And so, I think in terms of my crystal ball at this
3 point, that we would be finished some time around noon
4 at the outside. And Panel 3 of B.C. Hydro will not be
5 available until Friday, so that means that we will
6 have some down time tomorrow. As the person who
7 coordinates things here, I need to take the
8 responsibility for that, and for that, I do apologize,
9 but there are some witnesses that are coming from out
10 of town that it just didn't work to have them here
11 based on the estimates that we had up until now, so --

12 THE CHAIRPERSON: So seeing as --

13 MR. GODSOE: I can assure the Commission there will be no
14 break between Panel 3 and Panel 4. We will have Panel
15 4 ready to go.

16 THE CHAIRPERSON: I assume that if, then, we start at 8
17 -- continue to go at 8:30, and we will just go until
18 we finish. So, and if we finish at 12:30, we won't
19 break for any lunch, we'll just go till lunch time.
20 Does that sound reasonable?

21 MR. FULTON: Yes, thank you, Mr. Chairman.

22 THE CHAIRPERSON: We will -- we are adjourned till 8:30
23 tomorrow morning, then.

24 **(PROCEEDINGS ADJOURNED AT 4:04 P.M.)**

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