

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 Review of the F2007 and
F2008 Revenue Requirements Application (“RRA”) and
for the Review of the 2006 Integrated Electricity Plan
(“2006 IEP”) and the Approval of the 2006 Long-Term
Acquisition Plan (“LTAP”)**

**Vancouver, B.C.
June 5, 2006**

BC Hydro TECHNICAL WORKSHOP

BEFORE:

R. Hobbs,	Chairperson
L. A. Boychuk,	Commissioner
A. J. Pullman,	Commissioner

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VANCOUVER, B.C.

June 5, 2006

(PROCEEDINGS COMMENCE AT 10:00 A.M.)

MS. SOFIELD: Good morning, and welcome to this technical workshop on B.C. Hydro's fiscal '07 and fiscal '08 revenue requirements model. In particular, I'd like to welcome the Commission panel, although you're obviously all very welcome and I'm pleased to see this much interest, that's great.

My name's Joanna Sofield, I'm B.C. Hydro's Chief Regulatory Officer, and I'm hosting this workshop today. With me is Wayne Taylor. Wayne is a consultant who's been working with B.C. Hydro to assist us in the preparation of our revenue requirement application this year, and in particular has advised and assisted with the development of this -- of the revenue requirement model. So Wayne will be taking us through that more detailed part of the presentation.

The agenda for the workshop -- that was the prompt.

MR. TAYLOR: That was the prompt.

MS. SOFIELD: The agenda for the workshop today -- that's got a slight -- slight --

MR. TAYLOR: Now we have a technical problem.

1 MS. SOFIELD: -- that's all right, someone will fix it.
2 The agenda for the workshop today is, I will give a
3 brief overview of the layout of the application
4 document itself, just a very brief overview, and then
5 I'll -- as I said, I'll hand over to Wayne to do the
6 detailed presentation on the model. He has a few
7 high-level slides to go through, but essentially we're
8 going to use the actual model itself, the spreadsheet,
9 as the -- as the tool, or the means to take you
10 through its design and use.

11 I'm going to ask that you save your
12 questions until after Wayne has run through the
13 presentation. And I know that that's -- can be
14 challenging in a technical workshop of this nature.
15 However, from a format perspective, we would like it
16 if, once Wayne has completed the presentation, the
17 Commission panel then has an opportunity to ask their
18 questions and receive answers. And I should point out
19 that there is a formal record being created while the
20 panel is in attendance. Then once that part of the
21 agenda is complete, I understand the panel will leave
22 us, and then participants will have an opportunity to
23 ask questions. We can then go back into further
24 details on the model and give further explanations and
25 clarity where you need that.

26 So we would like to use the workshop to

1 give you a good understanding of the model, so that
2 you can take it away and use it. So to make the most
3 of today's time to achieve that, I would note that the
4 scope of the workshop is limited to layout, structure
5 and logic. I do believe that there will be some other
6 forthcoming opportunities in the not-too-distant
7 future to ask a lot of questions about the content of
8 the application itself.

9 So, just to give you an idea of -- or an
10 explanation, if you like, of the layout of our
11 application, no doubt you've had time now to go
12 through it several times, and are very familiar with
13 it, but just in case you haven't, I thought it would
14 be useful if we showed it on one page, how our
15 application is laid out this time.

16 The blue figures in these boxes are the
17 chapter numbers, to be clear on that. Chapters one
18 and two are effectively providing us -- provide you
19 with a summary of the revenue requirements and a high-
20 level discussion of the cost drivers behind the fiscal
21 '07 and '08 numbers. Chapter one also gives a summary
22 of the requests that B.C. Hydro is making to the BCUC
23 in this application. Chapter two is the consolidated
24 financial view, and it covers off a number of
25 important areas such as depreciation, the deferral
26 accounts, corporate cost allocations and changes in

1 accounting treatments. You'll note that chapter two
2 has schedules attached to it as part of chapter two.
3 These are entirely consistent with the revenue
4 requirement model that we'll be going through today,
5 so essentially we have in two places in the
6 application, both in the schedules in chapter two and
7 as Appendix C, the financial schedules for the revenue
8 requirement.

9 So the balance of the application is best
10 understood, I think, in two broad areas -- one on the
11 left-hand side here, and one on the right. The left-
12 hand side of this diagram being chapters that present
13 either critical expenditure areas or enterprise-wide
14 topics. The chapters on the right-hand side of the
15 diagram are those chapters that represent more of a --
16 they represent the functional view of the organization
17 by business area.

18 **Proceeding Time 10:05 a.m. T2**

19 So just quickly running through, sorry,
20 those on the left: cost of energy, capital expenditure
21 summary, which, to be clear, details all of what the
22 capital expenditures are. Capital expenditure plans
23 are in these business area chapters detail.

24 Chapter 5 then, the enterprise-wide topics
25 that cover, as I said, things that are important
26 across the whole organization such as safety, such as

1 human resources and strategic workforce planning. It
2 also -- that chapter also includes some topics that
3 don't sit within a business area and do warrant
4 addressing as a separate topic, such as transmission
5 and such as Site C.

6 Chapter 11 is an update on the status of
7 B.C. Hydro's work in relation to the directives that
8 came out of the fiscal '05-06 revenue requirement
9 decision, and also for completeness, the commitments
10 -- the status of the commitments made and the 2005
11 REAP NSP.

12 And now as I said, Chapters 6 through 10 on
13 this side provide the plans for the business areas in
14 B.C. Hydro down to a business unit level, and those
15 include both the operating and capital expenditures
16 for the test period, as well as specific performance
17 metrics and the full-time employee data for each of
18 those areas.

19 And the appendices, not to forget them, of
20 which I will admit there are many, provide the backup
21 and the detail to the main part of the application.
22 Those worth noting right now would include Appendix C,
23 which is the output of the spreadsheet model that
24 we're looking at today; Appendix F, which contain the
25 depreciation studies; and the specific generation
26 facility capital plans which are in Appendix H through

1 N.

2 I'm now going to hand over to Wayne to take
3 us through the model.

4 MR. TAYLOR: Well, good morning, everyone. Can you hear
5 me all right?

6 I wanted to start by just discussing why we
7 put this model together, and as you can see, the main
8 purpose was to put together in a single Excel Workbook
9 a set of schedules that were all linked and all added
10 up to the requested revenue requirement. So that was
11 the main model, so people could follow the numbers. I
12 heard rumours -- I wasn't involved in the last revenue
13 requirement application, but I did hear that there was
14 some difficulty following the numbers. So the main
15 objective here is to provide a tool so you can see all
16 the numbers come together to add up to the revenue
17 requirement.

18 Of course, having that tool, then it does
19 enable parties to undertake sensitivity analysis. So
20 there are some simplifications in the model that I'll
21 discuss in another slide here, but subject to the
22 simplifications inherent in the model, the model will
23 allow parties to make different -- make changes to the
24 assumptions or forecasts that B.C. Hydro has made,
25 that we've made, in putting together this application.
26 And I will, as I go through the Excel Workbook, I will

1 point out the simplifications that I've made so we
2 could have a model that was of a reasonable size. So
3 there are some situations where the sensitivity
4 analysis may not be as precise as a detailed review
5 using all the internal models that Hydro has of the
6 changes to these assumptions, but in many cases -- but
7 it will be close, and I will go through those in a
8 moment here.

9 Before I jump in here, I did want to say --
10 I know, Joanna, you said if the Panel as well could
11 hold their questions till the end. I'm quite
12 comfortable to take questions as we go. I believe --
13 my understanding was you wanted to leave before the
14 rest of the participants ask questions. Is that fair?

15 THE CHAIRPERSON: That's correct.

16 MR. TAYLOR: So, but please feel free. I'm happy to take
17 questions. We did a dry run of this on Thursday with
18 some employees at Hydro, and it runs about an hour and
19 a quarter or so, and so it's long time to save up
20 questions. So please feel free. It'd be easier for
21 me too actually, so.

22 Before I open up the Excel Workbook, I
23 thought I would just go through a schematic here of
24 the workbook. So the numbers at the front here are
25 the tab numbers that you'll find in the workbook for
26 those of you who have the workbook open already.

1 **Proceeding Time 10:10 a.m. T03**

2 And tab number one is the revenue requirement. It's
3 kind of the final schedule, which builds up to the
4 total revenue requirement, and shows the requested
5 rate increase. All the other schedules are used,
6 then, to build up to that revenue requirement -- with
7 one exception. You'll see, down in the left-hand
8 corner, we have a schedule number 16, which is FTEs.
9 That is provided just to be helpful. That is not
10 actually used in the development of the revenue
11 requirement, but there was nowhere else in the
12 application where the FTEs are actually summed up to
13 give a total. Each business unit provides, within
14 their chapter in the application, provides their
15 forecast of FTEs, but there was nowhere in the
16 application where that all added together. So that's
17 just a summary table of FTEs provided for information.
18 But all the other schedules are used in the
19 development of the revenue requirement.

20 Schedule 14 and 15 provide the forecast of
21 both domestic revenue and miscellaneous revenue and,
22 of course, the domestic revenue is used to compare to
23 the revenue requirement and determine whether there's
24 a surplus or a shortfall, and determine what the
25 percentage rate increase is, or decrease, potentially
26 is, in the application. So that's where the revenue

1 is entered into the model.

2 And I'm just going to actually work
3 backwards. This is the way I'm going to go through
4 the model, when we get to the Excel workbook. But
5 working backwards, the next thing that we add, we
6 enter, is capital additions and expenditures. And
7 these are entered by business area, and any difference
8 between expenditures and additions goes into
9 unfinished construction.

10 Capital expenditures and additions, of
11 course, feed into a number of things. They feed into
12 the determination of net property, net book value, by
13 business area. By the way, my little "X" here, you'll
14 see some of them have Xs and some of them have zeroes.
15 The X means that there's a series of schedules, one
16 for each business area, generation, distribution, and
17 so on. The zero means there's a single schedule.

18 So the forecast of capital expenditures and
19 additions feeds into the derivation of the net
20 property by business area. It of course is also a
21 factor that determines the amount of financing that's
22 required, and hence the cost of debt. That's in
23 schedule 13. As I said, schedule 12 develops the net
24 property by business area. Net property is used in
25 two places -- it's used as one of the elements that
26 goes into the determination of depreciation expense,

1 also known as amortization these days, and it's also
2 used to develop the schedule that's called "rate
3 base".

4 Now, rate base is simply a comparison of
5 the net property of generation, transmission and
6 distribution, and that is only used to allocate the
7 finance charges and the return on equity by business
8 unit. That's the only place that's used. But of
9 course, assets is required to determine that, as is
10 contributions.

11 So, moving now to schedule 11, schedule 11
12 is used, as I just mentioned, to determine the rate
13 base by area. Also, it's used to determine ROE.
14 Equity is defined to be essentially retained earnings
15 plus contributions, plus some deferred revenue. I'll
16 come to that later. That's where contributions is
17 used. Contributions is also an offset to
18 amortization, and also is a source of cash, which
19 feeds into our determination of finance charges.

20 Questions so far? We doing all right so
21 far?

22 All right. So, I've talked about rate
23 base, rate base feeds into return, rate base feeds
24 into financing charges, that gets me to schedule 7,
25 which I mentioned before, is amortization. It's
26 determined in part by the depreciation of physical

1 assets, which is on schedule 12 series, it's offset by
2 the amortization contributions. There are also some
3 other aspects, other elements of amortization that are
4 input directly into schedule 7.

5 Then, working up this column, we have
6 taxes, operating expense, costs of energy, and
7 miscellaneous revenue, which essentially all flow
8 directly into the revenue requirement. And you'll see
9 they all flow into a set of schedules that I've called
10 "3X, total costs". What total costs is is essentially
11 the revenue requirement by business area. So I build
12 that up for generation, transmission, distribution,
13 corporate, and so on, and the only difference between
14 Schedule 3 and Schedule 1, other than the fact
15 Schedule 1 is just the total by company, is the
16 deferral accounts. So these schedules are before any
17 consideration of deferral accounts, and Schedule 1 of
18 course brings in the deferral accounts.

19 **Proceeding Time 10:15 a.m. T4**

20 THE CHAIRPERSON: The rate base as you define it is the
21 amount that you earn return on pursuant to special
22 direction.

23 MR. TAYLOR: No. No, that number, known as equity, is
24 determined in Schedule 9 here. Rate base is the more
25 traditional definition of rate base: net property
26 less contributions. That is determined for

1 generation, transmission and distribution and is only
2 used to allocate percentage-wise, finance charges and
3 return on equity into those three business units.
4 That's the same way it's been done before. I didn't
5 change that. But that's the only reason we developed
6 that rate base and the only way it's used. Equity is
7 determined on Schedule 9.

8 I mentioned there are some simplifications
9 in the model so that some of the sensitivities will
10 not be precise or will not yield exactly the same
11 answer as a detailed assessment of those changes and
12 assumptions. One of the key ones is that the model
13 assumes that any change in cash requirement is treated
14 as a change in revolving debt, short-term debt. So if
15 cash requirement goes up, short-term debt costs go up.
16 If cash requirements go down, short-term debt costs go
17 down. In other words, the long-term debt is assumed
18 to be fixed in the model.

19 Now, unless there's a material change in
20 cash requirement, that's probably a reasonable
21 assumption. But at some point if you did have a
22 material change in cash, at some point your Treasury
23 Department would go back and revisit your long-term
24 financing plan and you would get a different impact on
25 your revenue requirement if you change your long-term
26 debt. So that is a key simplification in the model.

1 The second key simplification is that
2 amortization expense is calculated using a -- Brian?
3 Calculated using a weighted average amortization rate
4 for each business area. So the model uses a weighted
5 average amortization rate for generation, for
6 transmission, for distribution and so on. And so if
7 there is a change in capital additions in generation,
8 that change flows through to amortization expense
9 using the weighted average amortization rate for that
10 business unit.

11 Now, B.C. Hydro's accounting system
12 actually has much more detail in it. It actually
13 tracks by vintage, by class of property, the remaining
14 life of each asset. And so -- and I'll come to one
15 example here in our model where using a weighted
16 average is probably not that precise. Well, I'll tell
17 you right now so you don't forget. If you look at the
18 corporate area, it turns out that the weighted average
19 amortization rate is about 5 percent. And that's
20 because in corporate there is a combination of IT,
21 which has a short life, relatively short life, and
22 buildings, which have a relatively long life. And if
23 you do that, weighted average by property class, by
24 vintage, you get an average amortization rate of 5
25 percent. But most of the IT forecast -- most of the
26 capital forecast in the corporate area is IT, which

1 has a life of at most ten years, probably somewhere
2 between five and ten -- I don't know the details here
3 -- but would have an amortization rate much higher
4 than 5 percent. So there is a simplification in the
5 model that if there was a material change in the
6 capital in the corporate area, we probably wouldn't
7 get a very accurate change in amortization expense.

8 On the other hand for generation, there's a
9 pretty stable mix there. If you change generation
10 capital or distribution capital, they won't be exactly
11 the same as the detailed internal assessment, but it
12 would be pretty close. That's another key
13 simplification.

14 There is somewhat of a simplified
15 calculation of the dividend. The dividend is equal to
16 85 percent of the earnings, less IDC and amortization
17 of IDC. And in the model, there wasn't sufficient
18 detail to calculate the amortization of IDC, and to
19 keep the model manageable we have a simplified
20 calculation of that dividend in there that I'll show
21 you when we get to that I'll show you when we get to
22 that page in the model.

23 **Proceeding Time 10:20 a.m. T05**

24 Similarly, for the calculation of water
25 rentals, you may know that water rentals is actually a
26 function of rate increase, the rate increase, but

1 there's a bit of a lag, so that you really should look
2 at that monthly. The way that works is, the water
3 rentals go up on January 1st, based on any rate
4 increase you had in the prior calendar year, so
5 there's a bit of a lag between your rate increase and
6 the impact of that rate increase on water rentals. So
7 you really should do that calculation monthly. The
8 model is not a monthly model, it's an annual model, so
9 we've simplified the calculation of the impact of
10 proposed water rentals a little bit, so we didn't have
11 to build in the monthly variation of water use.

12 I've also -- don't have built into the
13 model the detailed calculations that are used to
14 allocate corporate costs to the business units. So
15 what we've simply done is, we've taken the results of
16 some internal work and simply hard-coded the
17 percentage allocation of corporate costs to the
18 business units. So if the corporate costs were to
19 change, they would be allocated using the same
20 percentages as they are in the application. We don't
21 go through and basically re-allocate those based on a
22 reason, or the driver of the change in corporate
23 costs. So a minor -- oh, I shouldn't say minor, but a
24 simplification there.

25 And the other thing that we've done is,
26 we've essentially fixed working capital. I don't have

1 working capital derived in the model, we have simply
2 fixed that. So if there were to be some change in
3 assumptions that were to affect working capital, that
4 would have to be hard-coded into the model.

5 So it sounds like a lot of simplification.
6 We don't want to scare you off. The model actually,
7 for most examples, would yield a fairly accurate
8 indication of the change in revenue requirements. And
9 we'll go through some of those examples later.

10 Questions?

11 THE CHAIRPERSON: Have you run some scenarios to test the
12 model against the broader models that you use?

13 MR. TAYLOR: We've run some scenarios to test it
14 against -- we haven't actually run it specifically
15 against broader, but we've -- yes, we've run several
16 sensitivities, and done some reasonableness or sanity
17 checks on them, so we know that it's reasonable, and I
18 was planning to do some at the end of the day, if you
19 want to stay for that. I'm not sure if you wanted to
20 stay for that or not. But, yes, we have.

21 So, now, I'm about to fire up the Excel
22 workbook here, for those of you that want to follow
23 along in your laptops. Just a couple of things that I
24 wanted to let you know before we get going. You may,
25 when you first fire it up, get an error message that
26 says "Circular reference." Anybody get that message

1 when they tried to fire it up? And that's okay to get
2 that error message, because we've deliberately built
3 in a loop here -- two loops, actually. Return on
4 equity, the return is a component of equity, and
5 there's a -- there is a circular reference there, and
6 so the model does iterate to a solution on equity.
7 And as I mentioned previously, we also have a bit of a
8 loop on water rentals. So, I will show you, as soon
9 as I turn off PowerPoint here, how to turn that
10 iteration option on, if you don't have it on.

11 I wanted to just let everybody know here,
12 there's no hidden cells, there's no locked cells, so
13 you can go in there and see all the formulas, and add
14 rows and add columns, do whatever you want. But there
15 are a lot of links, so if you are going to play with
16 that, just be careful that there are a lot of links
17 between the different sheets in the workbook here, so
18 you need to be a little cautious if you're actually
19 going to start changing the structure of the model. I
20 have, to be helpful, I have tried to highlight in blue
21 that you'll see on your screen here, those cells which
22 I thought would be the input cells that you would most
23 likely want to change. And if you stick to just
24 changing the cells that are in blue, I'm reasonably
25 confident the model will work fine. If you start
26 changing formulas and stuff, you're on your own.

1 sit down here and turn off PowerPoint and fire up
2 Excel. If you'll excuse me for a second here.

3 THE CHAIRPERSON: And while you're doing that, I'll make
4 a few comments. I appreciate that my back is to you
5 but I want to make sure that this is picked up.

6 This format is new for the Commission with
7 the attendance of the Panel, and I want to acknowledge
8 to some degree having us here is a disadvantage in
9 terms of the format that you're following, because I
10 do think it's important, particularly for this first
11 occasion, that we confine questions to you to those
12 from the Panel. It does mean, I think, Wayne, that
13 you may very well return to some of this after we
14 leave, and I encourage you probably in your first run
15 through it, while we're in attendance, to move through
16 it fairly quickly, anticipating that you may very well
17 need to return to it later after we leave.

18 And as I say, this is the first time that I
19 think that the Commission has been in attendance
20 during a technical workshop. For those of you who are
21 so inclined and you wish to provide some comments back
22 to the Commission as to whether or not this is a good
23 idea, please do so through Mr. Fulton, Gordon, when
24 the workshop comes to a close. But I think for the
25 purpose of this workshop at the very least we need to
26 confine questions to those that the Panel has while

1 you're running through this, and then, as I say, we
2 will leave.

3 There are a couple of purposes to
4 workshops, and one of them is to give people an
5 opportunity to have a frank discussion about the
6 application early, and I don't want to curtail that.

7 MR. TAYLOR: Thank you, Robert, and with that advice I
8 will try and run through this as quickly as I can
9 while still being coherent.

10 So this is -- for those of you -- well, let
11 me, sorry, back up here. If anyone -- does anyone
12 have loaded on their machine a version of the model
13 that was distributed before the ones that were
14 distributed today? Because if everyone's got the one
15 that was distributed, there was one cell that we found
16 a number in that should have had a formula in when we
17 did the dry run. But if everyone's using the model
18 that Alf handed out today, we're fine.

19 So this is tab 1 and you'll see -- you
20 probably can't see this at the back, but down along
21 the bottom you'll see the tabs in the workbook. Those
22 are the tab numbers that correspond to that nice
23 picture I showed you in PowerPoint a second ago, and
24 also there is an index page if you don't hang onto
25 that PowerPoint presentation. There is an index page
26 that has the same table of contents.

1 So we're starting here at Schedule 1, which
2 is the summary. This is the revenue requirements.
3 And I wanted to just a format things first, discuss a
4 couple of format things first. You'll see that we
5 have four sets of columns. The first set of columns
6 is fiscal 2005, and within those columns we start with
7 the RRA. Now, what the RRA numbers are, those are the
8 numbers that were approved by the Commission in the
9 fiscal '05-06 revenue requirement. Now, I know the
10 Commission didn't approve each line item here, but
11 those are the numbers that are consistent with or were
12 in the final refiling pursuant to the Commission's
13 '05-06 decision. So that's basically the last
14 decision.

15 Then we have the actuals for '05, and the
16 difference is just the arithmetic difference, of
17 course.

18 Now, then we have the same sort of columns
19 for '06. We have the numbers that were in the final
20 refiling pursuant to the last decision. In this case,
21 these weren't actuals at the time the application was
22 prepared, so we've called that the forecast. There
23 were X months of actuals and Y months of forecasts
24 that went into that, depending on when the line item
25 was prepared. So that a partial year of actuals and
26 the balance of the year as forecast. We've called**

1 that to fiscal 2006 forecast, and again the arithmetic
2 difference.

3 Then we have the test period, which, to
4 distinguish it from '06 we've called "the plan". We
5 have the '07 and the '08 plan.

6 And then the last set of columns is simply
7 the increase, year over year increase. So this is '06
8 forecast compared to '05 actual, '07 to '06 and so on.
9 That's just the arithmetic increase from year to year.

10 So, and all the tables have the same
11 structure, okay?

12 **Proceeding Time 10:30 a.m. T07**

13 Another thing I wanted to point out here is
14 the reference column. Where I have a schedule number
15 in the reference column, what that means is the
16 numbers in that row have been pulled forward from that
17 schedule. So you can see all the first -- one through
18 eight -- are all pulled forward from schedule 3, which
19 we will get to in a second here. And so they're
20 basically -- they're not entered, they're all pulled
21 forward. If there is no reference number, reference
22 schedule, that means one of two things. Either it's a
23 calculated line, like a sub-total -- line 11 is just a
24 sub-total, so it's calculated -- or it's an input
25 value. And as I mentioned before, I did try to put
26 all the input values, or at least the input values I

1 thought you might want to change, in blue.

2 So we see here we have the traditional
3 line, lines in a revenue requirement, energy costs,
4 operating costs, and so on. The deferral account, is
5 shown here, then the subsidiaries. The only place the
6 subsidiaries show up in this model is on this
7 schedule. And they are shown simply by deducting the
8 forecast of net income from the revenue requirement.
9 So these numbers are input numbers on this schedule.
10 And they're blue.

11 And then right down at the bottom, it
12 should probably be hard to see at the back here, if
13 you don't have your computers open, we then compare --
14 we take the total revenue requirement, excluding --
15 that's Skagit, here -- that gives you the total
16 revenue requirement by the utilities on line 15 is
17 Skagit -- then we compare that to the forecast of
18 revenue on current rates, which is pulled forward from
19 schedule 14. And then you get some arithmetic to get
20 the difference between the revenue requirement and the
21 forecast of revenue at current rates, and then there's
22 a little bit more arithmetic here to translate that
23 into a required rate increase.

24 So right at the very bottom, if you can see
25 that, we get a required rate increase of 4.65 in '07
26 and 2.71 in '08. And that's -- as I say, this is kind

1 of the final output from the model, and builds up to
2 the total revenue requirement.

3 So what I'm going to do, if there's no
4 questions at this point -- make sure I didn't forget
5 anything -- I'm actually going to jump right to the
6 back of the model and work forward to show you how we
7 built up to this revenue requirement.

8 So for those of you that are following
9 along, if you just scan all the way to the right, and
10 we'll start with FTEs, which is 16. Now, I'm not
11 going to spend any time on this one, but I did want to
12 just remind everyone that this is provided to be
13 helpful for information, but it's not actually used in
14 the model. This was just a summary of the FTE data
15 that's scattered throughout the application, so you
16 can see the total FTEs in '05, '06, '07, '08. And by
17 the way, I should have mentioned before -- if I go
18 back to the revenue requirement page, you'll see here
19 that all the columns are filled out. I have the last
20 revenue requirement numbers, I have forecasts, I have
21 -- all the columns are filled out. There are some
22 schedules where the revenue requirement numbers were
23 not available, there is even one schedule where I
24 didn't have '05, especially down at the business unit
25 level. So, we've included all the columns where we
26 could, but if you see some schedules where the columns

1 are not all filled in, that's simply because we didn't
2 have them available.

3 So FTEs is a good example. My
4 understanding is, FTEs weren't used in the last
5 revenue requirement and so there simply aren't
6 comparable numbers for FTEs. It was something that
7 was introduced this time, the notion of FTEs, and so
8 coming back to FTEs here, there simply are no RRA
9 numbers. There were no RRA numbers to put in, so
10 that's why there's no RRA numbers there.

11 I'm going to go now to schedules 14 and 15.
12 We'll start with 14. 14 is the domestic energy sales
13 and revenue forecast. By the way, this is the only
14 schedule where the increase, the change from the prior
15 year, and the increase year-over-year is shown in
16 percentages rather than dollars or gigawatt hours.
17 And that was just because for this schedule it seemed
18 to make more sense to you as a percentage change or
19 percentage increase than a dollar change or a gigawatt
20 hour increase.

21 **Proceeding Time 10:35 a.m. T8**

22 The energy sales figures here are not
23 actually, again, used anywhere in the model other than
24 to calculate the dollars per megawatt hour average
25 revenues shown in the bottom half of the table. The
26 revenues however are used. The 2756.1 is used back on

1 Schedule 1. That's one of the numbers that is used to
2 compare the revenue requirement to the revenue on
3 current rates. The other number that's specifically
4 used is the 18.5. That's the Skagit. That's also
5 shown on Schedule 1 that we just looked at here. So
6 these are the numbers that are actually used in
7 Schedule 1.

8 You'll notice one of these are in blue, and
9 the reason for that was that there are a series of
10 models that are used, econometric models that are used
11 to develop this forecast, but those econometric models
12 are not build into this model, again to keep this
13 model manageable here. So you can go in and change
14 any of these numbers that you want, but they're hard
15 coded. They're not linked to the tools that the
16 forecasting group used to develop their energy sales
17 and revenue forecast.

18 THE CHAIRPERSON: Wayne, are the increases over actual
19 where there's an actual and over forecast and plan
20 where there's the previous year's forecast for the
21 plan?

22 MS. TAYLOR: These increases in the right-hand column, so
23 these are always actual, actual of -- these are always
24 the actual to the forecast to the plan.

25 THE CHAIRPERSON: Oh, so it's a cumulative -- so F'07
26 is --

1 MR. TAYLOR: No, sorry.

2 THE CHAIRPERSON: F'07 is --

3 MR. TAYLOR: F'07 should be this number divided by this
4 number.

5 THE CHAIRPERSON: Okay, so plan over forecast in the case
6 of --

7 MR. TAYLOR: Plan over forecast. F'06 should be 16147
8 over 15 and 814.

9 THE CHAIRPERSON: Over actual.

10 MR. TAYLOR: Over actual, and then is obviously plan over
11 plan.

12 THE CHAIRPERSON: Thank you.

13 MR. TAYLOR: Is that helpful?

14 THE CHAIRPERSON: Mm-hmm.

15 MR. TAYLOR: And that's the same for all the schedules.
16 And that was done principally because for many of the
17 schedules, we don't have the RRA data. So -- but we
18 almost always have the actual and forecast so we just
19 use those numbers. You could change that, of course.

20 All right, I'm going to just very quickly
21 look at the miscellaneous revenue. Now, this
22 miscellaneous revenue is treated as an offset or
23 reduction to the revenue requirement, and I'll show
24 you when we get there where these numbers come into
25 the revenue requirement. But I simply wanted to point
26 out here that they're all blue, which means they're

1 all simply input. So if you wanted to change any of
2 these forecasts, you would simply go in there and you
3 could change them and they would flow right through to
4 the revenue requirement. So I think that's all I'll
5 -- in the interest of moving quickly here, I think
6 I'll just keep going on that. Those are all just
7 input.

8 So going back to Schedule 13 now, this is
9 capital. This is one of the key input tables. This
10 is the table where we input both capital expenditures
11 and capital additions by business area. And you'll
12 notice in addition to the usual business areas of
13 generation and distribution, we also have DSM as a
14 separate area. We treat that somewhat differently for
15 capital. And any difference between the forecast of
16 capital expenditures and additions is -- this is
17 calculated now, it becomes a difference in unfinished
18 construction, and then later on I'll show you where
19 the interest is applied to unfinished construction and
20 is actually an offset to the financing charges. So
21 that's an important schedule but a simple schedule
22 there.

23 So I'm going to go now to assets. Now,
24 there's a series of asset tabs, one for each area. I
25 think I'll just -- well, I'll just pick one here.
26 I'll pick distribution. We can pick any one. So what

1 we do on each of these asset schedules is we determine
2 the net assets in service for each area. Now, we have
3 the opening balance from the prior year. The capital
4 additions, line 2, are pulled forward from the
5 schedule we just looked at, schedule 13. So if you
6 make a schedule in 13, it'll automatically show up
7 here on this schedule.

8 **Proceeding Time 10:40 a.m. T09**

9 Retirements are actually input at this
10 stage, here. So, if there are any retirements, or if
11 you want to change the forecast assumption on
12 retirements, you can enter them right there.

13 We do calculate on this page the
14 amortization or depreciation expense by taking the
15 amortization rate and applying that to the gross
16 assets. And as I mentioned earlier, this amortization
17 rate is kind of the weighted average amortization rate
18 for the business area, distribution in this case. So
19 if you look at the -- take the amortization that falls
20 out of the detailed review, asset category by asset
21 category, vintage by vintage, that was done
22 internally, translate that into a weighted average
23 amortization rate for distribution, you would get 2.38
24 percent, which means that if you change the forecast
25 of additions, the amortization rate, the change in
26 amortization rate, will be equal to 2.38 percent times

1 the change in -- well, actually there's a mid-year
2 thing going on here, but ignoring the mid-year effect
3 for a moment, it'll be calculated at 2.38 percent.

4 THE CHAIRPERSON: And the 2.38 percent is an input
5 because -- why is -- why have you flagged it as an
6 input?

7 MR. TAYLOR: Yes. So the way this works, Robert, is
8 the actual forecast of amortization expense here, for
9 distribution in this example, was determined by
10 distribution going to each of their property classes,
11 by vintage, and for each of their property classes,
12 for each vintage, they know the -- know in their
13 accounting system the remaining life for that class,
14 for that vintage. And so, there -- the depreciation
15 expense is calculated by vintage, by property class,
16 add it all up, you get 113.3. I didn't have in the
17 model that level of detail on property. I don't have
18 it by class, I don't have it by vintage. So I took
19 the 113.3 and said, "Well, what amortization rate
20 applied to this property would give you 113.3?" And
21 worked out -- worked that backwards. And if you do
22 that, you get 2.38.

23 And the advantage of doing that is now, if
24 you play a what-if game, and change the capital
25 addition forecast, you will get some -- you will get a
26 change in amortization expense that is close. It

1 might not be exactly the same as saying to -- saying
2 you want to change this from 400 to 300, or 400 to
3 500, and going back now and doing a detailed -- asset
4 category by asset category, vintage by vintage --
5 doing a detailed calculation of how that changes the
6 113.3, but at least for distribution, it'll be pretty
7 close. And I wanted to show you -- and actually maybe
8 I'll just do that right now. If you go to corporate,
9 as I mentioned before, corporate is one area -- here's
10 corporate -- corporate is about five percent.
11 Corporate, that may not be a reasonable assumption,
12 because corporate's about five percent, because
13 there's a mix of assets in there. Some are very --
14 have very long lives, like buildings. Some have short
15 lives, like PCs. And on average, it works out to a
16 life of about twenty years, five percent.

17 But if most of your capital additions were
18 PCs, for example, assuming a life of 20 percent
19 wouldn't be reasonable. It turns out that it's five
20 percent because, you know, there's a mix of existing
21 assets in there, some of which are long lived and some
22 of which are short. But if you were just to change
23 your forecast of capital additions, what the model is
24 going to do is assume that change is basically is a
25 20-year life.

26 So that is a simplification, simply because

1 I didn't have, and didn't want to build in, all the
2 property classes and there are, like, pages of these,
3 by year. It's a lot of detail in their accounting
4 system.

5 THE CHAIRPERSON: Right. What I was curious about was if
6 -- if one makes a change to IT, for corporate, the
7 4.87 is an input, so it doesn't change.

8 MR. TAYLOR: That's right.

9 THE CHAIRPERSON: It's going to continue to be the
10 weighted average based on the old mix of IT and land.

11 MR. TAYLOR: That's correct.

12 THE CHAIRPERSON: So the 4.87 percent doesn't change, and
13 yet you have it as an input in the model, and I was
14 wondering why -- are you anticipating that some people
15 will make changes to that 4.87, make a best guess as
16 to what it -- what it would be if you did it through
17 the detailed schedules?

18 MR. TAYLOR: Well, what I -- what I attempted to do was
19 to actually divide this into two pieces -- one, the
20 amortization on the current assets, and then the
21 amortization on the forecast assets. It turned out
22 that that just was too hard to do. The system wasn't
23 capable of pulling those numbers out easily the way
24 they had done data, which might have been more
25 accurate then, because then for corporate I could have
26 had, you know, the forecast amortization expense

1 reflecting the mix of forecast capital additions.
2 Unfortunately I simply did not have the data available
3 to do that. So you're very right, and that was the
4 reason I raised that caution with corporate.

5 **Proceeding Time 10:45 a.m. T10**

6 Now, for generation though, I believe for
7 generation you're probably pretty safe here.
8 Generation is a much larger base. You know, the mix
9 is more homogeneous than it is in corporate. So for
10 the business areas, generation, transmission,
11 distribution where most of the capital is, is probably
12 a reasonable assumption. Corporate is the one we have
13 to be careful with. So it would mean that, you know,
14 if you wanted to do that, we probably would have to,
15 yes, work out, change the percentage if we wanted to
16 get closer.

17 I did want to -- actually I'll go back to
18 -- I started with distribution. I did want to point
19 out one more thing here. There is a depreciation
20 study that's filed as part of the evidence, and for
21 most property classes the lives were extended, which
22 means the depreciation expense goes down. And you can
23 see this here. This is distribution. You can see
24 this here that the '06 is 2.64 percent and the
25 forecast '07 and '08 is down in the 2.38 range. What
26 you're seeing there is the impact of the changes to

1 depreciation resulting from the longer lives coming
2 out of the depreciation study. That's what's going on
3 there. And you can see that even again on -- there's
4 a total page here. This is total assets excluding DSM
5 now. So you see total, and this is all calculated,
6 there's no blue. You can see total assets. There's
7 about 17 billion in gross assets, about 10 billion in
8 net assets, and you can see the amortization rate, the
9 weighted average amortization rate going from 2.6 to
10 2.2. Now, at this level this is going to be pretty
11 stable. It has all the assets in there. And that is
12 the result of the changes and the lives resulting from
13 the depreciation study.

14 Now, there is just one last thing on assets
15 before I move on, and that's DSM. DSM again, because
16 it's a different type of asset, as you know it's
17 basically the amortization of incentives that were
18 paid to participants in DSM programs. In the
19 accounting system we don't have the same detail for
20 gross and net that we do for any other -- for physical
21 assets. So this is a little even further simplified
22 here in that these percentages are applied to net,
23 simply because we didn't have the gross and the
24 amortization is not tracked in the accounting system,
25 so there's a bit of a further simplification for DSM,
26 although that should be pretty close. As you probably

1 know, DSM assets are amortized over a ten-year period
2 starting in the year after the project is completed,
3 so a bit of a further simplification there.

4 Okay, I think that's all I had on assets so
5 I'm going to move now, if there's no further questions
6 at the moment, to contributions.

7 THE CHAIRPERSON: I do have one question. Is this DSM
8 schedule linked to the cost of power purchases?

9 MR. TAYLOR: No. Short answer.

10 Okay, contributions. First of all there's
11 one, two, three, four categories. There is the
12 Columbia River Treaty which is basically a fixed
13 schedule so that doesn't change. And then there are
14 contributions for generation, distribution and
15 transmission. Actually there are none forecast for
16 generation, so that's fairly straightforward, not
17 material numbers anyway. I'll scroll down so you can
18 see the bottom here.

19 There are some contributions in
20 transmission, not material compared to distribution,
21 and the amortization on them down there. You'll
22 notice that both the additions and the amortization is
23 simply an input here. It's hard coded, it's not
24 linked to anything.

25 **Proceeding Time 10:50 a.m. T11**

26 The key one of course is the contributions

1 for distribution, so you can see the additions here
2 are forecast at about 75, 70 million dollars, and then
3 the amortization.

4 I did want to point out though, I mentioned
5 the depreciation study generally lengthened the lives
6 of most assets. The depreciation study also
7 recommended a longer amortization period for
8 contributions, which results in a reduction to the
9 amortization of contributions. So this change from
10 about \$30 million a year for amortization down to the
11 17 to 18, 19 million, that again is as a result of the
12 recommendations in the depreciation study. That's
13 where that shows up. But generally those are all
14 input so I'm just going to keep charging on here if
15 there's --

16 COMMISSIONER PULLMAN: You didn't pick up the same
17 amortization rate as you did later on in, you know,
18 the 2.25 or whatever it was.

19 MR. TAYLOR: These are just amortization of
20 contributions, so no, these are just coded in here. I
21 don't -- I could have worked out the percentage but I
22 -- if you change --

23 COMMISSIONER PULLMAN: Well, you've done it in about four
24 schedules later. I just wondered why you hadn't done
25 it then.

26 MR. TAYLOR: For the physical assets I did that.

1 COMMISSIONER PULLMAN: Yes.

2 MR. TAYLOR: Because the reason I did that was if you
3 wanted to change the forecasts of capital additions, I
4 wanted to derive what the change would be in
5 amortization. You're right here. If you were to
6 change the forecast of additions, it would change the
7 amortization expense, a simplification. I didn't do
8 that. You'd have to do that manually. It's not --
9 you're right, it's not coded in there.

10 COMMISSIONER PULLMAN: Thanks.

11 MR. TAYLOR: Actually that -- you should keep notes on
12 upgrade. That's a good upgrade. For next time.

13 Okay, rate base. Now as I mentioned
14 before, this is only used to determine the percentage
15 of rate base for G, D and T, and those percentages are
16 in turn used to allocate return on equity and
17 financing charges into G, T and D. So that's the only
18 reason this page is here and the only reason it's
19 used. We don't use it for equity. We'll come to
20 that. And this is all calculated. There's nothing in
21 blue here. These are all pulled forward so it's
22 simply we pull forward net assets, we pull forward
23 contributions and work out the ratios. The only
24 wrinkle here is that DSM is split 90 percent to
25 distribution, 10 percent to transmission, as it has
26 been in the past. But except for that, that's just

1 some arithmetic there to get the percentages that
2 we're going to use later on.

3 So then we get to ROE and I'll going to
4 scroll up there then come back down.

5 So on schedule 9, for those of you
6 following along, and I'm going to start here at line
7 25, my line 25, and this is where return is
8 calculated. So we enter in the allowed return as a
9 percentage, 13.13, and it's my understanding that
10 falls out of a special directive in B.C. And then
11 that 13.13 percent is applied to the total equity on
12 line 22, to come up with the allowed return on line
13 25.

14 The tricky part here is the total equity on
15 line 22 includes return, and we'll scroll back down,
16 so there is a loop here. But the model does iterate
17 to a solution. So before I scroll back up here, the
18 bottom here is just arithmetic. So these percentages
19 that we just looked at on the rate base page are
20 simply used to allocated that return by business area.
21 That's just arithmetic at that point. So I'm going to
22 scroll back up here to look at the build-up of equity.
23 So equity is equal to retained earnings plus deferred
24 revenue plus contributions. And contributions are
25 simply pulled from the contribution page that we just
26 looked at, so they're just pulled in at this point.

1 Deferred revenue is calculated here and retained
2 earnings is calculated here. I'll do the deferred
3 revenue. And I put this in blue and maybe I shouldn't
4 have now because I understand -- this is all Skagit.
5 I understand this is actually on a schedule so there
6 may or may not be any cause to change that forecast.
7 I'm not that familiar with Skagit here but I have it
8 in blue. It is entered hard coded here.

9 There is a line for Other but it's forecast
10 to be zero, so. So I think that's relatively fixed

11 **Proceeding Time 10:55 a.m. T12**

12 And then that brings us to retained earnings. And
13 retained earnings are simply the opening balance, plus
14 the income minus the dividend, at least in the test
15 period. In prior years, there were some special
16 dividends and so on. But in the test period, it's
17 simply the opening balance, plus your net income,
18 minus your dividend.

19 Now, as I said before, your dividend,
20 there's a bit of a calculation there. It's 85 percent
21 of your net income minus IDC and amortization of IDC,
22 so I didn't have the detail in the model to calculate
23 the amortization of IDC, so instead, a simplification,
24 I hard-coded this percentage in here, so the dividend
25 is 82.2 percent of the net income. That's the effect
26 of going through that detailed IDC calculation. So

1 that's where those numbers come from.

2 So -- now, having said that, unless you
3 change equity, the only way we can change equity here
4 is by changing the contribution. These numbers on
5 this page probably won't change anyway, the way equity
6 is defined in B.C. But the model iterates to a
7 solution, so you can see that the 395.1 is the same
8 number that's included in retained earnings, which is
9 one of the components of the equity to which the 13.13
10 is applied, and similarly for the 414.

11 So you can actually go in here and change
12 the ROE, and it will work. It will iterate to a new
13 solution, and you can see what happens if you change
14 the ROE. But the assumption will be that this -- this
15 remains fixed -- the dividend as a percent of net
16 income.

17 So that's more -- that's not as complicated
18 as it looks, actually. It's fairly straightforward,
19 except for the loop.

20 Okay? So, next page is more complicated.
21 It's debt. And again, I'm going to start at the
22 bottom and work back up here.

23 Financing charges are built up on lines 24
24 to 29 here, and then the same percentages are used to
25 allocate those to G, D and T, the same as with return
26 on equity. So the bottom is just arithmetic as

1 before. The financing charges are the sum of the
2 interest on long-term debt, which is shown on line 24,
3 interest on the short-term debt, which is on line 25.
4 From that there, we deduct some income coming off the
5 sinking funds, which is hard-coded in here. There's
6 some other that's hard-coded in here, there's some
7 amortization of deferred debt costs, again, which is
8 hard-coded at this point. And then, if you add up
9 those four lines, five lines, I guess, you get
10 basically your total cost of debt. But, we don't
11 recover the total cost of debt from current
12 ratepayers, because some of it is deferred. We defer
13 the amount that's capitalized to construction, which
14 is shown on line 29, and is calculated up here. I'll
15 come back to that. And we also defer the amount
16 that's attributed to the deferral accounts, and
17 there's a schedule coming on deferral accounts.

18 So those two amounts are basically deducted
19 from the cost of debt that's recovered in the revenue
20 requirement, to come up with, in this case, the 474.8,
21 which has been allocated to the business units.

22 So if I go back up to the top of the page,
23 then, as I mentioned before, the working assumption in
24 the model is that the long-term debt is fixed. We
25 take the long-term financing plan, the costs
26 associated with that, and that's fixed. And any

1 changes in cash are assumed to be financed at the
2 revolving rate. So to do that, the model determines
3 the increase in cash requirement, the change in cash
4 requirement. And so these are the key lines that
5 build up the cash requirement. And you can see most
6 of them are pulled in the model. There's only a
7 couple that we coded in here. Most of them are --
8 actually come from elsewhere in the model. So net
9 income, of course, is a source of cash. But you pay
10 dividends, so that you lose cash. Amortization
11 expense is a source of cash. Deferral accounts,
12 depending on whether you're adding or subtracting, can
13 be a source or a sink here. Capital expenditures,
14 big, big use of cash. That comes right off of
15 previous schedule, but contributions go the other way.
16 And that leaves us with two items here -- sinking
17 funds are being drawn down, that creates cash, reduces
18 borrowing requirements, and then changes in working
19 capital. Now, as I mentioned in my opening slide, one
20 of my opening slides here, changes in working capital
21 are simply hard-coded at this point. The model does
22 not have the detailed derivation of working capital,
23 that's a potential refinement for next time as well,
24 but for this time it's just coded in there, and as the
25 change in working capital required. So -- and I
26 acknowledge that there are some changes in assumptions

1 that could change working capital, but that's a
2 simplification that's not in the model this time.

3 **Proceeding Time 11:00 a.m. T13**

4 But in any event, that gives us our total
5 change in cash. That, then, is used to derive the
6 amount of short-term debt that's required. So the
7 short-term debt that's required is the opening balance
8 plus the change in cash less the change in long-term
9 debt. And long-term debt is, basically, you look at
10 the retirements of long-term debt versus the long-term
11 debt that's issued, and that gives you your revolving
12 debt, your short-term debt requirements. And then I
13 simply -- mid-year data -- applied the short-term rate
14 and that gives you your cost of short-term debt.

15 So the way the model works, then, if there
16 is anything that changes cash, you know, a change in
17 contributions, a change in capital expenditures,
18 anything that changes cash, that will flow through to
19 the revenue requirement -- or at least to the
20 financing charge, at those interest rates that are
21 included there, roughly four percent, four and four
22 and a half percent.

23 Okay? Now, the only thing I haven't talked
24 about here is interest capitalized. Remember on the
25 capital schedule, there was a change in unfinished
26 construction calculation. So the unfinished

1 construction, the interest on the unfinished
2 construction is calculated here. We take the
3 unfinished construction from schedule 13. Now, some
4 of it is not subject to interest, and that has to do
5 with the difference between monthly and mid-year
6 interest rates, that's all that is. So that's my
7 understanding, that's all that is or, primarily, what
8 that is, anyway.

9 And you see here -- and I'll scroll up
10 again, the unfinished -- and interest capitalized is
11 one of the deductions or offsets to the financing
12 charge. So, because we're recovering it later and not
13 from current ratepayers.

14 So that's the most complicated schedule in
15 the whole model. If you got that, we're home-free.
16 No questions, then? Okay.

17 And schedule 7 is amortization. This is
18 fairly straightforward. We have the amortization of
19 the capital assets that is pulled forward from those
20 property schedules that we looked at. We have the
21 amortization of contributions that is pulled forward
22 from that contributions schedule, admittedly hard-
23 coded in that contribution schedule. DSM is pulled
24 forward as well. So we have a few other components of
25 amortization that are entered at this point. There
26 are dismantling costs. There are some write-offs,

1 just -- there's one that I can see here in the test
2 period. There is an adjustment for the depreciation
3 study that I will come back to. And then in the
4 transmission, there's one -- one business unit has a
5 loss on disposal provision. And then the total is
6 just the arithmetic here.

7 Dismantling costs are not actually
8 recovered as part of the current revenue requirement,
9 because they are essentially funded by drawing down
10 the reserve for site restoration, I believe it's
11 called -- future removal and site restoration. So,
12 although it's part of amortization expense, you'll see
13 later when we get to the deferral account page, these
14 dismantling costs are drawn down from that account.

15 I think the other ones are straightforward
16 except for the depreciation study adjustment. Now,
17 what that's all about is, notwithstanding the fact
18 that depreciation expense in total has gone down
19 because on average lives have gotten longer, as a
20 result of the recommended lives and the depreciation
21 study, there were some asset classes where the lives
22 got shorter. And in B.C. Hydro's accounting system,
23 when you're going through things by vintage, by asset
24 class, as I mentioned before, when you shorten the
25 lives of some of those classes, all of a sudden you do
26 have some assets that should be fully depreciated, and

1 the hard ones. This is taxes, Schedule 6, and I won't
2 spend any time on this. These are all just input,
3 relatively stable, no surprises. You can change taxes
4 if you want. It just flows right through to the
5 revenue requirement.

6 I'll just keep going unless somebody yells
7 out here. And then we get to operating expense, so
8 again now we have a series of schedules by business
9 unit, and I'll start with -- let's go to Schedule 5.2
10 which is generation, just look at generation for a
11 change. So again, these are fairly straightforward.
12 I'm not going to spend a lot of time on these here.
13 But you can see these are the individual business
14 units within generation, and broken down into
15 operations, maintenance, and general and
16 administration expense, which I understand is the
17 format that has been used here in the past. And you
18 see all the blue, simply means those numbers are all
19 input at this page, and those are the numbers that are
20 carried forward into the revenue requirement.

21 I will go to the next tab, which is the
22 resource view for generation, and I'll scan down to
23 the bottom and show you that the operations,
24 maintenance, and general and administration view is
25 pulled forward from the previous page. So you can you
26 see that we do get the same totals, which is a good

1 thing for both the add-up of the business units plus
2 this resource view. This resource view, again I
3 understand that you've seen this before. It's labour,
4 internal, external materials and so on. You can read
5 that as well as I can.

6 The only other thing I wanted to point out
7 here is that the business units are all linked
8 together so that if generation here is showing a
9 recovery of .3 from distribution, when you go to the
10 distribution page, that .3 will show up as a cost from
11 generation on the distribution schedule, so they are
12 linked.

13 Now having said all that, you can play
14 around with this resource view but it's not actually
15 used for anything as mentioned before, so you can see
16 that it does all add up and it does all link, but it's
17 actually the other view, the view by business unit on
18 the previous page. These are the ones that are in
19 blue and these are the ones that are actually used in
20 the derivation of the revenue plan, and I had to pick
21 one.

22 Now, some of the smaller units like
23 transmission and field services engineering, they all
24 fit on one page, so there aren't two tabs for these
25 ones. It's all one tab. But again you can see down
26 at the bottom it's the OM&A view where the blue

1 numbers are, but it's the same process as for
2 generation, distribution and corporate.

3 I wanted to go to -- I'll just very quickly
4 look at corporate. Corporate is a slightly different
5 format than generation or distribution because we
6 don't have it broken down by operations, maintenance
7 and G&A. That's because it's all G&A with one
8 exception that I'll come to. So this is broken down
9 basically just by business unit because it's all G&A.
10 And you can see down here, I'll scroll down to the
11 bottom, we do have some other costs here that are, I
12 guess for the most part, enterprise-wide, which are
13 managed in corporate but are gathered separately for
14 transparency because they do apply to other parts of
15 the -- for the most part, I think, to the entire
16 enterprise, for the pension costs, insurance and so
17 on.

18 Here is Site C. This is where Site C shows
19 up. When you look at the summary on the next page for
20 corporate, Site C is treated as operations, I think,
21 and everything else is treated as G&A -- you just
22 confirm that.

23 **Proceeding Time 11:10 a.m. T15**

24 And here's the next page. So, say, Site C
25 is treated as operations, everything else is in
26 general and administration for corporate.

1 COMMISSIONER PULLMAN: So, getting back to generation,
2 if I may, the resource usage, you can twiddle around
3 with these numbers and they won't change anything.

4 MR. TAYLOR: That's right. I could actually delete the
5 whole sheet and it wouldn't change anything.

6 COMMISSIONER PULLMAN: Right.

7 MR. TAYLOR: For the resource usage, that's right.

8 COMMISSIONER PULLMAN: Okay.

9 MR. TAYLOR: It was shown -- you know, it's meant to be
10 helpful as it gets -- you know, see what the resource
11 usage was, and show that it did add up to the other
12 view, and it all links to the other business units,
13 where there's internal services, internal recoveries,
14 so we're trying to be helpful there, but it's not
15 actually pulled forward because B.C. Hydro does its
16 external reporting using this OM&A view. That's the
17 view that's used, and so that's the view we pulled
18 forward.

19 COMMISSIONER PULLMAN: Thank you.

20 THE CHAIRPERSON: If you were to change the deferral
21 account recoveries, that flows through to the rate
22 impacts.

23 MR. TAYLOR: Absolutely. I'll come to that, Robert.
24 Yes, absolutely.

25 Okay. Is that all right for generation,
26 then?

1 The cost of energy, Robert asked me if this
2 is linked. I believe this is exactly the same format
3 as you've seen before for cost of energy, with two
4 exceptions. And you'll notice there's no blue here.
5 Again, you can change any of these numbers and they
6 will flow through, but it's not linked to any of the
7 generation models, or wherever these numbers came
8 from. They're just input at this stage. The cents-
9 per-kilowatt hour at the bottom are calculated, of
10 course, but these are just strictly input.

11 Two things I wanted to point out here. The
12 model does calculate dynamically the impact of rate
13 increases on water rentals. So if you do something,
14 you make a change in assumption that changes the
15 forecast rate increase, that will cycle back, there's
16 an iteration here, there's a loop here, and change the
17 impact of that rate increase on the water rental. So
18 that is calculated dynamically, and except for the
19 monthly versus annual variation, should be fairly
20 accurate.

21 The other thing I wanted to point out that
22 I think may be new here is, when we look at energy,
23 and I'll do the -- it'll be easier to look at energy,
24 which is the bottom half here. To look at energy,
25 it's my understanding that heritage energy is capped
26 at 49,000 gigawatt-hours. And so you'll see, if the

1 total heritage energy is above that, there's a
2 transfer from heritage to non-heritage. So that 1,850
3 is a transfer from heritage energy to non-heritage
4 energy, or to not exceed the 49,000 cap on heritage
5 energy. And there's a comparable change in dollars up
6 above. This is the energy piece. And I think that
7 those might be new lines on this table, but except for
8 that, I think this is the same table you've seen
9 before. And it's all just inputted here.

10 Okay. So then, I had some what I've called
11 total schedules, which is essentially a revenue
12 requirement by business area. And the only thing
13 that's not reflected here are deferral accounts, which
14 I'm still coming to, and the subsidiary net income,
15 which I already showed you, which was on the very top
16 schedule. So except for deferral accounts and
17 subsidiary income, this is a comprehensive view of
18 revenue requirements by business unit.

19 And this is -- just to pick one here --
20 this is transmission. I picked this one for a reason
21 here, but basically again it's a more traditional
22 view, here. Energy costs, operating costs, and so on.
23 You can read that as well as I can. There's two
24 things I wanted to point out here. There are some
25 costs incurred by transmission that are not recovered
26 as part of the transmission owner's revenue

1 requirement, but are recovered from other business
2 units internally, and those are costs related to GRTA,
3 Generation-Related Transmission Assets, which are
4 obviously recovered from generation, and SDA, which
5 stands for Substation Distribution Assets, which are
6 recovered from distribution. So I'm sure everybody in
7 B.C. understands all that much better than I do, but
8 those costs are -- those are internal recoveries, and
9 they will show up as costs when I look at the
10 generation and distribution schedules respectively in
11 a moment here.

12 **Proceeding Time 11:15 a.m. T16**

13 The other thing I wanted to point out is
14 this is the schedule where we bring in inter-segment
15 revenues, which is essentially revenues from other
16 parts of B.C. Hydro. So these are the schedules where
17 inter-segment revenues are brought in as input, and so
18 we get down to the bottom here and we see that for
19 transmission, the way to interpret this number is this
20 is the total transmission revenue requirement to be
21 recovered from B.C. Hydro's retail customers in the
22 test area. That's what those numbers are. So they
23 include, for example, the asset management and
24 maintenance fee from BCTC. That's included in there
25 because that's a component of the revenue requirement
26 to be recovered from Hydro's retail customers.

1 To be helpful, we've included here a
2 reconciliation between the revenue requirement on line
3 10 and the owner's revenue requirement that forms an
4 input basically to BCTC's revenue requirement. So
5 given the time, I don't think I'll spend as much time
6 as I was going to on this. I think you can follow
7 this. I've got reference numbers there. But
8 basically this is how you get from the transmission
9 revenue requirement that's included as a component of
10 B.C. Hydro's overall revenue requirement, to the so-
11 called owner's revenue requirement. And I think I'll
12 just, given the time, move on here unless anybody is
13 just dying to understand how that works. I think it's
14 self-explanatory from those notes.

15 I'm going to speed up a bit. I think the
16 only other one I'll look at here is corporate. One of
17 the reasons I wanted to look at corporate was that we
18 do have some operating costs that weren't included in
19 the corporate operating cost schedule we looked at a
20 few minutes ago related to First Nations costs. And
21 the reason they are included here is that the, you
22 know, it's a corporate function but the group
23 actually, functionally, is part of a generation group.
24 So we brought it in here so that it would be part of
25 the corporate total as opposed to the generation
26 total. It just administratively reports to Don

1 Farrell but is actually a corporate function.

2 And so the first line here is the cost of
3 that business unit, the Aboriginal Relations and
4 Negotiations Group. The second cost here, you've
5 probably heard about this, this is the provision, the
6 liability and accretion provision for potential
7 settlements, and there is a deferral account proposed
8 maybe even approved by now for those costs, and I'll
9 show you that on the deferral account page in a
10 second. That's what that is.

11 The other thing I wanted to just -- and I
12 mentioned this before, just to point out here that I
13 have hard coded the allocation of corporate cost to
14 the business units. I don't have the logic built in,
15 you know, so much is allocated on floor space and so
16 much on head count, I don't have that detail and that
17 logic built into the model. So these are hard coded
18 and so that the cost, if the total corporate cost
19 changed, they would be -- you know, the total would be
20 reallocated but reallocated using those same
21 percentages.

22 Okay, I'm wearing everybody down, I can
23 tell.

24 Deferral accounts, so this is the last page
25 before I get back to the total. So most of these are
26 quite familiar to you. We have a series of lines for

1 each deferral account and we simply put in the
2 additions. Now, in the forecast period, for the most
3 part those are zero, of course. You don't forecast
4 any additions. There is some interest that is
5 calculated, and the interest is calculated based on
6 the interest rate which is right down at the bottom of
7 the page, which is input here, but that's the interest
8 rate that's used to calculate all the interest on the
9 deferral accounts. That's the same interest rate
10 that's used for IDC back on the finance page.

11 So interest is calculated. And then here
12 is where we put in the recovery. So for example, for
13 the Heritage deferral account, the forecast here is a
14 recovery in '08 of \$82.2 million for that deferral --
15 for that account. And similarly for non-Heritage
16 there's a forecast recovery of 57.9, and the reason
17 for those numbers is explained in the evidence. But
18 yes, you could go in here and change any of those
19 numbers and it would automatically flow through to the
20 revenue requirement. As a matter of fact, it would
21 even change the deferral account interest calculation,
22 depending on whether you got bigger or smaller, of
23 course. So that's all dynamic, and that will work.

24 **Proceeding Time 11:20 a.m. T17**

25 Trade income you understand. BCTC deferral
26 I think is well-understood. But the ones that are new

1 are the First Nations regulatory asset, which I just
2 showed you on the corporate schedule, so we have the
3 87.7 million in '06 and the two accretion amounts in
4 '07 and '08. We have the proposed depreciation study
5 regulatory account, and that simply is to smooth in
6 that one-time 24 million dollar write-off over the two
7 years in the test period. So basically you move 12
8 million out of '07 into '08 is all that's doing. It's
9 just a smoothing of the impact of that one-time write-
10 off.

11 The next one here is Site C, and I had
12 shown you where Site C was on the corporate schedule.
13 And then the last one is future removal and site
14 restoration, which is where the dismantling costs are
15 drawn down. That's not new, that's something you've
16 had before, that's the same as before. And then the
17 rest of the table is just some summaries, summaries of
18 year-end balances, and additions, and recoveries, and
19 so on. The rest is just arithmetic.

20 COMMISSIONER PULLMAN: I'm sorry. Remind me why only
21 88.5 percent of the corporate allocation, this is
22 trailing you a little bit, I'm back on schedule 3.1,
23 page seven. Still trying to work out why you only
24 allocated 88.5 percent.

25 MR. TAYLOR: Ah, good question. Ask the people at the
26 back, they'd love to answer that.

1 The short answer is timing, that the
2 corporate allocation is a separate set of models that
3 Hydro uses. It was done several months ago, and in
4 the meantime there were changes in corporate costs and
5 they simply didn't have time to go back and update
6 that.

7 COMMISSIONER PULLMAN: Okay, thank you.

8 MR. TAYLOR: That's the short answer. You'll notice,
9 though, that when we get to -- if you look at the
10 schedule 3.0, which is the total costs, this is just
11 the total. Now, we've got, you know, 3 billion dollar
12 revenue requirement, and yes, there's 18 million of
13 corporate that didn't get allocated, and there's a
14 little bit of engineering and field that didn't get
15 allocated. Ideally, it would have been nice if all
16 three of those were exactly zero.

17 COMMISSIONER PULLMAN: Okay. So that's where the 12
18 percent pops out, is it?

19 MR. TAYLOR: Yes, exactly.

20 COMMISSIONER PULLMAN: Okay, thank you. Eleven and a
21 half percent.

22 MR. TAYLOR: So in the overall scheme of things, it's
23 not a huge difference out of the three billion, but it
24 would have been nice if those were exactly zero. I
25 agree.

26 It was a good question, though.

1 COMMISSIONER PULLMAN: Well, actually, yes, I was aware
2 of that.

3 MR. TAYLOR: Okay. So that brings me back to where we
4 started, the revenue requirement page. So now you
5 should know where every number on this page came from.
6 I hope. I'll just check my notes here.

7 So Robert, I was going to segue into some
8 scenarios now. I don't know if you wanted me to run a
9 couple while you're here, or you wanted to excuse
10 yourself now. It's up to you.

11 THE CHAIRPERSON: We will stay and leave you to decide on
12 what the scenarios are, and then we'll leave
13 immediately after that.

14 MR. TAYLOR: All right. Well, why don't I just do a
15 couple of simple ones, like a change in operating and
16 a change in capital, and then we'll open it up to
17 others after you leave.

18 THE CHAIRPERSON: Okay.

19 MR. TAYLOR: So, actually I tried this one last week.
20 I'll try it again here. If we go to -- well, let me
21 -- I'm on the top page here. Now, I'm going to --
22 just to be helpful here, right down at the bottom
23 where it says "the revenue shortfall of 127.3, and
24 207.6", I'm just going to hard-code those in, so as
25 we do scenarios, we'll remember what was included in
26 the application, so we can see whether the numbers are

1 going up or down. So I'm going to just hard-code in
2 here some numbers. You don't need to do this,
3 necessarily.

4 Oops, that's not good. You like that
5 increase, did you?

6 And then that's just so we can remember
7 what they were. I just hard coded them for reference.

8 **Proceeding Time 11:25 a.m. T18**

9 So let's go to operating costs. We'll do
10 an operating cost example here. Corporate. So I'm
11 going to pick on Joanna here. The regulatory group,
12 the forecast costs are 8 million, 8.3 million and 4.7
13 million, okay? So if we just delete our group, push a
14 button, she's gone and we go back now to Schedule 1.
15 So remember I took out 8 and about 5 in round numbers
16 here. You can see that the rate increase would go
17 from 4.65 to 4.35, so take out .3, that's not bad.

18 Okay. You guys have no sense of humour.

19 But there's a bit of a rate -- the rate
20 increase the next year is a bit higher, and the reason
21 is that I took out 8 million the first year and only 5
22 the second year, so if you think about the math there,
23 I didn't take out as much the second year and so the
24 rate increase would actually be a little higher,
25 although the total revenue requirement, total
26 shortfall has gone down. So that's all it takes to

1 change operating expense. And by the way, so changing
2 operating expenses work exactly. All the
3 simplifications I talked to don't apply to operating
4 expense. That'll flow through dollar for dollar.

5 So let me just undo that. No, I can't undo
6 that. Sorry, you're gone, John. I can't undo it.
7 What were the numbers there? Has somebody got that
8 page open? 8 point -- this is your budget, Joanna.
9 I'm just going to put these back in here. It's
10 Schedule 5.1.

11 THE CHAIRPERSON: 8.3 and 4.7.

12 COMMISSIONER PULLMAN: 4.7.

13 MR. TAYLOR: I don't know why I couldn't undo that. Just
14 to check, I'm going to go back to the front page and
15 see if I get the same -- yeah, I'm back to 4.65, 2.7,
16 well, that's good.

17 I just wanted to show you some rules of
18 thumb here. If I go to taxes, taxes again flows
19 directly through to the revenue requirement. If I
20 take out grants and I take out \$25.8 million from
21 transmission, I'll just delete that, write that down.
22 So I've taken out roughly \$26 million. If you take
23 out \$26 million, you'll see that the required rate
24 increase goes down by a percent. So rule of thumb \$26
25 million, one percent.

26 Now, for those of you that are paying

1 attention, this is like 20 questions. You'll notice I
2 only took out taxes I '07. I didn't take out any
3 taxes in '08. I just took out 25, 26 million dollars
4 in '07. But you'll notice I've got a change here in
5 my shortfall, in my revenue requirement in '08. So my
6 revenue shortfall has gone down a couple million
7 dollars. And the reason for that is, by lowering my
8 rate increase in '07, I've reduced the cost of water
9 rentals in '08. The water rentals are a function of
10 the rate increase in the prior calendar year. So you
11 can see some of the logic at work here. Even though I
12 only took out operating costs out of '07 here,
13 actually it has an effect. And of course the converse
14 would be true as well. It has an effect here because
15 of the lag in water rentals. Just so you know, that's
16 what's going on there.

17 So that's an example of how you can change
18 operating expenses or taxes. I'll put that number
19 back in here.

20 I'll now go to capital and I'll do a couple
21 of quick examples on capital. So let me take out --
22 let me take out 400 million of distribution addition
23 -- these are expenditures. We'll start with
24 expenditures here in '07. So I just wiped out \$400
25 million here. Ernie, are you in distribution back
26 there? No, they're not in distribution. We're okay.

1 MR. QUAIL: Not any more.

2 MR. TAYLOR: Not any more, yeah, not any more. So what
3 happened here?

4 MR. QUAIL: My laptop just died because distribution --

5 MR. TAYLOR: Hmm?

6 MR. QUAIL: Our laptops are going to go black now once
7 the batteries run down because there's no
8 distribution.

9 MR. TAYLOR: No distribution, all right. Get in the
10 battery business.

11 You'll notice here an interesting
12 phenomenon. I took out \$400 million of cap ex. My
13 rate increase went up.

14 **Proceeding Time 11:30 a.m. T19**

15 Okay, this is a skill-testing question.
16 Oh, I'll have to wait until you guys leave. Remember
17 that, okay, why -- actually I guess I have to tell you
18 with you guys here. The reason is I didn't take out
19 any additions. I took out expenditures. The way the
20 financing, the simplified financing model works, is
21 that 400 million reduced my unfinished construction.

22 Interest on unfinished construction is an
23 offset to financing charges. It's financing charges
24 that are deferred, not collected from current
25 customers. It also, though, of course, reduces debt
26 requirement. We have different interest rates in

1 there for debt and IDC and if you go through the math
2 you'll see.

3 Remember I mentioned before that if you
4 took out a lot of capital you'd go back and revisit
5 your long-term financing plan? Well, this is one of
6 the problems or simplifications. You've got to be
7 careful using the model here. By taking out 400
8 million in expenditures and not taking out any
9 additions here, I've assumed all the 400 million comes
10 out of short-term debt, but I've also taken out 400
11 million of unfinished construction which is costed at
12 long-term debt.

13 So what you're seeing there is the
14 difference between long-term and short-term debt for
15 \$400 million. I don't totally understand that but
16 just got to be a little careful. If you make huge --
17 well, I mean it's not reasonable to take out 400
18 million expenditures and not take out the same number
19 of additions. So let's go back and also take out 400
20 million of additions. Again, just in the first year
21 here. So this will give you something that looks more
22 reasonable.

23 So if you take out 400 million of additions
24 you'll notice that the rate increase in '07 goes down
25 from 4.65 to 4.16, roughly half a percent. But the
26 rate increase in the second year also goes down by

1 half a percent. So a cumulative reduction of one
2 percent.

3 The reason it's spread over two years is
4 there's a mid-year effect here. When you bring assets
5 into service, the first year you kind of get half the
6 effect on return in amortization. You get the full
7 effect in the second year.

8 So rule of thumb now -- so I've got two
9 rules of thumb for you: operating, you take out 26
10 million a year, every year, you get roughly a one
11 percent reduction in rates, one time. Capital, you
12 take out \$400 million once, you get a one percent
13 reduction but phased in over two years. You get a
14 mid-year effect the first year. Some rules of thumb.

15 So, any questions?

16 THE CHAIRPERSON: Thank you. No. I think that was very
17 helpful, thank you. We will leave now and give you an
18 opportunity to carry on your conversation. I suspect
19 we curtailed some of the questions that you would have
20 otherwise --

21 MR. TAYLOR: Hopefully not added too many others.

22 THE CHAIRPERSON: Right. Yes, and hopefully not added
23 too many others. Thank you.

24 MR. TAYLOR: See you later.

25 (PROCEEDING ADJOURNED AT 11:33 A.M.)

26