

Page 1	<p>1 October 22, 2015</p> <p>2 (9:06 a.m.)</p> <p>3 CHAIRMAN:</p> <p>4 Q. I guess we're all over yesterday's excitement,</p> <p>5 so we're back at it again. There's a few</p> <p>6 undertakings before I go to you, Mr. O'Reilly,</p> <p>7 I believe, is that correct?</p> <p>8 MR. CASS:</p> <p>9 Q. Yes, Mr. Chair, there are four undertaking</p> <p>10 responses. Undertaking 47, which relates to</p> <p>11 communications with Vale about OM & A costs,</p> <p>12 Undertaking 49, which involves signatories to</p> <p>13 the agreement with Vale, Undertaking 56,</p> <p>14 weekly ECC operators guidelines, and</p> <p>15 Undertaking 66, the protocol for Avalon</p> <p>16 reserves.</p> <p>17 CHAIRMAN:</p> <p>18 Q. Okay.</p> <p>19 MR. CASS:</p> <p>20 Q. Thank you, sir.</p> <p>21 CHAIRMAN:</p> <p>22 Q. Mr. O'Reilly, sir.</p> <p>23 O'REILLY, Q.C.:</p> <p>24 Q. Thank you, Mr. Chair.</p> <p>25 MR. PAUL HUMPHRIES</p>	Page 3
<p>1 here. Not me, but some of them are, I guess,</p> <p>2 but just try to speak into the mic.</p> <p>3 O'REILLY, Q.C.:</p> <p>4 Q. All right, thank you, sorry, Mr. Chairman.</p> <p>5 Yes, a few questions about the load yesterday</p> <p>6 that - I guess, the revised load put to you by</p> <p>7 the Consumer Advocate yesterday, and at Page</p> <p>8 32, line 25, of yesterday's transcript, I</p> <p>9 don't know if you - I'll bring it up, anyway,</p> <p>10 but you indicated there that as a result of</p> <p>11 recent information or updates received from</p> <p>12 Vale, that the forecast load had been reduced</p> <p>13 by some 25 or 30 megawatts, is that correct?</p> <p>14 MR. HUMPHRIES:</p> <p>15 A. Yes, that's correct.</p> <p>16 O'REILLY, Q.C.:</p> <p>17 Q. Now I understand that when you're preparing</p> <p>18 for the GRA, you use the forecast load that</p> <p>19 you have at the time to put into the test</p> <p>20 year, is that right?</p> <p>21 MR. HUMPHRIES:</p> <p>22 A. That's correct.</p> <p>23 O'REILLY, Q.C.:</p> <p>24 Q. Okay, and, I guess, is it fair for me to</p> <p>25 conclude or for the Board to conclude that at</p>	Page 4	
Page 2	<p>1 MR. ROBERT MOULTON</p> <p>2 MR. PAUL STRATTON</p> <p>3 MR. KEVIN GOULDING</p> <p>4 CROSS-EXAMINATION BY O'REILLY, Q.C.:</p> <p>5 O'REILLY, Q.C.:</p> <p>6 Q. Good morning, gentlemen. My name is Tom</p> <p>7 O'Reilly and with me Mr. Denis Fleming, and we</p> <p>8 represent the interest of Vale in this GRA</p> <p>9 hearing. I just have a few questions for you</p> <p>10 and the first deals with the matters and</p> <p>11 questions that were put to you by the Consumer</p> <p>12 Advocate yesterday with respect to load, and I</p> <p>13 think it was probably Mr. Humphries who</p> <p>14 responded.</p> <p>15 CHAIRMAN:</p> <p>16 Q. Mr. O'Reilly, I think you better speak up a</p> <p>17 little bit.</p> <p>18 O'REILLY, Q.C.:</p> <p>19 Q. Sorry, is that - can you hear me?</p> <p>20 MR. HUMPHRIES:</p> <p>21 A. I can hear you.</p> <p>22 O'REILLY, Q.C.:</p> <p>23 Q. But you can't hear me up there?</p> <p>24 CHAIRMAN:</p> <p>25 Q. No, we're having a little bit of a problem up</p>	<p>1 some point Hydro has to make the decision to</p> <p>2 draw a line in the sand and say, you know,</p> <p>3 this is what we're going to put into the test</p> <p>4 year?</p> <p>5 MR. HUMPHRIES:</p> <p>6 A. I would think so, yes.</p> <p>7 O'REILLY, Q.C.:</p> <p>8 Q. So as the process continues, you said you get</p> <p>9 monthly updates of the load forecast?</p> <p>10 MR. HUMPHRIES:</p> <p>11 A. Yes.</p> <p>12 O'REILLY, Q.C.:</p> <p>13 Q. And the latest one that you received that you</p> <p>14 spoke about in your response to Mr. Johnson's</p> <p>15 question yesterday was that there was going to</p> <p>16 be a forecast reduction in that load going</p> <p>17 forward?</p> <p>18 MR. HUMPHRIES:</p> <p>19 A. Yes.</p> <p>20 O'REILLY, Q.C.:</p> <p>21 Q. Now a reduction in load of 25 to 30 megawatts,</p> <p>22 to put that in perspective, would that be the</p> <p>23 equivalent of two time the output of Star</p> <p>24 Lake, for example, about 15 megawatts?</p> <p>25 MR. HUMPHRIES:</p>

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1 A. If it's 15 megawatts, 30 megawatts would be
 2 two times, yes.
 3 O'REILLY, Q.C.:
 4 Q. It would be twice the output?
 5 MR. HUMPHRIES:
 6 A. Yes.
 7 O'REILLY, Q.C.:
 8 Q. Is that a fair -
 9 MR. HUMPHRIES:
 10 A. Yes, generally, yes.
 11 O'REILLY, Q.C.:
 12 Q. Okay. Also yesterday Mr. Johnson was asking
 13 some questions about the Vale facilities,
 14 their plant that they have, this dedicated
 15 plant to them in Long Harbour consisting of
 16 the terminal and transmission lines and so on,
 17 some questions about that, and you indicated
 18 again at - I think it was probably Mr.
 19 Goulding who spoke to this, that there was a
 20 supplemental capital application pending to
 21 deal with some transformer issues, is that
 22 right?
 23 MR. GOULDING:
 24 A. That's correct.
 25 O'REILLY, Q.C.:

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1 Q. Okay, now just to be clear, there was a
 2 capital application pending, but that's not to
 3 be confused with an expense, an operating
 4 expense, a capital expense is much different,
 5 is that correct?
 6 MR. GOULDING:
 7 A. That's correct.
 8 O'REILLY, Q.C.:
 9 Q. So it's not that - this is not going to affect
 10 the O & M costs, it's going to be a capital
 11 cost?
 12 MR. GOULDING:
 13 A. It's a capital cost. I think we've had some
 14 discussion here previously of how the O & M
 15 calculation works, and I don't know the
 16 details of - the exact details of the O & M
 17 calculation, but I know that - there is some
 18 relationship, I think, between capital
 19 expenditure and the O & M.
 20 O'REILLY, Q.C.:
 21 Q. Certainly, it affects depreciation for one
 22 thing?
 23 MR. GOULDING:
 24 A. That's correct.
 25 O'REILLY, Q.C.:

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1 Q. Right, but in terms of the actual cost itself
 2 of doing the work, that's a capital
 3 expenditure as opposed to an operating
 4 expense?
 5 MR. GOULDING:
 6 A. It's a capital expenditure that impacts on, I
 7 would say, the amount of plant that -
 8 O'REILLY, Q.C.:
 9 Q. That Vale owns or has?
 10 MR. GOULDING:
 11 A. That is assigned to Vale, so that on its own
 12 merits would affect, and I'm not, you know,
 13 intimately aware of all the details, but that
 14 would affect the specifically assigned charges
 15 of Vale.
 16 O'REILLY, Q.C.:
 17 Q. Right, okay. Yesterday as well, there were
 18 some questions put about the - the question
 19 was made that for production of the
 20 maintenance schedule for Vale, do you recall
 21 that?
 22 MR. GOULDING:
 23 A. Yes, I do.
 24 O'REILLY, Q.C.:
 25 Q. Okay, do all the lines have maintenance

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1 schedules? I mean, this is not just a Vale
 2 issue. Wouldn't all your lines that you have,
 3 have a maintenance schedule?
 4 MR. GOULDING:
 5 A. That's correct.
 6 O'REILLY, Q.C.:
 7 Q. So there's nothing unique about Vale having a
 8 schedule?
 9 MR. GOULDING:
 10 A. No, only to the point where Vale is served by
 11 only one line.
 12 O'REILLY, Q.C.:
 13 Q. Right.
 14 MR. GOULDING:
 15 A. So we need to ensure, I guess, that our
 16 activities are aligned with Vale's maintenance
 17 activities.
 18 O'REILLY, Q.C.:
 19 Q. The only thing is with the coordination
 20 between the customer - with your customer and
 21 the maintenance of the line, and a schedule
 22 for that. Other than that, there's nothing
 23 unique that's particular to the customer, not
 24 unique to -
 25 MR. GOULDING:

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<p>1 A. No.</p> <p>2 O'REILLY, Q.C.:</p> <p>3 Q. Would you agree with that?</p> <p>4 MR. GOULDING:</p> <p>5 A. I would agree with that.</p> <p>6 O'REILLY, Q.C.:</p> <p>7 Q. Would you agree with that?</p> <p>8 MR. GOULDING:</p> <p>9 A. Yes, I would agree with it.</p> <p>10 O'REILLY, Q.C.:</p> <p>11 Q. And would you also agree that new transmission</p> <p>12 lines are probably more reliable than old</p> <p>13 transmission lines?</p> <p>14 MR. GOULDING:</p> <p>15 A. In general, there are more aspects than just</p> <p>16 the age of the line. You know, another</p> <p>17 determining factor might be the environment</p> <p>18 that it operates in.</p> <p>19 O'REILLY, Q.C.:</p> <p>20 Q. Uh-hm.</p> <p>21 MR. GOULDING:</p> <p>22 A. For instance, if you have a line that's</p> <p>23 exposed to a lot of wind and salt spray, then</p> <p>24 at times it wouldn't matter how old or new the</p> <p>25 line is. Once the weather conditions are to</p>	<p>1 we look at Long Harbour, in particular, from</p> <p>2 an environmental perspective, the biggest</p> <p>3 issue there is salt spray, salt contamination,</p> <p>4 so you would incorporate that into the design.</p> <p>5 (9:15 a.m.)</p> <p>6 O'REILLY, Q.C.:</p> <p>7 Q. Can we turn to the transcript for October</p> <p>8 20th, please, at page 156 - actually, I guess,</p> <p>9 the top of 155, line 25 on page 155 and down</p> <p>10 to line 8 of 156, and in this exchange Mr.</p> <p>11 O'Brien was asking you some questions about</p> <p>12 generation requirements and so on, and you</p> <p>13 made the comment here, and would you just have</p> <p>14 a quick look at that, Mr. Humphries, that</p> <p>15 exchange or answer, "Well, again we haven't</p> <p>16 considered it. Given the fact that the</p> <p>17 transmission configuration into the Avalon</p> <p>18 will change significantly with the addition of</p> <p>19 the circuit from Bay d'Espoir and the HVdc</p> <p>20 link in addition, and, I mean, given the</p> <p>21 reliability of transmission lines compared to</p> <p>22 generation lines, they're more reliable".</p> <p>23 Would you stand by that statement?</p> <p>24 MR. HUMPHRIES:</p> <p>25 A. In particular, a transmission line is more</p>
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<p>1 that point, then you may still experience</p> <p>2 outages.</p> <p>3 O'REILLY, Q.C.:</p> <p>4 Q. In the location where the Vale lines are</p> <p>5 located, is there anything particularly risky</p> <p>6 in terms of environmental risks?</p> <p>7 MR. GOULDING:</p> <p>8 A. I don't know of any, and I defer to Mr.</p> <p>9 Humphries now, I guess, from a planning</p> <p>10 perspective of whether he's aware of any</p> <p>11 issues with that line.</p> <p>12 MR. HUMPHRIES:</p> <p>13 A. No, not with the line itself, I guess, and</p> <p>14 just to get back to your question of Mr.</p> <p>15 Goulding, I guess, on whether, you know, new</p> <p>16 lines are more reliable, I think it's probably</p> <p>17 from a maintenance perspective new lines would</p> <p>18 require less maintenance initially than old</p> <p>19 lines, but whether they are more reliable, it</p> <p>20 depends on - new lines today are probably</p> <p>21 built to a newer and higher standard than old</p> <p>22 lines, so that intuitively you'd think they'd</p> <p>23 be more reliable, but whether you can make an</p> <p>24 across the board assertion that they're more</p> <p>25 reliable, it depends on the situation. When</p>	<p>1 reliable than thermal generation on the</p> <p>2 Avalon.</p> <p>3 O'REILLY, Q.C.:</p> <p>4 Q. Right, okay, and would you have it that</p> <p>5 transmission lines similar to those that are</p> <p>6 newly installed for - relatively newly</p> <p>7 installed for Vale, are more reliable than</p> <p>8 transmission lines that have been installed</p> <p>9 for a longer period time?</p> <p>10 MR. HUMPHRIES:</p> <p>11 A. Assuming - yes, they would have been built to</p> <p>12 a different standard, there's no question.</p> <p>13 O'REILLY, Q.C.:</p> <p>14 Q. A higher standard?</p> <p>15 MR. HUMPHRIES:</p> <p>16 A. A higher standard.</p> <p>17 O'REILLY, Q.C.:</p> <p>18 Q. Yes, okay. I presume that such being the</p> <p>19 case, if they're built to a higher standard</p> <p>20 and newly installed, relatively newly</p> <p>21 installed, you would expect less maintenance</p> <p>22 on those lines, is that correct?</p> <p>23 MR. HUMPHRIES:</p> <p>24 A. On the line itself probably, yes.</p> <p>25 O'REILLY, Q.C.:</p>

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1 Q. Okay. I think that's all, Mr. Chairman.
 2 Thank you very much, gentlemen.
 3 CHAIRMAN:
 4 Q. Madam Dawson, do you have anything?
 5 MS. DAWSON:
 6 Q. Yes, Mr. Chair, I do.
 7 CROSS-EXAMINATION BY MS. GENEVIEVE DAWSON:
 8 MS. DAWSON:
 9 Q. My name is Genevieve Dawson, and I represent
 10 the Nunatsiavut Government. I think my
 11 questions - I only have questions, I think,
 12 for Mr. Humphries, and I'll give Mr. Goulding
 13 a break, and I think it's Mr. Moulton that
 14 will probably - my focus is going to be wind
 15 energy. I don't think I'm going to have any
 16 questions for Mr. Stratton because he talks
 17 about, what is it called, regression analysis,
 18 and that wouldn't be a good idea. So you're
 19 safe, I think, Mr. Stratton. Mr. Humphries, I
 20 asked the other VPs and management team the
 21 same question, and I imagine you know where
 22 I'm going to go first, and I'll ask you the
 23 same question, are you familiar with the
 24 provisions of both the Public Utilities Act
 25 and the Electrical Power Control Act as it

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1 relates to the Inuit?
 2 MR. HUMPHRIES:
 3 A. I think my comment would be similar to Mr.
 4 Henderson. No, I was not really aware.
 5 MS. DAWSON:
 6 Q. So it would only be through these proceedings
 7 that you would be familiar with that?
 8 MR. HUMPHRIES:
 9 A. Yes.
 10 MS. DAWSON:
 11 Q. In your capacity then as Vice President of
 12 Systems and Operations, would there be anybody
 13 in your group that would be tasked with a
 14 liaison with the Nunatsiavut Government?
 15 MR. HUMPHRIES:
 16 A. Yes, Mr. Moulton, through his planning process
 17 would be involved with any groups that meet
 18 with the Nunatsiavut Government?
 19 MS. DAWSON:
 20 Q. Okay, so he would be the man then I should
 21 speak to about this?
 22 MR. HUMPHRIES:
 23 A. Yes.
 24 MS. DAWSON:
 25 Q. Okay, and then when - I'm assuming then,

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1 according to the answers to your questions,
 2 you would be more familiar with Muskrat Falls
 3 and the integration that's about to happen?
 4 MR. HUMPHRIES:
 5 A. Yes, I am more familiar with that.
 6 MS. DAWSON:
 7 Q. And in that capacity, would you have any
 8 dealings with the Nunatsiavut Government as it
 9 relates to Muskrat Falls and the integration
 10 and how the whole system might impact the
 11 people from Nunatsiavut?
 12 MR. HUMPHRIES:
 13 A. I personally haven't had any direct interface
 14 or integration, but the project team obviously
 15 does, there's a fair bit, and I do have input
 16 to those groups, but I personally haven't had
 17 a face to face discussion.
 18 MS. DAWSON:
 19 Q. Is there a policy, as far as you're concerned,
 20 that you go by to ensure that the people under
 21 you deal directly - or is it a policy at all
 22 of Hydro that there is some liaison with the
 23 people from Nunatsiavut Government?
 24 MR. HUMPHRIES:
 25 A. I don't think there's a policy. I think it's

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1 been a common practice that there would be
 2 dealings with the Nunatsiavut Government and
 3 there have been, and our people have been
 4 involved.
 5 MS. DAWSON:
 6 Q. Okay, I'm going to then talk about the big
 7 picture, maybe at some point you can direct me
 8 to Mr. Moulton, but I'll start with the big
 9 picture on, I'll call it, wind power. Just
 10 tell me generally when do you decide that you
 11 would go down that route? I understand
 12 there's four plants, I'll call them plants,
 13 whatever you want to call them, I guess,
 14 farms, there's two in Ramea, one in St.
 15 Lawrence, and one in Fermeuse, and at what
 16 point does Hydro determine that this is a good
 17 idea, just generally?
 18 MR. HUMPHRIES:
 19 A. Well, I guess, when we look at the - there's
 20 difference in the two plants or the sites.
 21 The plants in St. Lawrence and Fermeuse are
 22 larger facilities on the interconnected island
 23 system, and they provide power into the grid,
 24 and at the time when we embarked on those in
 25 the wind area probably 10 plus years ago, we

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1 were looking at wind as an opportunity to
 2 provide lower cost energy compared to Holyrood
 3 generation. It was a new technology to the
 4 island. There were significant integration
 5 issues and determination of the amount of wind
 6 that we could both technically integrate into
 7 the island system and economically integrate
 8 as well. So we moved forward and we have
 9 these two facilities that we don't own them,
 10 they're privately owned and we have power
 11 purchase arrangements in place with the
 12 proponents to buy the power, but those were
 13 installed, and from an island interconnected
 14 perspective, that was pretty well the - we
 15 were at a level where there was not - we
 16 hadn't reached our theoretical technical
 17 limit, but we were at a stage where
 18 economically there would be concerns with
 19 integrating more wind because of the fact that
 20 where we were isolated and the fact that the
 21 wind projects are a take or pay type
 22 arrangement where we have to purchase the full
 23 capacity from the plant, we run a risk of
 24 spilling water at times too by the higher cost
 25 wind energy and spill much lower cost water.

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1 It works fine as long as we're displacing
 2 higher cost Holyrood fuel, but there's an
 3 economic balance there as well.
 4 MS. DAWSON:
 5 Q. So do I take it from your answer then, there
 6 was two reasons; one, because you needed the
 7 power, so there was a capacity issue and it
 8 made economic sense, those two things then?
 9 MR. HUMPHRIES:
 10 A. Those two things, yes.
 11 MS. DAWSON:
 12 Q. So with respect to Fermeuse and St. Lawrence
 13 then they're ongoing and they're good - I
 14 noticed that you talk a bit about it in your
 15 application, but as far as you're concerned,
 16 they're doing fine?
 17 MR. HUMPHRIES:
 18 A. They have worked really well, yes.
 19 MS. DAWSON:
 20 Q. They're good projects?
 21 MR. HUMPHRIES:
 22 A. Yes.
 23 MS. DAWSON:
 24 Q. Okay, so then I'll move on to Ramea, which I
 25 understand there's two different undertakings

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1 in Ramea. One is privately owned and one is
 2 owned by Nalcor, would that be correct?
 3 MR. HUMPHRIES:
 4 A. That's correct.
 5 MS. DAWSON:
 6 Q. You may consider Nalcor private, but I'm
 7 thinking it's not privately owned, but one in
 8 Ramea is and one is not, right?
 9 MR. HUMPHRIES:
 10 A. That's correct.
 11 MS. DAWSON:
 12 Q. Now the one that is not owned, I'm assuming
 13 again with Ramea it was both capacity and it
 14 made economic sense, would that be correct?
 15 MR. MOULTON:
 16 A. It would be - it made economic sense. It
 17 wasn't for capacity, no. It was just for
 18 energy displacement.
 19 MS. DAWSON:
 20 Q. Okay, so you might want to tell me then what
 21 was the genesis behind - we'll first take the
 22 one that's privately owned.
 23 MR. MOULTON:
 24 A. The one that's privately owned, I wasn't
 25 directly involved when it came about, but I

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1 was on the periphery. To my mind, the
 2 developer approached Hydro. It was a
 3 combination of building a wind plant to
 4 provide energy. He was also doing research
 5 into a control system to enable what's called
 6 a medium penetration wind plant, basically to
 7 put enough wind on the system that the wind
 8 and the diesel plants affect each other. So
 9 to my knowledge, I think he also got a grant
 10 from the Federal Government partially to do
 11 that, and we were very interested in his
 12 research and that a control system like that
 13 would be developed, but he approached us and
 14 we signed a power purchase agreement, he built
 15 his wind plant and it's operated reasonably
 16 well ever since.
 17 MS. DAWSON:
 18 Q. And then Nalcor has one itself?
 19 MR. MOULTON:
 20 A. Yes, it does -
 21 MS. DAWSON:
 22 Q. But that's a combination?
 23 MR. MOULTON:
 24 A. That is more research and development project.
 25 One of the issue with putting wind plants on

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1 diesel systems is that sometimes the wind -
 2 you know, you're in the middle of the night
 3 and the load on the system is low and the wind
 4 is high, sometimes the wind is producing more
 5 power than the system can use, or sometimes in
 6 their interactions with the diesels you run
 7 into again that the diesels have to operate at
 8 a certain level and again the system can't
 9 take all the energy that the wind produces, so
 10 in both cases you end up either having to shut
 11 down wind turbines or spilling the energy off,
 12 we call it dump load. A lot of times, I
 13 think, like, in Ramea, it's like a big hot
 14 water tank, it's just somewhere to put the
 15 energy because the system can't take it. I
 16 think a lot of systems you're looking at
 17 losing 30 or 40 percent of your energy to
 18 this. So the idea in Ramea was to see if we
 19 could use that excess energy that would be
 20 wasted to produce hydrogen and then store the
 21 hydrogen, and then in times when the wind
 22 wasn't blowing or you could use it, you could
 23 use that stored hydrogen to produce energy,
 24 but that wasn't, I'll say, a commercially
 25 viable wind project. It was and is still a

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1 research and development project.
 2 MS. DAWSON:
 3 Q. And I assume then Nalcor is getting funding
 4 from the Federal Government for that?
 5 MR. MOULTON:
 6 A. I'm not sure about the Federal Government -
 7 well, ACOA, a number of universities, there's
 8 a number of agencies that are contributing to
 9 the funding of that.
 10 MS. DAWSON:
 11 Q. So the issue then with Ramea is storage, is it
 12 mostly?
 13 MR. MOULTON:
 14 A. Well, that's an issue - I wouldn't say an
 15 issue with Ramea, it's an issue with most
 16 systems again if you try to put on a diesel
 17 system where it's small and doesn't have a lot
 18 of load, you run into that issue with pretty
 19 well every isolated diesel system, again if
 20 you try to put on any amount of wind
 21 generation.
 22 MS. DAWSON:
 23 Q. But I understand, at least from your
 24 application, when you refer to a world class
 25 wind regime, are you indicating both Ramea and

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1 St. Lawrence and Fermeuse? At least the way I
 2 read your application, you certainly refer to
 3 both Ramea undertakings as being world class,
 4 would that be correct?
 5 MR. MOULTON:
 6 A. That's correct. Well, in the case of at least
 7 Fermeuse and St. Lawrence where our wind
 8 capacity basically the amount of energy - you
 9 know, if you could run the - if the wind was
 10 blowing a storm all the time, and you could
 11 run the wind turbines flat out all the time,
 12 we'd say the capacity would be 100 percent. At
 13 Fermeuse and St. Lawrence, we're averaging
 14 about 40 percent. Most places are very happy
 15 if they get 30 percent, so from that we do
 16 quite well with the wind there.
 17 MS. DAWSON:
 18 Q. And then the Ramea is the one I'm more - the
 19 undertakings in Ramea are the ones I'm more
 20 interested in. What is the savings then on
 21 diesel for Ramea with both these undertakings?
 22 (9:30 a.m.)
 23 MR. MOULTON:
 24 A. The contract with Ramea, I know for the
 25 private wind farm, and I'm pretty sure for

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1 Nalcor it's the same thing, Hydro is not
 2 actually saving anything, we're basically
 3 giving them 100 percent of avoided fuel cost.
 4 So we're not gaining anything out of it, but
 5 we're not losing, the customer basically
 6 remains whole.
 7 MS. DAWSON:
 8 Q. Do you get any credits from the Federal
 9 Government for any of this?
 10 MR. MOULTON:
 11 A. What type of credits?
 12 MS. DAWSON:
 13 Q. I just wonder on emissions?
 14 MR. MOULTON:
 15 A. I don't know if we've applied in Ramea to get
 16 emissions credits or not, I'm not sure. We do
 17 on the - I don't say we do, the wind
 18 developers in Fermeuse and St. Lawrence, they
 19 get - I think they get emissions credits.
 20 Where we don't own the facilities, we can't
 21 actually apply for the credits.
 22 MS. DAWSON:
 23 Q. It would be Nalcor then that gets them if
 24 they're available?
 25 MR. MOULTON:

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1 A. If they're available.

2 MS. DAWSON:

3 Q. Now at some point, I understand that there was

4 a study done in Labrador on alternative energy

5 sources and it was an undertaking by - well,

6 it was an undertaking by Hydro, and I think

7 Hatch had some interface there?

8 MR. MOULTON:

9 A. Yes, Hatch were the consultant.

10 MS. DAWSON:

11 Q. They were the consultants on this. Now that

12 report was done and completed in 2009, and I'm

13 assuming you're familiar with that report?

14 MR. MOULTON:

15 A. Yes, I am.

16 MS. DAWSON:

17 Q. I've provided it to the Board and my

18 colleagues here, and I just want to take you

19 to that report. What has been done with this

20 report since 2009, what has been done with the

21 recommendations, and I'm going to take you

22 through the recommendations, but what has

23 Hydro done with this report and its

24 recommendations since 2009?

25 MR. MOULTON:

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1 A. Well, just to get back to that, that report

2 was funded by the Provincial Government.

3 MS. DAWSON:

4 Q. Yes.

5 MR. MOULTON:

6 A. And we've done the report through Hatch.

7 Hatch is the consultant, we've done the report

8 through them, and again it'll be the

9 Provincial Government's report. I'll give you

10 a minute or two just to give you a little bit

11 of a history. As you say, the report was

12 completed in December, 2009. It wasn't

13 actually released to the public until June,

14 2011.

15 MS. DAWSON:

16 Q. But you would have had it?

17 MR. MOULTON:

18 A. I think we would have, yes.

19 MS. DAWSON:

20 Q. Yes.

21 MR. MOULTON:

22 A. But at that point in June, 2011, at the same

23 time the report was released, the Provincial

24 Government gave us more funds to go and - you

25 know, from the findings of that report, to go

Page 27

1 down farther, look at the sites or look at the

2 things in that report that came out well. So

3 in May, 2012 - let's see, May in 2011, yeah,

4 there was funds released for an RFP, and the

5 contract was awarded to Hatch in - RFP was

6 issued in September, sorry, and the contract

7 was awarded to Hatch in December of 2011. For

8 the first six months of 2012, they were

9 looking at sites, what would be the best sites

10 to do things. An example of wind, where would

11 be the best sites to put the met towers, and

12 then one of the things that did - I think we

13 weren't quite expecting, at that point they

14 spent a year getting the permits for the met

15 towers from NAV CAN, Transport Canada, and the

16 Nunatsiavut Government, so they were receiving

17 the permits to install the towers at that

18 time. That basically took that late

19 fall/winter to the next spring, so basically

20 the work didn't get started and actually

21 putting up the towers until the spring/summer

22 of 2013. So tower installation began in July,

23 2013, and the tower installation was finished

24 in November of 2013, and it was set up for

25 data to be collected for 18 months, two

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1 winters and a summer. So data collection

2 finished this June and the towers were

3 decommissioned in July, and since that time

4 Hatch has been writing up the final reports,

5 doing their analysis of it, and the reports,

6 I'll say, they'll be released within a month -

7 I shouldn't say that, they'll be given to the

8 Government within a month and then it's the

9 Government's prerogative when they want to

10 release them.

11 MS. DAWSON:

12 Q. Okay. I understood that you were anticipating

13 another report at least - I think there was

14 some indication to the Board that you were

15 expecting another report in 2013. So it's

16 just a matter of timing and Hatch getting its

17 report together?

18 MR. MOULTON:

19 A. Yes.

20 MS. DAWSON:

21 Q. And I do want to take you to that particular

22 report, the preliminary assessment of

23 alternative energy potential in coastal

24 Newfoundland, and I understand from the report

25 there was three of my five communities that

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1 I'm interested in; Nain, Hopedale, and
 2 Makkovik, where they actually did recommend,
 3 or at least the way I read this report, is
 4 they strongly recommended that wind generation
 5 be looked at further in these communities. So
 6 I'll take you to page 29 of that report where
 7 it speaks about - I'm not going to go through
 8 the entire report, I just want to take you to
 9 the recommendations. For Nain, it's on page
 10 29, it's 5.1.2.

11 MS. GLYNN:
 12 Q. Ms. Dawson, I'm going to interject so that we
 13 can enter it into the record.

14 MS. DAWSON:
 15 Q. Oh, I'm sorry.

16 MS. GLYNN:
 17 Q. No, that's perfectly okay. It will be entered
 18 as Information #18.

19 MS. DAWSON:
 20 Q. Thank you. There's a fair bit of analysis
 21 done and the part that I was most amazed with
 22 was the economic analysis. So they just
 23 didn't say let's do this and get a lot of
 24 government money to do this, they actually say
 25 with respect to Nain after their analysis,

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1 "Based on simulation results using current
 2 estimates of wind, hydro, and solar potential,
 3 Nain would easily use wind turbine to supply
 4 30 percent of its required system load. As
 5 forecasted, system growth occurs and diesel
 6 fuel prices rise, the percentage of load that
 7 would be supplied by wind energy increases
 8 slightly to 31 percent with the addition of an
 9 extra turbine. There is an immediate
 10 financial benefit to using wind energy in
 11 comparison with diesel fuel prices and this
 12 benefit increases as fuel prices rise". So
 13 I'm going to put it to you that I assume that
 14 this analysis would be even more interesting
 15 to look at given the price of diesel in 2015
 16 versus 2009, would it not?

17 MR. MOULTON:
 18 A. I'd have to go back and check, but I think
 19 current diesel prices are probably - they're
 20 in a similar area.

21 MS. DAWSON:
 22 Q. Okay, so -

23 MR. MOULTON:
 24 A. They're in a similar area, but you're right,
 25 yeah, it's still a good project to look at.

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1 MS. DAWSON:
 2 Q. Right, so it's now four or five years later
 3 and there's a similar analysis with both
 4 Hopedale and Makkovik in this report, and I
 5 think even for Makkovik, they highly recommend
 6 that this be - that wind energy be installed,
 7 and I'm thinking about - if one looks at the
 8 rural deficit, although you guys have not
 9 spoke to the rural deficit, it's been talked
 10 about here for months, considering the 64
 11 million rural deficit - is it 64?

12 MR. MOULTON:
 13 A. I think it's in that area.

14 MS. DAWSON:
 15 Q. Yes, 64. Given the emphasis on rural deficit
 16 and given the emphasis that the people from
 17 Nunatsiavut contribute to that and others have
 18 to pay, I'm wondering why we're still this far
 19 behind in an effort by Hydro to do some
 20 alternative energy sources in Nunatsiavut, but
 21 with respect to money, gas emissions, and
 22 reliability if nothing else? Why are we still
 23 at the state of just analysis and nothing more
 24 done than analysis five years later?

25 MR. MOULTON:

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1 A. Well, as I say, we'll start - our mandate is
 2 to supply least cost reliable power, so with
 3 wind, you know, we started getting, for one
 4 thing, as I say, getting the information and
 5 doing the estimates for this type of work is
 6 an expensive process. We started in 2009 at
 7 the screening level to see did it make any
 8 sense at all, let's do it on a very high
 9 level, does it make any sense at all. As you
 10 say, with these three communities from a wind
 11 point of view, it looked like at that point in
 12 time it does make sense. As you read from
 13 many studies, we can look at it, as we did, I
 14 think, there, we had some local small ones,
 15 wind can vary greatly within a very short
 16 distance, and the only way you find out
 17 exactly what wind resource you've got is to
 18 actually put met towers at the site and
 19 measure the wind.

20 MS. DAWSON:
 21 Q. Yes, but my understanding is that you hired
 22 Hatch, that Hatch, no disrespect, Hatch
 23 doesn't - they're not selling hamburgers, this
 24 is what they do, they do this sort of
 25 analysis.

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1 MR. MOULTON:
 2 A. Yes.
 3 MS. DAWSON:
 4 Q. And in 2009, they wrote this report taking
 5 into consideration all those different things
 6 that you just spoke about, in particular wind
 7 levels and wind consistency, and the fact that
 8 there was going to be maybe some ice, so they
 9 talked about arctic wind blades, so on and so
 10 forth, all those things were considered in
 11 2009 by Hatch. They did an in depth analysis
 12 in this report which goes on showing huge
 13 amounts of data, as far as I'm concerned, and
 14 graphs that only, I guess, electrical
 15 engineers could possibly read, and came up
 16 with this recommendation, a strong
 17 recommendation in three communities. I guess,
 18 my question to you again is I don't see, and
 19 maybe I don't understand the process, as a
 20 layperson, and again give my comments about
 21 the rural deficit, I don't see a willingness
 22 on behalf of Hydro to put some effort into
 23 developing wind farms. You've already got
 24 your wind farms in Ramea, St. Lawrence, and
 25 Fermeuse, and they're doing very well and

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1 there might have been a learning curve there
 2 that you can apply now to Makkovik, Hopedale,
 3 and Nain, and I'm just a little puzzled, and
 4 so are my clients, about why more has not been
 5 done to develop this alternative wind power in
 6 these communities?
 7 MR. MOULTON:
 8 A. Just to go back, the wind assessment in the
 9 2009 report wasn't done by Hatch. That was
 10 done by Hydro.
 11 MS. DAWSON:
 12 Q. Well -
 13 MR. MOULTON:
 14 A. In-house. I know, but -
 15 MS. DAWSON:
 16 Q. Hatch took that and made some recommendations?
 17 MR. MOULTON:
 18 A. Yes. Again we haven't - as you're saying, it
 19 takes a long time to make sure that you're
 20 putting in, I'll say, the proper thing. You
 21 know, I suppose we could have gone in 2009
 22 stuck in a 50 kilowatt wind turbine, say,
 23 okay, yeah, we've got a wind turbine now in
 24 these communities if the economics at that
 25 time when we delved into it farther said that

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1 was the thing to do, but what we've actually
 2 done is to go back and say what exactly is the
 3 wind resource and we can delve down into it
 4 and, you know, we've got estimates, but
 5 looking at this study, replacing anywhere from
 6 a little bit to almost the entire amount of
 7 energy in the community with wind. One of the
 8 other things too, what we did in 2009 was a
 9 screening level study. We do have to
 10 demonstrate to the Board when we build
 11 something like this that it is actually going
 12 to be least cost and it is actually going to
 13 save the customer money, so we needed the
 14 additional information that we've collected
 15 over that time to get to the place where we
 16 can actually - I think we've got the
 17 information now, or we've got most of the
 18 information, we still haven't got all the
 19 information to be able to make a very good
 20 informed decision on how we can maximize the
 21 amount of renewable energy that we put in
 22 these communities.
 23 MS. DAWSON:
 24 Q. The Hatch Report that's being undertaken now,
 25 does it deal with Nain, Hopedale, and

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1 Makkovik?
 2 MR. MOULTON:
 3 A. It does, yes.
 4 MS. DAWSON:
 5 Q. So they're now looking at actual - is it a
 6 detailed analysis with respect to both
 7 generation and then integration into the
 8 diesel system that is there now?
 9 MR. MOULTON:
 10 A. These reports were - the main focus of these
 11 reports was to collect detailed quality wind
 12 information for these systems. They do do
 13 some analysis of putting in turbines, the
 14 number of wind turbines that could be put in
 15 the community and what would be optimal, and
 16 some integration, they do, yes.
 17 MS. DAWSON:
 18 Q. Just so the Board understands where I am with
 19 this, I just want to then take you to page 30,
 20 the next page, where it talks about the
 21 economic analysis for Hopedale, and that
 22 particular paragraph I want to refer to is
 23 5.2.2 of page 30, and again there's a
 24 recommendation there indicating that there's a
 25 possibility of meeting the community's energy

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1 requirement of 43 to about 47 percent, would I
 2 be correct there?
 3 MR. MOULTON:
 4 A. Yeah, that's what the economic - 5.2.2 says.
 5 (9:45 a.m.)
 6 MS. DAWSON:
 7 Q. Right, and then they also deal with the
 8 economic part of it. At the end, they think
 9 that wind energy at the end will be even more
 10 economically benefit for Hopedale?
 11 MR. MOULTON:
 12 A. Yes, but again this report is a screening
 13 level analysis, it's not delving down into -
 14 it's got some of the costs there, and from the
 15 costs that were included, this is the results
 16 we get. Again if you're going to put - if
 17 we're going to put the wind in to supply 43 to
 18 47 percent of the energy, you'd have to get
 19 into studies again making sure that the wind
 20 turbines interact with the diesel plant
 21 without affecting, I'll say, the reliability
 22 of the system and power quality effects on the
 23 other customers. Again if you look at the
 24 sources that were used to get the wind
 25 regimes, how much wind is available in these

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1 places, they were again screening level. What
 2 we'll have now with the current reports, as
 3 you say, data done by a quality company like
 4 Hatch, data that's been taken on location at
 5 pretty well the height that the wind turbines
 6 would be, and that's been quality assured.
 7 You'll be able to - with that data that we've
 8 got now, we'll be able to make a much more
 9 definite case to say here's the costs, here's
 10 what the benefits are going to be.
 11 MS. DAWSON:
 12 Q. In the case of the Hatch report that they're
 13 doing now, did I get it from you that it was
 14 the Newfoundland Government that was paying
 15 for that again?
 16 MR. MOULTON:
 17 A. That's correct.
 18 MS. DAWSON:
 19 Q. And not Hydro?
 20 MR. MOULTON:
 21 A. That's correct.
 22 MS. DAWSON:
 23 Q. So none of your resources have gone into this
 24 report?
 25 MR. MOULTON:

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1 A. Not a whole lot from that point of view. I'll
 2 say our resources have gone into it, it's been
 3 funded by the government.
 4 MS. DAWSON:
 5 Q. See, I guess, I'm comparing apples and
 6 oranges, but, I guess, my clients are
 7 interested in this. When you look at the
 8 billions of dollars that have gone into
 9 Muskrat Falls to develop Muskrat Falls on land
 10 that is adjacent to Nunatsiavut, and the money
 11 that has gone into that both by Hydro and the
 12 Government of Newfoundland, and yet Hydro will
 13 not pay for a study to look at alternative
 14 wind power because we're certainly clearly not
 15 going to get a grid into the Nunatsiavut
 16 residents or parts of Labrador, so, I guess,
 17 my clients get confused about what that says,
 18 right. It says the money is - there's money
 19 for some things, but not for others, I guess
 20 I'm saying, Mr. Moulton. That's very clear to
 21 me, and although I might be comparing apples
 22 to oranges, it is very, very confusing for my
 23 clients who live right next door to this huge
 24 falls that they don't get the benefit from?
 25 MR. MOULTON:

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1 A. Well, we are a crown owned corporation by the
 2 government, and in this case, considering that
 3 since 2009/2012 the government has been
 4 providing money to do these studies, I'll say
 5 why would Hydro - why would we go and do the
 6 same studies at the same time? I can't say
 7 what would have happened from 2009 if the
 8 government hadn't supplied this money, whether
 9 we would have been in looking at it, I can't
 10 say that, but that's not to say - because the
 11 government funded the studies, that's not to
 12 say that if the government hadn't funded the
 13 studies that Hydro would not have. In the
 14 same time, I just want to add from that point,
 15 you know, I'll say - not behind the scenes,
 16 but as part of our daily business, you just
 17 don't see it out, we've talked with many
 18 developers about different sources of
 19 generation or different projects, different
 20 things, you know, we've talked to a number of
 21 proponents that have wanted to use wood in
 22 these communities to generate power, we've
 23 talked to other developers that are interested
 24 in the wind. We haven't talked to - I'm just
 25 trying to say, we have talked to a number of -

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1 there are people always inquiring, we're
 2 always inviting, and we always say to people,
 3 you know, we're very happy to provide you with
 4 any information and help that we can, and we
 5 do that.

6 MS. DAWSON:
 7 Q. Who makes the final determination on whether
 8 to build a wind farm, who made the final
 9 determination with respect to St. Lawrence and
 10 Fermeuse, at what level is that decision made?

11 MR. MOULTON:
 12 A. Depending on the size of the wind farm or
 13 depending, it would - I think Fermeuse and St.
 14 Lawrence - I should go back a little bit.
 15 With Fermeuse and St. Lawrence, the decision
 16 was made to put out a request for proposals.
 17 Hydro looked at it and decided not to build
 18 the wind farms themselves. So Hydro put out a
 19 request for proposals for private developers
 20 to submit proposals to build - well, first it
 21 was St. Lawrence, and the pricing was put in.
 22 It wasn't to say we're going to build a wind
 23 farm no matter what. The pricing was put into
 24 the RFP, I think, at 7 cents, the most we want
 25 to pay is about 7 cents a kilowatt hour at the

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1 time, and if we hadn't got proposals back that
 2 met that criteria, we wouldn't have built the
 3 wind farm. As it turned out, we did get
 4 proposals back that met that criteria, and we
 5 awarded that wind farm. Then we put out - as
 6 there was other interest, we put out a second
 7 proposal and again got a proposal back at a
 8 price to build Fermeuse. So we did build
 9 these wind farms - Hydro didn't build them,
 10 the decision was made to put out requests for
 11 proposals, and we did get the wind farms at a
 12 very good price, or proposals to build them at
 13 a very good price, and there was benefits to
 14 all the customers. So we did go ahead and
 15 sign the power purchase agreements with the
 16 proponents, they built the wind farms, and
 17 they've operated very successfully. I just
 18 want to make the point too on our isolated
 19 systems, we did have a proponent come to us
 20 about 2005/2006/2007 in St. Brendan's who
 21 wanted to build a wind farm there, a private
 22 developer. We worked with them quite
 23 extensively, we actually signed the power
 24 purchase agreement with them to build the wind
 25 farm. Now they ended up in the end, even

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1 though they did have grant money arranged for,
 2 they didn't build the wind farm and it went by
 3 the wayside, but we are out - just to say we
 4 are out - we were out looking for other
 5 opportunities to do these type things.

6 MS. DAWSON:
 7 Q. There is a program that I wanted to ask you a
 8 question about. I wasn't quite clear -
 9 there's a Federal Eco-Energy Renewable Energy
 10 Incentive Program. What is that about?

11 MR. MOULTON:
 12 A. I'm not familiar with it, to be truthful.

13 MS. DAWSON:
 14 Q. You're not familiar with that program at all?

15 MR. MOULTON:
 16 A. Not that - I may be, or I may not be, there's
 17 been a number of programs.

18 MS. DAWSON:
 19 Q. So you're not familiar with how that works?

20 MR. MOULTON:
 21 A. Not that particular program.

22 MS. DAWSON:
 23 Q. It was mentioned in Information PUB-014, and I
 24 think 017, both of them, and I was just
 25 wondering if you had - were you involved in

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1 this request for information?

2 MR. MOULTON:
 3 A. I don't think so. I'd have to see it. Could
 4 you bring it up, please?

5 MS. DAWSON:
 6 Q. Yes, just go down to the bottom. I think it's
 7 at the - yeah, the last paragraph on that
 8 page.

9 MR. MOULTON:
 10 A. Okay. No, I'm sorry, I am familiar with that
 11 program. I am familiar with that program.

12 MS. DAWSON:
 13 Q. It says, "Hydro received 75 percent", so
 14 that's what my question was about earlier
 15 about getting some sort of government
 16 incentive for something, and I wanted to cover
 17 with you how that works?

18 MR. MOULTON:
 19 A. That was a - if I remember correctly, two
 20 things, and I stand to be corrected. I think
 21 that program - that particular program has
 22 ended, if I'm not mistaken. I don't think
 23 it's eligible. I could be wrong about that.

24 MR. GOULDING:
 25 A. I was supposed to have a break today, but I

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1 can comment on that. This was part of the
 2 evidence, I guess, that I was -
 3 MS. DAWSON:
 4 Q. You're the guy who drafted this?
 5 MR. GOULDING:
 6 A. Well, this particular section here. This is a
 7 ten year program, so it would have started at
 8 the dates of the in-service of the two wind
 9 farms, and it's an Eco-Energy Incentive
 10 Program that's funded by the Feds. They would
 11 pay the owner/operators of the wind farms an
 12 eco-energy credit of 1 cent per kilowatt hour
 13 up to a maximum cap of 82.8 -
 14 MR. MOULTON:
 15 A. It's a 30 percent capacity factor, isn't it?
 16 MR. GOULDING:
 17 A. Yes, yeah, that's correct, that's correct, and
 18 Hydro is still receiving payments. It's
 19 reflected as a credit in our test year power
 20 purchase forecast, so we would anticipate to
 21 be receiving 75 percent of the credit for the
 22 ten year program.
 23 MS. DAWSON:
 24 Q. And does this credit relate to all the wind
 25 farms?

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1 MR. GOULDING:
 2 A. It would relate to the two large wind farms at
 3 Fermeuse and St. Lawrence.
 4 MS. DAWSON:
 5 Q. So how much money then would Hydro - what kind
 6 of credits are we looking at for Hydro, what
 7 benefit is it for you?
 8 MR. GOULDING:
 9 A. On the cap of 82.78 gigawatt hours annually,
 10 it represents about \$620,000.00 per year, but
 11 certainly - and again, I don't know if this
 12 would apply to the smaller wind farms, but
 13 certainly if you pay - if a rate is paid out
 14 based on the amount of generation that the
 15 wind farm produces on an annual basis and for
 16 the same rate, we certainly wouldn't expect
 17 that level of credit.
 18 MS. DAWSON:
 19 Q. And so where did you say that credit is
 20 reflected in the application?
 21 MR. GOULDING:
 22 A. It's in our - it would be in our power
 23 purchase schedules.
 24 MS. DAWSON:
 25 Q. So then at the end of the day, there is some

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1 benefit to Hydro with respect to these two
 2 larger facilities, St. Lawrence and Fermeuse?
 3 MR. GOULDING:
 4 A. With respect to these two, there is a limited
 5 horizon. It is a ten year program.
 6 MR. MOULTON:
 7 A. But I do think - again I stand to be
 8 corrected, but my memory that there was a ten
 9 year program, but I think the applications for
 10 the program have ended for that particular
 11 program.
 12 MS. DAWSON:
 13 Q. I understood it was ten years from 2007? Is
 14 it ten years from the time that you sign the
 15 contracts, which I think was - is it 2007 they
 16 were signed or 2005?
 17 MR. GOULDING:
 18 A. It was -
 19 MR. MOULTON:
 20 A. They went in operation in late 2008 and 2009.
 21 MS. DAWSON:
 22 Q. So I think it was both ten year contracts with
 23 both these companies, I understand?
 24 MR. GOULDING:
 25 A. That's correct.

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1 MS. DAWSON:
 2 Q. So the - are you saying the program - I
 3 understood the incentives were for ten years.
 4 MR. MOULTON:
 5 A. For Fermeuse and St. Lawrence, yeah, but I
 6 think the applications for new entries to the
 7 program - I'm not sure of this, but I think
 8 they did end a couple of years ago.
 9 MS. DAWSON:
 10 Q. Okay. Yes, but I think - am I right, Mr.
 11 Goulding, that what you're saying - the
 12 evidence that you're giving is that this is
 13 reflected in the current application?
 14 MR. HUMPHRIES:
 15 A. I think what he's - the benefits, the ten year
 16 benefits for these projects that were entered
 17 into in 2008 and 2009 will continue for ten
 18 years, but there's no eligibility for new
 19 projects. I think that's what you're -
 20 MR. MOULTON:
 21 A. That's what I'm - yes that's what I'm trying
 22 to say.
 23 MS. DAWSON:
 24 Q. Okay.
 25 MR. MOULTON:

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1 A. And we do - you know, at Hydro we look at it
 2 trying to reduce costs and look at things like
 3 this. You know, we are in an association
 4 called "The Canadian Off-Grid Utilities
 5 Association", and we have fairly regular
 6 meetings and get together, all the utilities
 7 across Canada that have off-grid communities,
 8 to talk to each other, see what everybody else
 9 is doing, and also explore opportunities to be
 10 able to provide service at a lower cost.
 11 MS. DAWSON:
 12 Q. It's just, I guess, Mr. Moulton, and I
 13 apologize if I'm being a bit rigorous about
 14 this, but I sit here and listen to a great
 15 deal of discussion about the rural deficit,
 16 and there's opportunities out there to reduce
 17 the rural deficit and putting in these wind
 18 farms and -
 19 MR. MOULTON:
 20 A. There may be, that's not a - that's not a
 21 given.
 22 MS. DAWSON:
 23 Q. Well, that's not what Hatch says, but in any
 24 event, I thought Hatch said they would be -
 25 MR. MOULTON:

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1 A. As I say, I don't think - the comments in that
 2 report weren't Hatch's, they were Hydro's.
 3 MS. DAWSON:
 4 Q. Well, then you should -
 5 MR. MOULTON:
 6 A. They're Hydro's, but again as I say -
 7 MS. DAWSON:
 8 Q. You should have worded it differently then.
 9 MR. MOULTON:
 10 A. Okay.
 11 MS. DAWSON:
 12 Q. That's not what those recommendations say.
 13 MR. MOULTON:
 14 A. No, but what I'm saying is on a -- if you look
 15 at the entire report, the report is at a
 16 screening level basis, these are appropriate
 17 comments. What that led on to was saying,
 18 okay, at a screening level, this looks good.
 19 So let's go explore it more extensively and
 20 make sure that it is good, which we've done
 21 and which, you know, we're in a point now,
 22 we're finished the wind data, the project
 23 reports will be given to the Government in
 24 less than a month. We have a collection of --
 25 for the three Nunatsiavut communities. We

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1 have, you know, some really good wind data
 2 that we can use or any other developer out --
 3 if they want to come in, use that data and
 4 work with us to build a wind plant themselves
 5 and give us a proposal, they can use it as
 6 well. So right now, we've gotten to the
 7 point, we're in a good place to be able to go
 8 and, you know, do something in that area.
 9 And if you go out and read the -- if you
 10 go out and read, you know, literature of other
 11 studies that have been carried out, especially
 12 for the -- you know, I'll say isolated
 13 communities like we're dealing with, they
 14 don't get done in a year or two, not if you're
 15 doing a really integrated wind diesel project.
 16 They take a number of years.
 17 MS. DAWSON:
 18 Q. There is, I think -- no, I think that would be
 19 -- that's all my questions. Thank you.
 20 CHAIRMAN:
 21 Q. Okay. I think we're over to Madam Greene.
 22 CROSS-EXAMINATION BY MAUREEN GREENE, Q.C.
 23 GREENE, Q.C.:
 24 Q. Yes, thank you, Mr. Chair. Good morning.
 25 MR. MOULTON:

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1 A. Good morning.
 2 MR. HUMPHRIES:
 3 A. Good morning.
 4 MR. STRATTON:
 5 A. Good morning.
 6 MR. GOULDING:
 7 A. Good morning.
 8 GREENE, Q.C.:
 9 Q. The first area that I would like to ask some
 10 questions about is the Hydro's planning
 11 criteria and I wanted to talk about the
 12 development of that criteria. So if we could
 13 look first at the criteria, what the criteria
 14 was and how it was applied prior to the
 15 outages of 2014, and here I think it would be
 16 helpful if we could look at the attachment IC-
 17 NLH-016, which was the November 2012
 18 generation planning report. So if we go to
 19 page 16 of the document, it's page 16 of 43.
 20 I thought it would be helpful if we had the
 21 planning criteria in front of us. So I'll
 22 leave it to the panel as to whether it's Mr.
 23 Humphries or Mr. Moulton could describe for us
 24 the planning criteria that Hydro still uses
 25 with respect to planning to identify the next

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1 generation's requirement.
 2 MR. HUMPHRIES:
 3 A. Okay. I will start and Mr. Moulton will
 4 contribute as needed as we go through. This
 5 is our criteria that's on the screen there now
 6 that has been used for a number of years, a
 7 long time actually, probably 40 years close to
 8 it. There's been some changes in the some of
 9 the terminology, I guess, or units of measure,
 10 but effectively the criteria, the intent of
 11 the criteria hasn't changed since the 1970s.
 12 There are two components to it. There's
 13 a capacity component that the Island
 14 Interconnected System should have sufficient
 15 generating capacity to satisfy a loss of load,
 16 LOLH, expectation target of not more than 2.8
 17 hours. That measure has changed a number of
 18 times over the years, I guess, but
 19 effectively, it can be tied back and probably
 20 the most popular or prevalent measure of
 21 capacity adequacy in the North American market
 22 is a loss of load expectation, LOLE, which is
 23 categorized as a number of days in a number of
 24 years and the North American standard is a
 25 loss of one day in ten years. Our criteria,

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1 long standing, has been on the basis that we
 2 would have one day in five years, instead of
 3 one day in ten years.
 4 GREENE, Q.C.:
 5 Q. So the criteria -
 6 MR. HUMPHRIES:
 7 A. .1 days per year or .2 days per year in our
 8 case, and through the evolution, we've gone to
 9 this LOLH measure that's been now 2.8 hours
 10 and I think if we go back, there was a
 11 question back in a hearing back in 2001 on the
 12 stand here and people, the Board struggling
 13 with and trying to understand the differences
 14 between these measures and what they were and
 15 the analogy was, well, would you like a 2.2
 16 pound steak or a one kilogram steak. That's
 17 the difference. It's a different number and a
 18 different measure, but effectively, it means
 19 the same thing and effectively our criteria,
 20 when it was established back in the '70s, was
 21 based on a premise of .2 days per year, one
 22 day in five years or whatever, and it hasn't
 23 changed since.
 24 GREENE, Q.C.:
 25 Q. And the criteria expression of the 2.8 hours

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1 per year has been in place since at least
 2 2000?
 3 MR. MOULTON:
 4 A. That's correct, yeah. 1999 or 2000, around
 5 there.
 6 GREENE, Q.C.:
 7 Q. With respect to the energy criteria, Mr.
 8 Humphries, could you explain how that works?
 9 MR. HUMPHRIES:
 10 A. Okay. So the Island Interconnected system
 11 should have sufficient generating capability
 12 to supply all its firm energy requirements
 13 with firm system capabilities and the
 14 definition of the firm system capabilities,
 15 that refers to basically the ability of the
 16 firm capacity over hydrology and that's based
 17 on a 50 plus year hydrology record we keep and
 18 it's based on the lowest three-year cycle in
 19 that history. So that we should plan to have
 20 sufficient firm energy available on the system
 21 in the event that we would experience that
 22 minimum firm cycle to supply the firm load.
 23 GREENE, Q.C.:
 24 Q. And again, that has been discussed in a number
 25 of previous rate applications before the

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1 Board? Is that correct?
 2 MR. HUMPHRIES:
 3 A. Yes, it has.
 4 GREENE, Q.C.:
 5 Q. If we go to Table 5.1 on page 18, we see how
 6 the criteria was applied when this report was
 7 prepared. So, this was prepared in November.
 8 The date of the report was November 2012 and
 9 we see that the first shading under the LOLH
 10 criteria of 2.8 occurs in 2015. Mr.
 11 Humphries, could you explain why that was
 12 shaded and what the significance of the
 13 shading was?
 14 MR. HUMPHRIES:
 15 A. Well as you see, if you come over to the LOLH
 16 column and it's highlighted on the top, the
 17 limit of 2.8 and as we progress down, starting
 18 in 2012, our LOLH was .41 and 3.97, '14, 2. 59
 19 and between '14 and '15, we crossed the 2. 8
 20 line and we have an LOLH projection of 4.57 in
 21 that year.
 22 GREENE, Q.C.:
 23 Q. So in layman's terms, when anyone would look
 24 at this, the first thing, a red flag would go
 25 up to indicate -- because that's the first

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1 year you were indicating a violation of your
 2 criteria. Is that correct?
 3 MR. HUMPHRIES:
 4 A. That's correct.
 5 GREENE, Q.C.:
 6 Q. And I guess, just to put the chart in context,
 7 there were two scenarios considered in this
 8 report? Is that correct? The Island
 9 Interconnected and the Isolated system.
 10 MR. HUMPHRIES:
 11 A. Yes, that's correct.
 12 GREENE, Q.C.:
 13 Q. And the report indicated that regardless of
 14 which alternative was under consideration, the
 15 capacity deficit occurred in 2015. Is that
 16 correct?
 17 MR. HUMPHRIES:
 18 A. That's correct.
 19 GREENE, Q.C.:
 20 Q. So if we look over to the last column, the
 21 energy balance, here we don't see a shading
 22 until the first year is 2019 and what does
 23 that tell us?
 24 MR. HUMPHRIES:
 25 A. So that tells us that in 2019, we would exceed

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1 or violate this firm energy capability based
 2 on our firm hydrology sequence that we spoke
 3 of earlier.
 4 GREENE, Q.C.:
 5 Q. So we were going to have a capacity or a peak
 6 demand issue prior to when we had an energy
 7 issue?
 8 MR. HUMPHRIES:
 9 A. That's correct.
 10 GREENE, Q.C.:
 11 Q. And that's typical?
 12 MR. HUMPHRIES:
 13 A. Well, it has been typical for us, I guess.
 14 GREENE, Q.C.:
 15 Q. Typical for us. Now when we look at -- coming
 16 back to the load forecast, which -- and have a
 17 maximum demand again with the two
 18 alternatives. In preparing what the demand
 19 was for the Island Interconnected system, that
 20 would have prepared using your -- again, your
 21 long standing methodology of -- can you
 22 describe some of the factors that go into how
 23 you determine that?
 24 MR. HUMPHRIES:
 25 A. Maybe Mr. Stratton will just -

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1 MR.STRATTON:
 2 A. Sure, I can answer that, yeah. So that
 3 forecast would have been our long term
 4 planning forecast that would have been
 5 prepared in 2012 and it would have been based
 6 on our forecasting methodology, our long term
 7 forecasting methodology, which relies on
 8 regression analysis methodologies to drive the
 9 utility component of the load forecast. So,
 10 the utility component would be involved, both
 11 Newfoundland Power load forecast and the
 12 forecast for Hydro's rural area. The main
 13 drivers of that load forecast with respect to
 14 utility load would be the economic forecast
 15 for the Province during that period, as well
 16 as the price forecast and the prices for
 17 alternative energy for fuel oil prices. The
 18 other -
 19 GREENE, Q.C.:
 20 Q. And then you add on the Industrial load after
 21 you do -
 22 MR.STRATTON:
 23 A. Yes.
 24 GREENE, Q.C.:
 25 Q. Okay.

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1 MR.STRATTON:
 2 A. And the second component would be the
 3 Industrial customers and that load forecast at
 4 the time would have been the loads that would
 5 have been forecast by the Industrial customers
 6 themselves.
 7 GREENE, Q.C.:
 8 Q. And in preparing the load forecast, at that
 9 time you would have been using a P50 weather
 10 forecast? Is that correct?
 11 MR.STRATTON:
 12 A. That's correct.
 13 GREENE, Q.C.:
 14 Q. And we've already heard evidence that that
 15 means that the probability of the peak being
 16 higher is 50 percent than what you've used in
 17 that forecast? Is that correct?
 18 MR.STRATTON:
 19 A. That's correct. It has equal probability of
 20 being above or below that peak number.
 21 GREENE, Q.C.:
 22 Q. With respect to the next column which is the
 23 existing system, next to the load forecast, we
 24 see what the firm capability is and we see
 25 installed net capacity. What are some of the

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1 factors that you would have used in
 2 determining those numbers shown in those
 3 columns?
 4 MR. HUMPHRIES:
 5 A. Well, the installed net capacity, that's a
 6 reflection of the capability that's currently
 7 existing on the system or was currently
 8 existing at the time in 2012 and the firm
 9 energy is what we would expect from those
 10 resources based on the firm water cycles that
 11 we referred to in the firm water year.
 12 GREENE, Q.C.:
 13 Q. And in determining the net capacity that would
 14 be available, your assumption is made with
 15 respect to the availability of the units?
 16 MR. HUMPHRIES:
 17 A. No, that is actually the capacity. The
 18 assumptions on the availability is another
 19 part of the exercise that would be input to
 20 the LOLH analysis, but these are not degraded
 21 because of availability numbers.
 22 GREENE, Q.C.:
 23 Q. So in coming back then to the LOLH, apart from
 24 the P50 weather forecast, which is one of the
 25 assumptions, the other assumption is with

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1 respect to certain availabilities of the unit?
 2 Is that correct?
 3 MR. HUMPHRIES:
 4 A. That's correct, yes.
 5 GREENE, Q.C.:
 6 Q. So using the analysis, I just wanted to come
 7 to the conclusion, if you go to page 17, and
 8 it's toward the bottom of the page. So using
 9 your criteria that had been in place for a
 10 number of years then applying your methodology
 11 as it was at that time, you determined that
 12 the next generation source would be required
 13 by late 2014 to avoid exceeding your target?
 14 Is that correct?
 15 MR. HUMPHRIES:
 16 A. That's correct.
 17 (10:15 a.m.)
 18 GREENE, Q.C.:
 19 Q. And then if we go to page 29, under the
 20 Interconnected Island scenario in the first
 21 couple of sentences, you talk about the CT and
 22 "would result in a slight violation of Hydro's
 23 reliability criteria in the winter of 2014 to
 24 2015". So my question with respect to this is
 25 is why, if under your planning methodology

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1 showed a deficit that you were willing to
 2 accept an exceedance for that winter?
 3 MR. HUMPHRIES:
 4 A. I couldn't hear you. Could you speak up,
 5 please?
 6 GREENE, Q.C.:
 7 Q. Sorry. Here it indicates that the -- and we
 8 see later in the report, that the preferred
 9 alternative to meet the forecast deficit was a
 10 50 megawatt CT.
 11 MR. HUMPHRIES:
 12 A. That's right.
 13 GREENE, Q.C.:
 14 Q. And we also see in the report that Hydro
 15 didn't plan to put that CT in until late 2015,
 16 which would have resulted in your criteria
 17 being exceeded or violated in that winter of
 18 2014-2015, and my question was: why did Hydro
 19 determine that it was acceptable to exceed its
 20 planning criteria at that point?
 21 MR. HUMPHRIES:
 22 A. Well, at that stage, based on the schedule
 23 information that we had in hand, it looked
 24 like that it would not be possible to get a 50
 25 megawatt combustion turbine in place for the

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1 fall of 2014. The actual installation would
 2 fall over into 2015. Given the fact that
 3 there would be a slight violation, we did base
 4 our decisions there somewhat on past history.
 5 We had a similar situation in I think it was
 6 2002-2003 where we were in a similar situation
 7 where we had a potential violation in the
 8 early winter period and there were resources
 9 being developed to mitigate that violation.
 10 They would not have been in service until the
 11 following winter season. So it was not an
 12 uncommon practice. We had done it before and
 13 we had had no issues. So that factored into
 14 the decisions at that time.
 15 GREENE, Q.C.:
 16 Q. And I guess we'll come back to the previous
 17 occasion and the reserves that you had in
 18 place at that time.
 19 MR. HUMPHRIES:
 20 A. Yeah.
 21 GREENE, Q.C.:
 22 Q. But we also heard in evidence earlier this
 23 week that the same deficiency was identified
 24 in your 2010 report and no action was taken at
 25 that time. Can you indicate why it wasn't

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1 taken in 2010, if that's what your analysis
 2 showed, when you knew it would take three
 3 years at that time as your thinking for a new
 4 CT?
 5 MR. HUMPHRIES:
 6 A. Maybe, Mr. Moulton, you can -
 7 MR. MOULTON:
 8 A. Well, I think part of -- you know, I think it
 9 was originally identified in 2008 actually,
 10 but a lot of what was driving -- besides other
 11 things, but I'll say the load that was on top
 12 of everything else that was driving the next
 13 addition was the Vale plant coming on and the
 14 first year I think we identified, I think, was
 15 2012. So, you know, the forecast with Vale
 16 did keep moving out. And of course, we -- you
 17 know, we were trying to do our scheduling and
 18 match things such that, you know, we would
 19 build the CT in time to meet that load, that
 20 criteria, but we also didn't want a situation
 21 where we built a CT, two, three, four, five
 22 years earlier than it was actually required,
 23 that would -- you know, that would increase
 24 costs considerable of what -- you know, if we
 25 built something four or five years before we

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1 needed it or two or three years for that
 2 matter. So that was, you know, that was --
 3 you know, we were trying to -- we weren't
 4 going to -- we knew the Vale forecast, it had
 5 moved at times over the years, so we were
 6 trying to most efficiently build the CT to
 7 meet that load as we could.
 8 GREENE, Q.C.:
 9 Q. I don't know that it's necessary to go there,
 10 but on page 26 of your report, in Hydro's
 11 report, that it would take at least three
 12 years to place a new combustion turbine in
 13 place?
 14 MR. MOULTON:
 15 A. That's correct.
 16 GREENE, Q.C.:
 17 Q. That is correct. So you knew that it would
 18 take at least three years, regardless of what
 19 happened to the load in the meantime. Can you
 20 tell us what steps after this November report
 21 -- and on October 20th in discussions with Mr.
 22 O'Brien, he asked "what steps were taken" and
 23 the response, if we go to the transcript of
 24 October 20th, page 95.
 25 MR. HUMPHRIES:

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1 A. I'll probably take that.
 2 MR. MOULTON:
 3 A. I was waiting -- sorry, just waiting for the
 4 transcript to come up.
 5 GREENE, Q.C.:
 6 Q. Yeah.
 7 MR. HUMPHRIES:
 8 A. Oh, okay.
 9 GREENE, Q.C.:
 10 Q. So it's line three, page 95.
 11 MR. MOULTON:
 12 A. Page, sorry?
 13 GREENE, Q.C.:
 14 Q. It's at the top of the screen. There we go.
 15 And if you look at the previous question, it
 16 was similar to the question I just said. In
 17 November 2012, showing that you needed
 18 something by 2014 and knowing that it would
 19 take three years to get the CT, and he asked
 20 "what steps were taken to look into the 50
 21 megawatt CT at that time?"
 22 MR. MOULTON:
 23 A. If I remember correctly, we did start looking
 24 at going out and looking at a more firm cost
 25 for the CT. We did start and we did a siting

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1 exercise looking at where we would actually
 2 build that next CT. That was taking place
 3 during -
 4 GREENE, Q.C.:
 5 Q. Could we back up a little bit? I wanted to
 6 talk first, this report was done by system
 7 planning in November 2012. What did you do
 8 with the report? Was it brought to the Hydro
 9 leadership team, the Nalcor leadership team?
 10 What was the next step after system planning
 11 prepared this report?
 12 MR. HUMPHRIES:
 13 A. Well, the -- I'll answer that. The report was
 14 brought to the various -- it came to the Hydro
 15 leadership team and I can't speak for the
 16 Nalcor leadership team, I wasn't on it at that
 17 time. I'm not sure. But I assume they would
 18 have seen it, and it was filed with the Board
 19 at that time.
 20 GREENE, Q.C.:
 21 Q. So when it was brought to the Hydro leadership
 22 team, did you present that report for
 23 executive management consideration?
 24 MR. HUMPHRIES:
 25 A. No, I didn't. I suspect Mr. Haynes done it.

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1 GREENE, Q.C.:

2 Q. Okay. Do you know what was the result of that

3 decision by the Hydro leadership team at that

4 time?

5 MR. HUMPHRIES:

6 A. Well, the decision was that we would move

7 forward, start to move the preparation forward

8 to prepare for the -- to acquire the 50

9 megawatt gas turbine, prepare an application

10 for filing an approval with the Public

11 Utilities Board, which we started through

12 early 2013.

13 GREENE, Q.C.:

14 Q. The three years we just talked about, that's

15 three years after project sanction, isn't it?

16 MR. HUMPHRIES:

17 A. Yes.

18 GREENE, Q.C.:

19 Q. So these early steps that you talked about,

20 Mr. Moulton mentioned that you started to get

21 some pricing. Was that correct?

22 MR. MOULTON:

23 A. We started to get pricing. We started looking

24 at siting and we started preparing an

25 application to send to the Board, and within

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1 that application, you know, other necessary --

2 again, within the siting, where you would put

3 it, auxiliaries, the general things you'd look

4 at in going out to build a generation project.

5 GREENE, Q.C.:

6 Q. So preliminary information to help assist in a

7 final decision? Is that correct? So what was

8 the decision of the Hydro leadership team at

9 that time? It was not to go ahead and do the

10 project, was it, or was it?

11 MR. HUMPHRIES:

12 A. Oh, the intent was to go ahead and do the

13 project, yes, and we -- but, it would have to

14 go through the regulatory process and that's -

15 - so starting in 2013, that process was

16 started. We went -

17 GREENE, Q.C.:

18 Q. When you say started, you mean internally?

19 MR. HUMPHRIES:

20 A. Internally, yes, and went through the whole

21 siting. There was a siting study done. We

22 entered into discussions with suppliers,

23 looking at sizes and capabilities, these types

24 of things.

25 GREENE, Q.C.:

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1 Q. Was there a request for proposals issued at

2 that time?

3 MR. HUMPHRIES:

4 A. I'm not sure. I'd have to -- I know our

5 project execution technical services group

6 were soliciting all that information. I'm not

7 -- can't say for sure if there were written

8 proposals. There were quotes. And I should

9 also add that in January 2013, with the outage

10 in January 2013 and the damage to Holyrood

11 unit number one, there was a fair bit of

12 additional activity carried out in that period

13 to look at things like the grey market and

14 opportunities that may be available out there

15 to get generation in place should there have

16 been a concern, a longer term concern with the

17 Holyrood unit and the repairs on that. So

18 there was -- through early 2013, there was a

19 whole lot of information gathered on

20 opportunities that were available in the

21 market, both new and I think that's -- at that

22 stage, that's when we really turned serious

23 attention to some of these opportunities that

24 were out there in the grey market and possible

25 applications for those as well.

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1 GREENE, Q.C.:

2 Q. So this was going on in 2013 and again, there

3 wouldn't have been a decision made when you

4 were still getting information about other

5 possible units?

6 MR. HUMPHRIES:

7 A. We were getting and preparing the application

8 through the -- through 2013, we were preparing

9 the application to the Public Utilities Board.

10 In the fall of 2013, that application was, to

11 all intents and purposes, complete and ready

12 to go. It didn't get filed before year end.

13 Then we got into the January 2014 perspective

14 and that caused us to revisit our whole

15 planning philosophy and criteria, I guess, and

16 ultimately we ended up in April of that year

17 applying for the larger unit that we now have.

18 GREENE, Q.C.:

19 Q. So you mentioned, Mr. Humphries, that by the

20 fall of 2013, the application was ready to

21 file with the Board?

22 MR. HUMPHRIES:

23 A. It was -

24 GREENE, Q.C.:

25 Q. That's what I understood.

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1 MR. HUMPHRIES:
 2 A. It was in preparation. We were -- had been
 3 reviewing drafts, reviewing -- you know, we
 4 had been through and landed on the site, the
 5 outcomes of the siting study and that Holyrood
 6 was the preferred location and so the final
 7 cost estimates, the write-up and
 8 justifications, they were in play in late
 9 2013.
 10 GREENE, Q.C.:
 11 Q. And at that time, were you still looking at a
 12 50 megawatt CT?
 13 MR. HUMPHRIES:
 14 A. We were looking at a 60 megawatt CT at that
 15 stage.
 16 GREENE, Q.C.:
 17 Q. By that time?
 18 MR. HUMPHRIES:
 19 A. Yeah.
 20 GREENE, Q.C.:
 21 Q. So that had changed from 50 in your -
 22 MR. HUMPHRIES:
 23 A. From 2012 to -- yes.
 24 GREENE, Q.C.:
 25 Q. All right.

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1 MR. MOULTON:
 2 A. There was an actual entry in, I think, the
 3 2014 capital budget submission in 2013.
 4 GREENE, Q.C.:
 5 Q. Okay. So in the fall of 2013, Mr. Moulton, on
 6 October 20, had indicated there had been an
 7 internal review of the November 2012 report.
 8 If you want, we can go to the transcript, but
 9 I understood that you had had another look at
 10 the load forecast and what your criteria was.
 11 You look puzzled. All right, let's go there.
 12 MR. MOULTON:
 13 A. No, I think I know what you're talking about.
 14 GREENE, Q.C.:
 15 Q. If you want, we can go to -- I wanted -- and
 16 you had said it showed similar results.
 17 MR. MOULTON:
 18 A. Yes.
 19 GREENE, Q.C.:
 20 Q. And the similar results -
 21 MR. MOULTON:
 22 A. What I was saying at that time, we hadn't
 23 issued a generation issues report.
 24 GREENE, Q.C.:
 25 Q. Right.

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1 MR. MOULTON:
 2 A. But we had prepared another -- there was
 3 another forecast prepared and it was, I think,
 4 within five or ten megawatts of the previous
 5 forecast.
 6 GREENE, Q.C.:
 7 Q. So it still showed that we were in the fall of
 8 2013, showing a deficit for 2014. Is that
 9 correct? Is that what your informal results
 10 showed?
 11 MR. MOULTON:
 12 A. I would think it would. Yeah, it would have
 13 been basically the same as what we looked at
 14 in the 2012 generation issues report.
 15 GREENE, Q.C.:
 16 Q. And here we are a year later and the picture
 17 hasn't changed for you. You still needed it
 18 in 2014?
 19 MR. MOULTON:
 20 A. No. Well, again our decision was we had a
 21 deficit in 2014 and we had decided to complete
 22 -- have the CT completed at the end of 2015.
 23 GREENE, Q.C.:
 24 Q. What steps did system planning take when they
 25 did that analysis in the fall of 2013?

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1 MR. MOULTON:
 2 A. Sorry? What do you mean, what steps?
 3 GREENE, Q.C.:
 4 Q. Yes, did you bring that result to the Hydro
 5 leadership team or the Nalcor leadership team
 6 or did you leave it on your desk in system
 7 planning? What did you do with the update and
 8 looked at it?
 9 MR. HUMPHRIES:
 10 A. From that perspective -
 11 MR. MOULTON:
 12 A. I would think it was brought to their
 13 attention.
 14 MR. HUMPHRIES:
 15 A. Yes, it was. It went -- I'm not sure. I
 16 can't say whether Mr. Haynes was aware of it,
 17 it was brought to Mr. Haynes' attention,
 18 whether it was discussed and at what level at
 19 the Hydro leadership team. I can't say. I
 20 wasn't part of the leadership team at that
 21 time, so I don't know.
 22 GREENE, Q.C.:
 23 Q. So you did do it and you believe it was
 24 brought to the attention of the team, that it
 25 was leadership team or executive management,

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1 that they were still looking at the same
 2 picture as the previous year?
 3 MR. HUMPHRIES:
 4 A. Yeah, you know, we were still working at a
 5 situation that we -- the deficit that we were
 6 predicting was the same as we had a year ago.
 7 We were moving towards a solution and we
 8 carried on.
 9 GREENE, Q.C.:
 10 Q. Then you mentioned that the outages of January
 11 2014 occurred and you went back and you looked
 12 at your methodology. Did I understand your
 13 answer?
 14 MR. HUMPHRIES:
 15 A. That's correct, yes.
 16 GREENE, Q.C.:
 17 Q. And Hydro did do its own internal review of
 18 its planning criteria, didn't it?
 19 MR. HUMPHRIES:
 20 A. Yes, it did.
 21 (10:30 a.m.)
 22 GREENE, Q.C.:
 23 Q. And I understand that Ventyx was also retained
 24 to do an external review. Is that correct?
 25 MR. HUMPHRIES:

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1 A. That's correct.
 2 GREENE, Q.C.:
 3 Q. Can you summarize for us what the results of
 4 that initial review were, Mr. Humphries? I
 5 assume you were involved in that, were you?
 6 MR. HUMPHRIES:
 7 A. Yes, I was. You mean the -- our own -
 8 GREENE, Q.C.:
 9 Q. Your own internal review.
 10 MR. HUMPHRIES:
 11 A. Our own internal review. When we went through
 12 that, I guess, there was a -- when we looked at
 13 the level of generation that was unavailable
 14 in the periods in question -- and when we look
 15 at the January 2014 outage, there's two facets
 16 to that. There's the period between January
 17 2nd and January 3rd in which we had the actual
 18 generation shortfall and then there's the
 19 period from the 4th to the 8th where we had
 20 the more extensive outages and as a result of
 21 the fire in Sunnyside and the evolving issues
 22 there.
 23 From the generation adequacy perspective,
 24 we looked at the period at January -- for the
 25 2nd and the 3rd and there were two factors

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1 there, I guess. Looking at the load forecast,
 2 the load forecast was -- I would think I would
 3 characterize it as higher than we were
 4 anticipating for that period, not extreme, but
 5 higher. And then when we looked at the level
 6 of generation availability, the number of
 7 outages, units that were actually out of
 8 service and the magnitude of the generation at
 9 that time, that was definitely in excess of
 10 what we had been assuming. So, then we
 11 started to look back and we did engage Ventyx
 12 then, I guess, so we were looking at it from
 13 two facets. One was the load forecast and the
 14 second was this whole generation availability
 15 piece and what that really meant and what the
 16 implications were.
 17 GREENE, Q.C.:
 18 Q. And the recommendations of your review was set
 19 out in a report to the Board dated March 24th,
 20 2014. There was a volume two and there was a
 21 Schedule 4 dealt with the review of your
 22 generation planning criteria. Do you recall
 23 that, Mr. Humphries?
 24 MR. HUMPHRIES:
 25 A. Yeah, I recall it. Yes, I wouldn't be able to

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1 quote it by heart here now though.
 2 GREENE, Q.C.:
 3 Q. And I don't think we need to now, but would
 4 you agree with me that your report and Ventyx
 5 report concluded that your reserve criteria of
 6 2.8 was prudent and consistently applied with
 7 industry practice?
 8 MR. HUMPHRIES:
 9 A. Yes, that's correct.
 10 GREENE, Q.C.:
 11 Q. And also that it would have to be reviewed
 12 post Muskrat Falls?
 13 MR. HUMPHRIES:
 14 A. Yes.
 15 GREENE, Q.C.:
 16 Q. There was a recommendation to look at the
 17 forced outage rates used, consistent with
 18 actual experience? Is that correct?
 19 MR. HUMPHRIES:
 20 A. That's correct.
 21 GREENE, Q.C.:
 22 Q. There was also a recommendation to look at the
 23 implications of DSM program on long term load
 24 forecast? Do you recall that?
 25 MR. HUMPHRIES:

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1 A. Yes.
 2 GREENE, Q.C.:
 3 Q. And the last one was that there should be
 4 sensitivities done around low forecast? Is
 5 that correct?
 6 MR. HUMPHRIES:
 7 A. That's correct, yes.
 8 GREENE, Q.C.:
 9 Q. So but at that time, there was no
 10 identification of issues with respect to the
 11 use of the weather forecast or the issue with
 12 respect to reserves or the issue with respect
 13 to broader forced outage rates? Is that
 14 correct?
 15 MR. HUMPHRIES:
 16 A. Pardon? Could you repeat that?
 17 GREENE, Q.C.:
 18 Q. I went through the recommendations -
 19 MR. HUMPHRIES:
 20 A. Yes.
 21 GREENE, Q.C.:
 22 Q. - from the Ventyx report and your internal
 23 report which was in Schedule 4, Volume 2 of
 24 your March 24th report to the Board.
 25 MR. HUMPHRIES:

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1 A. Yes.
 2 GREENE, Q.C.:
 3 Q. And the recommendations did not include any
 4 issue at that time with respect to the weather
 5 forecast that was being used?
 6 MR. HUMPHRIES:
 7 A. That's correct.
 8 GREENE, Q.C.:
 9 Q. Okay. And it did point out that your own
 10 review and Ventyx review concluded that your
 11 practices were consistent with industry
 12 practice?
 13 MR. HUMPHRIES:
 14 A. Yes.
 15 GREENE, Q.C.:
 16 Q. And didn't need to be adjusted, other than the
 17 ones I just went through?
 18 MR. HUMPHRIES:
 19 A. Yes. Yes, that's totally correct.
 20 GREENE, Q.C.:
 21 Q. Okay. If we go back to the November 2012
 22 planning report, and while you talked about
 23 the criteria, the 2.8 hours that we've already
 24 talked about, when I looked at that again even
 25 recently, I didn't see any reference to how

Page 83

1 that -- what the system reserves were at that
 2 time. Is that correct?
 3 MR. HUMPHRIES:
 4 A. No, there's no reference.
 5 GREENE, Q.C.:
 6 Q. So I was trying to determine what the system
 7 reserves were at that time and I think they
 8 were in your Schedule 4 to your March 24th
 9 report, and this was one of the documents that
 10 was sent around yesterday. It was Attachment
 11 No. 6 to yesterday. So this -- Ms. Glynn
 12 tells me this is going to be Information No.
 13 19. And if we look at the bottom -- and this
 14 is an extract from that report?
 15 MR. HUMPHRIES:
 16 A. Yes.
 17 GREENE, Q.C.:
 18 Q. Which is Hydro's report with a summary of
 19 Ventyx recommendations or Ventyx review. So
 20 at the bottom of page 14, if you look at the
 21 criterion, the way I read it is "Ventyx
 22 reviewed the results of Hydro's most recent
 23 capital planning study, 2012".
 24 MR. HUMPHRIES:
 25 A. That's right. That would have been the report

Page 84

1 we just talked about.
 2 GREENE, Q.C.:
 3 Q. Right. So if I turn to the next page, I see
 4 here your criterion of the loss of load hours
 5 and what it would have been. We see again,
 6 now we see the violation 2015, but we see what
 7 the reserve margins are over on the right.
 8 MR. HUMPHRIES:
 9 A. Yes.
 10 GREENE, Q.C.:
 11 Q. So at the time -- and we don't have -- so at
 12 the time of the 2012 report, would it be
 13 reasonable or correct to believe that at that
 14 time you thought your reserve margins were
 15 about 16 percent, your system reserves?
 16 MR. HUMPHRIES:
 17 A. There's a inconsistency in how Ventyx has
 18 portrayed our reserve margin here and how we
 19 have consistently portrayed it over the years,
 20 and it -- there's a difficulty in doing it on
 21 a percent basis regardless over a longer
 22 period of time because, of course, comparing
 23 it to a different base, that has some
 24 difference. We really only got into this last
 25 night and when we really looked at this and

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1 tried to determine exactly how Ventyx had come
 2 up with these percentages, but they're not
 3 consistent with the way we would have reported
 4 reserve margins back in 2002, 2006 and
 5 whatever.
 6 GREENE, Q.C.:
 7 Q. And we are -- as you're going to -- because
 8 one of the reasons for doing this is, as you
 9 know, Liberty had identified one of the -- a
 10 principal shortcoming of your planning process
 11 was the total focus on LOLH to the exclusion
 12 of a consideration of available reserves at
 13 that time, which I understand Hydro has
 14 accepted and has taken steps to address that.
 15 MR. HUMPHRIES:
 16 A. Well, we've taken steps to monitor it more
 17 closely obviously and track it, yes.
 18 GREENE, Q.C.:
 19 Q. And I'm trying to -- and I could not find on
 20 the record -- I could for 2001, 2003 and 2007,
 21 how Hydro reported what its reserves were.
 22 This was the only thing I could find for the
 23 relevant period because you didn't have it in
 24 your 2012 planning report. Do you know why
 25 that would have been?

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1 MR. HUMPHRIES:
 2 A. And I don't think it's -- I stand to be
 3 corrected, but I don't think the actual
 4 reserve percentage has been in any of our
 5 planning reports.
 6 MR. MOULTON:
 7 A. No.
 8 GREENE, Q.C.:
 9 Q. But it's always been given in terms of -
 10 MR. HUMPHRIES:
 11 A. It's been given through GRAS and applications
 12 and those types of things, but I -
 13 MR. MOULTON:
 14 A. It wasn't in -- I don't think it was in the
 15 planning reports from the 2006, 2007
 16 timeframe.
 17 GREENE, Q.C.:
 18 Q. As Liberty has pointed out, looking at LOLH
 19 criteria in the isolated -- for an isolated
 20 system without regard to available reserves,
 21 from their view, is very problematic. I
 22 understood Hydro agreed with that. Is that
 23 correct?
 24 MR. HUMPHRIES:
 25 A. Well, it can be problematic, and you know, I

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1 had great concern with all this process when
 2 we got into it because I was really concerned
 3 that -- I was losing faith in the model and I
 4 had a lot of faith in this model over the
 5 years and I've spent a lot of time and I've
 6 gone back and I've rationalized exactly where
 7 we have been and where we've come from and for
 8 the most part, the results and the reserves
 9 are consistent. We can go back to the
 10 documents that you filed yesterday.
 11 GREENE, Q.C.:
 12 Q. And we will go there, so let's -
 13 MR. HUMPHRIES:
 14 A. Yeah, well I -
 15 GREENE, Q.C.:
 16 Q. So you said if -- you have different numbers
 17 from what you were looking at for your
 18 reserves back in 2012 versus what you have in
 19 this report that was submitted to the Board in
 20 March 2014.
 21 MR. HUMPHRIES:
 22 A. If we were to calculate our reserves on the
 23 same basis that we've always reported our
 24 reserves, they would have been higher, yes,
 25 than these numbers.

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1 GREENE, Q.C.:
 2 Q. They would have been higher than -
 3 MR. HUMPHRIES:
 4 A. Higher.
 5 GREENE, Q.C.:
 6 Q. - what you're showing in this document?
 7 MR. HUMPHRIES:
 8 A. Yes.
 9 GREENE, Q.C.:
 10 Q. So can you -- what would they have been?
 11 MR. HUMPHRIES:
 12 A. Well, again, I don't want to get into
 13 percentages. I want to go back and let's do
 14 everything on a number basis. I can walk us
 15 through from 2002 to -
 16 GREENE, Q.C.:
 17 Q. And we will do that, but I just -
 18 MR. HUMPHRIES:
 19 A. - to the current day, so -
 20 GREENE, Q.C.:
 21 Q. So for the reserves -
 22 MR. HUMPHRIES:
 23 A. They would have been about 14 and a half, 15
 24 percent in that range. I'll have to -- in the
 25 15 percent range.

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1 GREENE, Q.C.:

2 Q. Okay.

3 MR. HUMPHRIES:

4 A. In 2014.

5 GREENE, Q.C.:

6 Q. In 2014. So, the 2014 would have been higher

7 from the 12.2. What about 2015?

8 MR. HUMPHRIES:

9 A. Well again, our 2015, I don't have that

10 number, but we would have added the extra

11 generation in that year.

12 GREENE, Q.C.:

13 Q. But without the extra generation, because we -

14 MR. HUMPHRIES:

15 A. Without the extra generation, I really don't

16 have the number here right now, but I do know

17 the reserve in a megawatt basis. I know what

18 it was.

19 GREENE, Q.C.:

20 Q. Okay. So as I understand it, and just to make

21 sure that we're both on the same page, to be

22 consistent with how Hydro reported reserve

23 margins in previous GRAs is what you're

24 saying.

25 MR. HUMPHRIES:

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1 A. Yes.

2 GREENE, Q.C.:

3 Q. That that 60 -- the 12.28 for 2014 would be

4 higher?

5 MR. HUMPHRIES:

6 A. Yeah. So I would expect the 2015 number would

7 have been 14 and a half percent and the 2014

8 was actually 15, in that range.

9 GREENE, Q.C.:

10 Q. And the 2015 would be, you're not sure?

11 MR. HUMPHRIES:

12 A. No, the 2015 would still be in the 14 to 14

13 and a half percent. There's only 20 megawatt

14 difference.

15 GREENE, Q.C.:

16 Q. All right. Well now can you explain to us

17 what changed from how Hydro calculated

18 reserves based on previous evidence here

19 before the Board and what was used in what you

20 reported to the Board in March of 2014?

21 MR. HUMPHRIES:

22 A. Well, what the -- these numbers that were

23 reported in the Ventyx report, as far as we

24 can ascertain, they were somehow extracted out

25 of the strategist firm. So we're really not

Page 91

1 sure, but in the basis of what we would report

2 in the past, we would do a comparison between

3 our installed capacity and our load at that

4 time, and we can identify the megawatt reserve

5 and the percentage would be a percentage of

6 the actual load at that time.

7 GREENE, Q.C.:

8 Q. And now perhaps if we did go through some of

9 the -

10 MR. HUMPHRIES:

11 A. Pardon?

12 GREENE, Q.C.:

13 Q. Now just to go through, let's start with -

14 MR. HUMPHRIES:

15 A. Well, yeah, if we -

16 GREENE, Q.C.:

17 Q. Let's start with 2001 which -

18 MR. HUMPHRIES:

19 A. Well, I'll -

20 GREENE, Q.C.:

21 Q. - which would have been number five, the

22 number five attachment yesterday. So it's RFI

23 PUB-055. And again, this will be Information

24 No. 20.

25 MR. HUMPHRIES:

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1 A. Yeah, this -- okay, so you have particular

2 questions on -

3 GREENE, Q.C.:

4 Q. No, I just thought you wanted to trace through

5 the history.

6 MR. HUMPHRIES:

7 A. Yeah, so -

8 GREENE, Q.C.:

9 Q. And this is a good place to start because it -

10 MR. HUMPHRIES:

11 A. Yeah, but that -

12 GREENE, Q.C.:

13 Q. If you look at the attachment.

14 MR. HUMPHRIES:

15 A. Yes, okay. So this attachment basically is an

16 indication of what happens in other

17 jurisdictions.

18 GREENE, Q.C.:

19 Q. But it also had Hydro there.

20 MR. HUMPHRIES:

21 A. It has Hydro there, yes.

22 GREENE, Q.C.:

23 Q. Right, so -

24 MR. HUMPHRIES:

25 A. And that 18 and a half percent of firm load,

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1 at that time, that 18 and a half percent in
 2 the 2001-2002 timeframe resulted in a megawatt
 3 reserve of approximately 300 megawatts.
 4 GREENE, Q.C.:
 5 Q. Yes.
 6 (10:45 a.m.)
 7 MR. HUMPHRIES:
 8 A. And when we go through our analysis, our
 9 strategist analysis, and analyze what that
 10 really means, strategist is a probabilistic
 11 analysis and it looks at the probabilities of
 12 outages on the various units and combinations
 13 of outages and then does a comparison to our
 14 criteria and it basically identifies when we
 15 cross our theoretical reliability limit, which
 16 is 2.8 hours or back then it was .2 days per
 17 year. And when we look at what -- in that
 18 timeframe, the system was not materially
 19 different than it is today and we looked at
 20 the assumptions that we used in doing the
 21 analysis and load forecasting similar. We
 22 used the P50 type of forecast.
 23 Our hydro electric -- our assumptions on
 24 hydro electric forced outages were similar,
 25 but on the thermal units, back at those times,

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1 for a reason I don't know, we were using a
 2 higher forced outage rate for our thermal
 3 units at Holyrood than we have since 2004 and
 4 beyond. It was higher. And that, by virtue
 5 of the fact when we look at a reliability type
 6 assessment, the highest risk on our system is
 7 the loss of a single unit at Holyrood. That's
 8 -- when we look at that compared to the hydro
 9 electric generations, it's ten percent more
 10 probable that we will have a loss of that unit
 11 and it's a large unit. It's 170 megawatts.
 12 When we look at combinations of units, it
 13 becomes -- the probabilities, the impact is
 14 higher, probabilities of having two events at
 15 the same time, obviously the older.
 16 So when you go through analysis from a
 17 probabilistic assessment that this program
 18 does an assessment of what the risks are and
 19 it's not unreasonable that the reserve would
 20 come out around 300 megawatts, if we have a
 21 large unit with 11 percent forced outage rate
 22 and the next least or largest impact would be
 23 the combustion turbines, forced outage rate in
 24 the 10 to 20 percent range.
 25 So the probability of having a common

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1 load type -- or set two contingencies, the
 2 highest probability is probability is probably
 3 of having a unit at Holyrood plus one of the
 4 combustion turbines. So that's 220 megawatts,
 5 so throw the rest of the stuff in, it's not un
 6 -- 300 would be a reasonable number from a
 7 probabilistic perspective. Look at
 8 deterministically and want to determine, yeah,
 9 well, you could do those two units at
 10 Holyrood. Yeah, but the probability is lower
 11 and what this analysis is basically telling
 12 you, it's not prudent or it's not necessary to
 13 spend money to avoid those types of situations
 14 because you maintain your reliability targets
 15 without those extra reserves to cover off
 16 those types of events. So that's 2001.
 17 GREENE, Q.C.:
 18 Q. Right, and if we look at Attachment No. 4 from
 19 that was circulated yesterday which was the
 20 transcript from that hearing, which would be
 21 Information No. 21, your predecessor was asked
 22 questions about this, and really you look over
 23 to page seven of what has been circulated. So
 24 Mr. Budgell, as I said your predecessor,
 25 director of system planning, talked about in

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1 lines one and two "planning to have a minimum
 2 of 18 and a half percent reserves on the
 3 system" and he talks about, as you just said,
 4 the loss of large units and why they plan to
 5 have a reserve of 18 and a half percent. Do
 6 you recall that that was Hydro's position at
 7 that time?
 8 MR. HUMPHRIES:
 9 A. Yes, and that's -- at that time, based on the
 10 modelling we were doing, the -- ultimately,
 11 the 18 percent was a fall out of the
 12 strategist analysis and as I said, that comes
 13 back to roughly a 300 megawatt reserve margin
 14 at that time that would have been required to
 15 maintain our acceptable reliability. So
 16 that's -- it's -- we were still maintaining to
 17 within our LOLH and the fact of the matter was
 18 that the mix of the generation and the
 19 reliability of the units at that time dictated
 20 that we would have to have a 18 and a half
 21 percent reserve margin to be able to maintain
 22 that.
 23 GREENE, Q.C.:
 24 Q. The way, if you read the page, it appeared
 25 that Hydro, that was part of Hydro's plan was

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1 to have a reserve 18 and a half percent.
 2 Would you agree with that?
 3 MR. HUMPHRIES:
 4 A. I don't recall that. I obviously -- I don't -
 5 - I've worked in the planning area for 30
 6 years. I haven't very -- worked directly in
 7 generation planning for periods of time, but
 8 the plan has always been to maintain the 2. 8
 9 hours and the reserves would be what they were
 10 coming from the calculation.
 11 GREENE, Q.C.:
 12 Q. But when we go through what we just did to the
 13 2001 hearing, now we're doing -- we do the
 14 2003 hearing.
 15 MR. HUMPHRIES:
 16 A. Okay.
 17 GREENE, Q.C.:
 18 Q. Where similar evidence was given to the Board
 19 about Hydro's plans at that time.
 20 MR. HUMPHRIES:
 21 A. Yeah, let's go.
 22 GREENE, Q.C.:
 23 Q. The next one then would be -- I'd like to look
 24 at was Attachment No. 2 which is RFI IC-293,
 25 Information Item No. 22. And here again,

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1 because of the system changes, we do see the
 2 same criteria of 2.8 and again the 16 percent
 3 was 300 megawatts of reserve capacity. Is
 4 that what we see from -
 5 MR. HUMPHRIES:
 6 A. That's what we see there, yes. And again, the
 7 actual percentage is more a fallout of the
 8 base of which we've been evaluating the
 9 percentage reserve against has increased
 10 because we increased load. So it's still 300
 11 megawatts, the same.
 12 GREENE, Q.C.:
 13 Q. And if we look at the transcript, which was
 14 circulated as Attachment No. 3, which would be
 15 Information No. 23, this time it's Mr. Haynes
 16 who's giving evidence about the planning
 17 criteria. Here I wanted to bring your
 18 attention to page 50, lines 8 down to 12. So
 19 the LOLH equates to about 16 percent reserve
 20 and in fact at that time, your reserve was
 21 actually, according to line 12, a little under
 22 20 percent. So you would agree with that, Mr.
 23 Humphries?
 24 MR. HUMPHRIES:
 25 A. I assume, yes.

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1 GREENE, Q.C.:
 2 Q. And the last one with respect to Hydro's
 3 previous evidence before the Board on your
 4 criteria was Attachment No. 1, which would be
 5 Information 24.
 6 MR. HUMPHRIES:
 7 A. Yes. So that's the information from the --
 8 our 2006 GRA.
 9 GREENE, Q.C.:
 10 Q. Okay. And when you look at the attachment, we
 11 can see that the reserves were forecast 2008
 12 was at 14, which would have been the lowest
 13 percent for reserves.
 14 MR. HUMPHRIES:
 15 A. It is, and again, between the 2002 -- 2001,
 16 2003, 2006 timeframe, I think it was some time
 17 post 2003 or in 2004, there were changes made
 18 to the forced outage rates assumptions for
 19 Holyrood. They were brought back to a level
 20 of what we had been using up 'til now or 'til
 21 January 2014. So that would reflect some of
 22 the reduction. Again, changes in load
 23 actually have some ultimate impact on what the
 24 actual percentage is because we're measuring
 25 against a different number each time. But

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1 we've gone through and when you look at the
 2 level of megawatt reserve for each of these
 3 cases, for these years through 2007 to 2015,
 4 these result in reserves in the range of
 5 between 240 and 260 megawatts for these
 6 periods, in a megawatt level, and if we go to
 7 the 2012 analysis that we just spoke about
 8 where Ventyx has these lower numbers that I
 9 reflect that should be, you know, 14 and a
 10 half, 15 percent, the levels of reserves that
 11 we were reflecting there at 2014, at the
 12 period when we were crossing the 2.8 LOLH
 13 level were actually 260 megawatts.
 14 GREENE, Q.C.:
 15 Q. And that was based on your use of the P50?
 16 MR. HUMPHRIES:
 17 A. P50 and -
 18 GREENE, Q.C.:
 19 Q. And your forced outage rates?
 20 MR. HUMPHRIES:
 21 A. Exactly. So that's where the rubber hits the
 22 road, from the perspective of what happened in
 23 2014.
 24 GREENE, Q.C.:
 25 Q. You are aware that the Board had retained a

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1 consultant prior to Hydro's 2001 GRA to review
 2 Hydro's planning criteria?
 3 MR. HUMPHRIES:
 4 A. Yes.
 5 GREENE, Q.C.:
 6 Q. It was done twice, Mr. Baker and by Quetta?
 7 MR. HUMPHRIES:
 8 A. That's correct.
 9 GREENE, Q.C.:
 10 Q. Okay. And at that time, they indicated the
 11 criteria was reasonable and at that time
 12 reserves were in excess of 18 percent. Is
 13 that your recollection?
 14 MR. HUMPHRIES:
 15 A. Yes.
 16 GREENE, Q.C.:
 17 Q. Okay. I'm actually going to another line of
 18 questioning right now, so it might be -
 19 CHAIRMAN:
 20 Q. Okay, take a break.
 21 (BREAK - 10:58 a.m.)
 22 (RESUME - 11:33 a.m.)
 23 CHAIRMAN:
 24 Q. Okay. We are back to continue.
 25 GREENE, Q.C.:

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1 Q. Just one question or perhaps two, arising from
 2 something Mr. Humphries said before the break,
 3 and it's to do with the generation planning
 4 issues, November 2012 report, and as well,
 5 your 2010 report. Up to now, those reports
 6 have not been filed regularly with the Board.
 7 Is that correct?
 8 MR. HUMPHRIES:
 9 A. Yeah, I can't remember at what stage we
 10 started filing those with the Public Utilities
 11 Board, but -
 12 GREENE, Q.C.:
 13 Q. Subject to check, the 2010 planning report was
 14 not filed until requested by the Board in the
 15 Muskrat Falls Review in 2012. Is that
 16 correct?
 17 MR. HUMPHRIES:
 18 A. Subject to check.
 19 GREENE, Q.C.:
 20 Q. Similarly, the Hydro's 2012 planning report
 21 was not filed until requested by the Board
 22 with respect to the 2013 Capital Budget
 23 Application of Hydro, again subject to check,
 24 and does that sound right to you?
 25 MR. HUMPHRIES:

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1 A. Subject to check.
 2 GREENE, Q.C.:
 3 Q. So whatever may happen for the future, up 'til
 4 now, they have not been -- not filed by Hydro
 5 on a regular basis as they are completed. So
 6 we're up to January 2014 when we had the
 7 outages. We've talked a bit about Hydro's own
 8 internal review and Ventyx review of your
 9 planning criteria. And at that time, Hydro
 10 still had not taken formal action to secure a
 11 new source of generation, the CT. That's
 12 correct, isn't it? That application was not
 13 filed until April 2014?
 14 MR. HUMPHRIES:
 15 A. That's correct.
 16 GREENE, Q.C.:
 17 Q. Hydro, after Hydro's internal report, Liberty
 18 filed an interim report with the Board and
 19 made a number of recommendations with respect
 20 to Hydro's planning process. Do you recall
 21 that, Mr. Humphries?
 22 MR. HUMPHRIES:
 23 A. Yes, I do.
 24 GREENE, Q.C.:
 25 Q. With respect to the recommendations in

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1 Liberty's interim report, can you please
 2 summarize what those were, from a planning
 3 perspective only?
 4 MR. HUMPHRIES:
 5 A. Summarize their recommendations?
 6 GREENE, Q.C.:
 7 Q. Yes. I can -- they did make -- Liberty did
 8 make recommendations with respect to the
 9 short-term forecasting tool used by Hydro,
 10 Nostradamus? Is that correct?
 11 MR. HUMPHRIES:
 12 A. Yes, that's correct, yes.
 13 GREENE, Q.C.:
 14 Q. Hydro accepted those recommendations? Is that
 15 correct?
 16 MR. HUMPHRIES:
 17 A. Yes, we did.
 18 GREENE, Q.C.:
 19 Q. Okay. And a number of changes have been
 20 implemented in the short term model which is
 21 used for the short -- for operation of the
 22 system on a short term basis? Is that
 23 correct?
 24 MR. HUMPHRIES:
 25 A. That's correct, yes.

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1 GREENE, Q.C.:

2 Q. Liberty also made recommendations with respect

3 to looking at the unusual system losses that

4 occurred as a result of the low generation on

5 the Avalon and the high load?

6 MR. HUMPHRIES:

7 A. Yes, we accepted that and we've done an

8 analysis and implemented a change in our

9 forecasting process.

10 GREENE, Q.C.:

11 Q. Right. And up until that point in time, Hydro

12 had not focused on as much as 40 megawatts of

13 loss arising from that situation? Is that

14 correct?

15 MR. HUMPHRIES:

16 A. That's correct.

17 GREENE, Q.C.:

18 Q. And now you've issued instructions to your

19 operators to take that into account? Is that

20 correct?

21 MR. HUMPHRIES:

22 A. That's correct.

23 GREENE, Q.C.:

24 Q. Another recommendation from Liberty in their

25 interim report was to look at the use of a

Page 106

1 more conservative forecast than P50 weather

2 forecast. Is that correct?

3 MR. HUMPHRIES:

4 A. That's correct.

5 GREENE, Q.C.:

6 Q. Another recommend -- again, that was accepted

7 by Hydro? Is that correct?

8 MR. HUMPHRIES:

9 A. That's correct.

10 GREENE, Q.C.:

11 Q. Another recommendation from the interim report

12 was that Hydro abandon the use of the LOLH

13 criteria of 2.8 hours and associated low

14 reserves, and that one you did not -- you have

15 caveats around? Is that correct?

16 MR. HUMPHRIES:

17 A. That's correct. We're still -- with the

18 changes we have made, we're still completing

19 the strategist LOLH type analysis. Again,

20 it's a check and it will help to validate our

21 assumptions on the reserves that the 240

22 megawatts we've established after we do a

23 strategist run and input any changes that may

24 have taken place in unit availability. That

25 will give us a reflection of whether the 240

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1 is adequate any more. So that's -- it's there

2 as a check.

3 GREENE, Q.C.:

4 Q. Okay. So with the caveat or conditions around

5 the recommendation on the LOLH criteria of

6 2.8, Hydro did accept all of Liberty's

7 recommendations?

8 MR. HUMPHRIES:

9 A. That's correct.

10 GREENE, Q.C.:

11 Q. I'd like now to look at Liberty's final report

12 in December of 2014, which was actually

13 circulated, for the record, for this

14 proceeding by Newfoundland Power on Friday,

15 October 16th. And Ms. Glynn informs me that

16 that will be Information Item No. 25.

17 So even at the time of Hydro's report in

18 March to the Board -- of 2014, knowing that

19 you were looking at capacity deficits that had

20 not gone away, Hydro still had not taken

21 action to install new capacity. Is that

22 correct? Not formal action. You may have

23 been doing your internal pricing.

24 MR. HUMPHRIES:

25 A. The application hadn't been filed. That's

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1 correct.

2 GREENE, Q.C.:

3 Q. And of course, I don't want to take you

4 through all of the references, but just a

5 couple to put this in context. So if we look

6 first at page 11, under the heading "Supply

7 Adequacy" and we talked -- so this is

8 Liberty's final report which is a follow up to

9 their interim report. And here Liberty found

10 "many factors contributed to the supply

11 shortage, including the unavailable

12 generation" which we'll talk -- may talk a

13 little bit about, but "the low load forecast,

14 the P50 and an LOLH which was higher than

15 typically used by utilities" and the next

16 bullet, "relatively low capacity reserves

17 which were permitted because of the higher

18 LOLH and the forced outage rates have

19 supported the conclusion and the decision to

20 delay future new generation into 2012 when

21 forecasted reserves seemed inadequate". So

22 here we have a summary of the -- at least the

23 bottom four would have related to Hydro's

24 planning processes.

25 If we go to the next page, page 12, under

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1 unit availability, we see "the supply planning
 2 criteria and process were primary factors in
 3 the 2014 supply emergency."
 4 Now if we go to page 19, and
 5 unfortunately, the lines aren't numbered here,
 6 but we see the reference towards the bottom of
 7 the page -- actually under "Defining Adequate
 8 Reserves", the paragraph that begins with "the
 9 choice of". So the choice -- here we see
 10 Liberty's view that your choice of the LOLH
 11 and its application has major ramifications
 12 and they go that "Liberty will reserve
 13 capacity in terms of percentage of forecast is
 14 a more practical measure of power supply
 15 adequacy for Hydro" and then that your use of
 16 that, coupled with your modelling assumptions,
 17 suggested that reserves in the 10 to 12
 18 percent range were acceptable. "While the
 19 definition of adequate is subject to debate,
 20 Liberty believes that meaningful discussion
 21 should centre around margins higher than 10 to
 22 12."
 23 That's just a sampling of some of the
 24 comments in this report, as well as in the
 25 July 6th prudence review. But would you

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1 agree, Mr. Humphries, that Liberty did
 2 conclude that Hydro's planning processes were
 3 a major factor in the outages of 2014, at
 4 least for the initial period before we had the
 5 equipment failures?
 6 MR. HUMPHRIES:
 7 A. Yes.
 8 GREENE, Q.C.:
 9 Q. And at that time, Liberty also suggested
 10 concerns that the supply situation was just
 11 too tight for Newfoundland, leading to their
 12 concern that there was an unacceptably high
 13 risk of outages for the Island Interconnected
 14 system until the interconnection of Muskrat
 15 Falls? Is that your understanding?
 16 MR. HUMPHRIES:
 17 A. That's correct, yes.
 18 GREENE, Q.C.:
 19 Q. So again, we see, if we go to the
 20 recommendations, a number of recommendations
 21 with respect to how the planning process could
 22 be enhanced and improved. In this report -
 23 MS. GRAY:
 24 Q. Sorry, Ms. Greene, do you have a page
 25 reference for that?

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1 GREENE, Q.C.:
 2 Q. I was just going to -- the Appendix has all of
 3 the recommendations. It's probably the
 4 easiest way to see the recommendations. So
 5 that's actually in Appendix A, Ms. Gray, to
 6 that report, and it's page A-1. All right.
 7 So if we look at Chapter 2, planning and
 8 supply, we see that all of those, down to 213,
 9 relate to your area, Mr. Humphries.
 10 MR. HUMPHRIES:
 11 A. Yes.
 12 GREENE, Q.C.:
 13 Q. And again, Hydro is on record as having
 14 accepted these recommendations. Is that
 15 correct?
 16 MR. HUMPHRIES:
 17 A. That's correct.
 18 (11:45 a.m.)
 19 GREENE, Q.C.:
 20 Q. With respect to the adequacy of reserves until
 21 the interconnection, what is Hydro's position
 22 now with respect to that?
 23 MR. HUMPHRIES:
 24 A. As I guess one of the recommendations coming
 25 out of this report is that we would propose a

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1 methodology for monitoring and acting upon
 2 generation issues between now and the
 3 interconnection and so, we have made a
 4 proposal in our reply and it forms the basis
 5 of the document we filed in September of this
 6 year. It's the first year update. That we
 7 would continue to monitor on a regular basis
 8 developments on the system, on an annual basis
 9 provide an update on load forecast
 10 expectations based on the P90 expectation. We
 11 would provide an update on generation
 12 performance in the previous 12-month period
 13 and how that correlated with the assumptions
 14 that we use. We continue to do a sensitivity
 15 on the forced outage rates or the -- in
 16 increasing the forced outage rate at the
 17 Holyrood units by two percent and a doubling
 18 of the forced outage rate of the combustion
 19 turbines from 10 to 20 percent, and we will
 20 continue to try and track the system within
 21 those targets and should there be a point
 22 where the -- considering the extreme or the
 23 contingency generation unavailability and the
 24 P90 forecast, if system reserves should drop
 25 below or forecast to drop below 240 megawatts

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1 in that period, we would highlight that
 2 immediately in the report and start down the
 3 road of discussing mitigative actions to
 4 increase that reserve prior to the
 5 interconnection.
 6 GREENE, Q.C.:
 7 Q. And this, I will describe it as an interim
 8 step, given that you expect the
 9 interconnection with Muskrat Falls and with
 10 the high focus on not only load but also on
 11 generation availability, you will continue
 12 until you are looking new criteria post
 13 Muskrat Falls? Is that correct?
 14 MR. HUMPHRIES:
 15 A. Yes, that's correct.
 16 GREENE, Q.C.:
 17 Q. If we could go now to Information Item No. 9,
 18 please? So if we look at page four of the
 19 attachment. This report was prepared in
 20 response to one of Liberty's recommendations
 21 and the Board's direction?
 22 MR. HUMPHRIES:
 23 A. Yes.
 24 GREENE, Q.C.:
 25 Q. And I wanted to look at Table 3 here. So

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1 Table 3 reflects your acceptance and
 2 implementation of the recommendations. For
 3 example, if we go down and look at it, we see
 4 we have your peak -- when you do the load, the
 5 island interconnected system P50 peak, because
 6 Hydro is still using that for your planning
 7 basis. You're doing the sensitivity around
 8 P90. You did not accept Liberty's
 9 recommendation to use P90 as your base?
 10 MR. HUMPHRIES:
 11 A. No. From a generation adequacy perspective,
 12 we still generate our P50 forecast and that's
 13 used through the organization for other non-
 14 generation planning purposes, but from a
 15 generation planning purpose, we do do the P90
 16 sensitivity and all the ensuing LOLH levels
 17 and triggers and reserves are triggered off
 18 that P90 number.
 19 GREENE, Q.C.:
 20 Q. Right. And for that reason, Liberty found it
 21 acceptable for this purpose?
 22 MR. HUMPHRIES:
 23 A. Yes, that's correct.
 24 GREENE, Q.C.:
 25 Q. And it also includes, when we look at it, your

Page 115

1 new capacity assistance agreements, which you
 2 did not have prior to January 2014, but which
 3 you entered into given the outages of 2014?
 4 Is that correct?
 5 MR. HUMPHRIES:
 6 A. That's correct.
 7 GREENE, Q.C.:
 8 Q. Okay. And it shows, again if you go up to the
 9 table, this includes all of your capacity,
 10 including the new CT, including the capacity
 11 assistance agreements, and no black start?
 12 MR. HUMPHRIES:
 13 A. This particular table here, yes, no black
 14 start.
 15 GREENE, Q.C.:
 16 Q. And I will characterize this as what Hydro's
 17 position had been at the time of your previous
 18 reports to the Board. The black start issue
 19 is a new issue.
 20 MR. HUMPHRIES:
 21 A. Yes, I agree. The intent that -- previously
 22 that the black start would be removed once the
 23 CT had been proven.
 24 GREENE, Q.C.:
 25 Q. Okay. So in your capacity at peak, that would

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1 include the new gas turbine?
 2 MR. HUMPHRIES:
 3 A. Yes.
 4 GREENE, Q.C.:
 5 Q. It includes Hardwoods in Stephenville?
 6 MR. HUMPHRIES:
 7 A. Yes, it does.
 8 GREENE, Q.C.:
 9 Q. At fully rated capacity?
 10 MR. HUMPHRIES:
 11 A. At their fully rated capacity. The LOLHs and
 12 reserves actually reflect their -- you know,
 13 the sensitivity numbers for availabilities.
 14 GREENE, Q.C.:
 15 Q. And I was going to come to that, but for now,
 16 they are in there with the forced outage rates
 17 you used in your assumptions for doing that
 18 and then the sensitivity for higher forced
 19 outage rates?
 20 MR. HUMPHRIES:
 21 A. Yes. Well, actually, the actual capacity
 22 numbers, the assumptions, they don't change
 23 because of the assumptions on reliability.
 24 GREENE, Q.C.:
 25 Q. True, okay. But in terms of for the LOLH?

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1 MR. HUMPHRIES:
 2 A. Yes, yeah.
 3 GREENE, Q.C.:
 4 Q. Okay. Liberty's position in the report is
 5 that Hydro's supply situation continues to be
 6 extremely tight and that reserves are very
 7 low. Does Hydro concur with that position?
 8 MR. HUMPHRIES:
 9 A. From the perspective of low, I guess from a
 10 relative perspective, they are consistent on a
 11 megawatt basis to where they have been at
 12 similar points in our history when we would
 13 have been at or near our 2.8 reliability
 14 criteria. So, as of the point I was trying to
 15 make this morning, at all these points along
 16 the way, as we were got to a situation where
 17 we were approaching our criteria margins, our
 18 reserves, from a megawatt perspective, were
 19 within the ranges of what we see in here and
 20 what we're seeing here, the 240 to 260
 21 megawatt range, but as I indicated this
 22 morning, those were based on the lower
 23 expectations of a P50 and a -- and the
 24 capacities, the availabilities, really have
 25 nothing to do with that, but we factored that

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1 into the overall analysis now, so we are
 2 testing the system against the higher forecast
 3 and the higher unavailability. So when you
 4 look at that 246 megawatt reserve that we're
 5 showing here in 2018-2019, the way we've done
 6 it before, that would be 60 megawatts higher.
 7 That would be a 306 megawatt reserve, compared
 8 to what we've been carrying historically. I
 9 will say between -- since 2004 to 2014. So it
 10 is. There is an increase in the level of
 11 reserve that we are carrying because of this
 12 process and the fact that we are looking at
 13 the P90 forecast, the probability of an
 14 exceedance is much lower now than it would
 15 have been before.
 16 GREENE, Q.C.:
 17 Q. And I actually was just going to make sure
 18 that I understood what you were saying,
 19 because you had said that your reserves were
 20 at similar levels in previous years and you
 21 didn't think you were going to have a problem
 22 going into 2014.
 23 MR. HUMPHRIES:
 24 A. That's right.
 25 GREENE, Q.C.:

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1 Q. And that was based though on different
 2 assumptions including a less conservative
 3 forecast and lower forced outage rates?
 4 MR. HUMPHRIES:
 5 A. Exactly.
 6 GREENE, Q.C.:
 7 Q. So this table, from a level of comfort for the
 8 Commissioners, that there is sufficient
 9 capacity available going forward. You have
 10 used the P90 which is in your base case for
 11 this? Is that correct?
 12 MR. HUMPHRIES:
 13 A. That's correct.
 14 GREENE, Q.C.:
 15 Q. Okay. So let's talk now about what you've
 16 done on the forced outage rates, which is also
 17 in this exhibit, if you want to go to it.
 18 MR. HUMPHRIES:
 19 A. Okay, so that's -- from our perspective,
 20 that's the reason to get an effective
 21 indication of what the forced outage rates
 22 mean. That's why we want to continue to do
 23 the probabilistic analysis, so that with these
 24 -- the last two columns on these tables, we
 25 have comparable LOLHS based on the planned

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1 forced outage rates which is what we used
 2 historically and the sensitivities. So with
 3 the sensitivity, with the planned -- what
 4 we've used on plan, you can see our forced
 5 outage rates, our LOLHS range between .49 and
 6 1.41 over the period. The LOLH with the
 7 sensitivity range from 1.1 to 2.38 which is
 8 still within the envelop of our previous 2.8
 9 analysis. So it gives a level of comfort that
 10 we should be able to maintain that .2 days per
 11 year, one day in five years reliability that
 12 we've been trying to maintain all along.
 13 GREENE, Q.C.:
 14 Q. And if there is -- is there cause for concern
 15 if there is, for example, as happened in 2014,
 16 a combination of partial derating of units and
 17 a loss of a unit at Holyrood, plus we have
 18 three CTs derated, one unavailable and three -
 19 - and a derating of the new one?
 20 MR. HUMPHRIES:
 21 A. Well, that can always be a concern, I guess,
 22 and then it comes back to what are the
 23 probabilities of these things happening and
 24 given that -- I know you'll take me back --
 25 well, in December and January 2014, we were

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1 there, yes, we were, but from a probabilistic
 2 perspective, it is a low probability. It can
 3 happen. But does it warrant -- does the
 4 probability warrant going out and adding
 5 additional capacity to try to cover that off
 6 in the event that it may never happen. That's
 7 the whole basis behind this probabilistic
 8 generation assessment that the industry uses.
 9 GREENE, Q.C.:
 10 Q. In looking at this Table 3, which is again
 11 without the interconnection, and we've heard
 12 some evidence that the link may be done on
 13 time and that one way of meeting a shortfall
 14 would be through a recall from Churchill Falls
 15 over the link?
 16 MR. HUMPHRIES:
 17 A. That's correct.
 18 GREENE, Q.C.:
 19 Q. This table talks about no link from Labrador
 20 and it takes us out to a one-year delay in
 21 Muskrat Falls. Is that correct?
 22 MR. HUMPHRIES:
 23 A. That's correct.
 24 GREENE, Q.C.:
 25 Q. Have you looked at an update of that table to

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1 show a two-year delay?
 2 MR. HUMPHRIES:
 3 A. I'm not -- I don't -- I think we've probably
 4 looked at it. I don't have the numbers in
 5 front of me.
 6 GREENE, Q.C.:
 7 Q. Could I request an undertaking -
 8 MR. HUMPHRIES:
 9 A. But again, we'd have to -- it would have to be
 10 a two-year complete delay.
 11 GREENE, Q.C.:
 12 Q. Yes, and that's what I'm -
 13 MR. HUMPHRIES:
 14 A. Okay.
 15 GREENE, Q.C.:
 16 Q. Okay. We're looking at different scenarios.
 17 This obviously is the one that we have been
 18 looking at before.
 19 MR. HUMPHRIES:
 20 A. Yes.
 21 GREENE, Q.C.:
 22 Q. We know there is a one-year -- we know there's
 23 some delay in Muskrat. You're saying the link
 24 is still on schedule, but can I request an
 25 undertaking to have filed Table 3 extended

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1 another year?
 2 MR. HUMPHRIES:
 3 A. Based on the same forecast?
 4 GREENE, Q.C.:
 5 Q. Same.
 6 MR. HUMPHRIES:
 7 A. Even though we know the forecast could change?
 8 GREENE, Q.C.:
 9 Q. Yeah, based on what you have in this document.
 10 MR. HUMPHRIES:
 11 A. Okay.
 12 GREENE, Q.C.:
 13 Q. What would happen for a further one-year delay
 14 to our capacity.
 15 MR. HUMPHRIES:
 16 A. Yeah.
 17 GREENE, Q.C.:
 18 Q. Now we'll talk about the change in the load
 19 that you wanted to go to.
 20 MR. HUMPHRIES:
 21 A. Sure.
 22 GREENE, Q.C.:
 23 Q. You've mentioned this is hot news, broke only
 24 last week, with respect to a reduction in the
 25 load. When will you know what the actual load

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1 reduction is? And as I understood it, the
 2 load was for what years? It wasn't for next
 3 year? Or was it?
 4 MR. HUMPHRIES:
 5 A. Well, it starts -- the actual reduction start,
 6 yeah, start next year and compared to where we
 7 are now, they will be between -
 8 GREENE, Q.C.:
 9 Q. You had mentioned 20 megawatts for
 10 Newfoundland Power and 25 or 30 for Vale?
 11 MR. HUMPHRIES:
 12 A. There's 30 megawatts for Newfoundland Power,
 13 yes, that materializes in - 2016?
 14 MR. STRATTON:
 15 A. 2016. For Newfoundland Power, there's a small
 16 downward adjustment for the current winter of
 17 approximately, I think, less than 10
 18 megawatts, and then in 2016/2017, it's 20
 19 megawatts.
 20 GREENE, Q.C.:
 21 Q. And for Vale?
 22 MR. STRATTON:
 23 A. Vale's requirement would have decreased for
 24 their current winter period by approximately
 25 10 or 15 megawatts, and then for the 2016/2017

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1 period, it would be more than 30 megawatts,
 2 and in the 2018/2019 time frame, it would be
 3 approximately 25 megawatts.
 4 GREENE, Q.C.:
 5 Q. And what level of comfort or confidence do you
 6 have in the reduction in the load that you've
 7 just outlined?
 8 MR. STRATTON:
 9 A. I don't know if we - I wouldn't be able to
 10 assign any confidence to it, but what we've
 11 experienced to date is that their loads are
 12 lower than what they had anticipated.
 13 Continually through time, the loads have not
 14 reached where they expected them to be. In
 15 the information that was provided to us, what
 16 they had indicated was that their assessment
 17 of what their production capacity is at the
 18 plant, which is at 50 percent now, that they
 19 reassessed what their load requirement was for
 20 when they reach full capacity, and that was
 21 the basis for the new load forecast.
 22 GREENE, Q.C.:
 23 Q. Okay.
 24 MR. STRATTON:
 25 A. And, I guess, the other point I would mention

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1 about, it's not - I wouldn't say typical, but
 2 in our history of having a new customer,
 3 industrial load forecast, they tend to be
 4 conservative when they come in with their load
 5 forecast. So they would be - eventually
 6 materialize, they come in lower.
 7 (12:00 p.m.)
 8 GREENE, Q.C.:
 9 Q. When will you be updating your official load
 10 forecast to reflect the reduction in the load?
 11 MR. STRATTON:
 12 A. We would be preparing an operating forecast in
 13 the next month, before December 1st, an
 14 operating forecast that would cover the five
 15 year period that we incorporate these revised
 16 demand figures.
 17 GREENE, Q.C.:
 18 Q. And is that Hydro's decision at this time,
 19 which is to reflect the loads you've outlined?
 20 MR. STRATTON:
 21 A. Yes, it would be.
 22 GREENE, Q.C.:
 23 Q. So you are confident in the information you
 24 receive from the customer?
 25 MR. STRATTON:

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1 A. I am confident in those numbers.
 2 GREENE, Q.C.:
 3 Q. I'd like now to turn to another topic, which
 4 is the - we need this table up because it also
 5 reflects Hydro indicated for the first time in
 6 this information that you may be looking at
 7 keeping the black start diesels for additional
 8 capacity, is that correct?
 9 MR. HUMPHRIES:
 10 A. That's correct.
 11 GREENE, Q.C.:
 12 Q. And the table above, if we could just scroll
 13 up a bit. Table 1 indicates the 10 megawatt
 14 capacity which is the existing capacity.
 15 MR. MOULTON:
 16 A. Sorry, Table 1, that's the numbers from a year
 17 ago. Table 2 is from Liberty.
 18 GREENE, Q.C.:
 19 Q. All right, Table 2, sorry, but that includes
 20 the -
 21 MR. HUMPHRIES:
 22 A. It included the 10 megawatts, yes.
 23 GREENE, Q.C.:
 24 Q. Yeah, but it also includes an additional 6,
 25 which they're not capable of right now?

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1 MR. HUMPHRIES:
 2 A. Table 2 has the additional 6, so Table 1 is an
 3 indication of where we were with the 10
 4 megawatts, yes.
 5 GREENE, Q.C.:
 6 Q. Yes, that's what -
 7 MR. HUMPHRIES:
 8 A. Yes.
 9 GREENE, Q.C.:
 10 Q. So at the time that Hydro filed the
 11 application for the CT in April of 2014, and I
 12 don't know that it's necessary to go there,
 13 but we can if you would like to see it, one of
 14 the - there was three reasons given for the
 15 new CT; one, of course, was long term capacity
 16 for the interconnected system; the second one
 17 was for additional capacity on the Avalon to
 18 mitigate the generation supply issues related
 19 to the high load on the Avalon and the low
 20 generation; and the third reason was for the
 21 replacement of the leased black start diesels.
 22 MR. HUMPHRIES:
 23 A. That's correct.
 24 GREENE, Q.C.:
 25 Q. Okay, also in that application, Hydro

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1 indicated that they planned to return the
 2 eight 2 megawatt diesel units, eight units of
 3 2 megawatts each, in mid 2015. So obviously
 4 they haven't been returned, is that correct?
 5 MR. HUMPHRIES:
 6 A. No, they have not.
 7 GREENE, Q.C.:
 8 Q. Also in that application, it was indicated
 9 that the black start capability was going to
 10 be in place at the time of commissioning of
 11 the CT. I guess, that was your plan at that
 12 time, was it?
 13 MR. HUMPHRIES:
 14 A. Well, yeah, and I stand to be corrected on the
 15 exact schedule, whether the plan was in place
 16 and proven. I'm not definite on that, but
 17 with the unit, they are - the capability to
 18 black start is there, but it hasn't been
 19 validated and verified through test yet.
 20 GREENE, Q.C.:
 21 Q. So subject to check with respect to the
 22 application, or we can - Hydro's proposal at
 23 that time was that the black start diesels
 24 would be removed and that the CT will be
 25 capable of doing black start at the time of

Page 130

1 commissioning. That was in your original
 2 application.
 3 MR. HUMPHRIES:
 4 A. If that's what's there, that's correct.
 5 GREENE, Q.C.:
 6 Q. Okay, subject to check.
 7 MR. HUMPHRIES:
 8 A. Subject to check, yes.
 9 GREENE, Q.C.:
 10 Q. So in terms of what - you explained how one of
 11 the reasons we find ourselves in the situation
 12 today is that you weren't able to actually
 13 take the necessary outage in order to do that,
 14 is that the only reason?
 15 MR. HUMPHRIES:
 16 A. That's the main reason that we hadn't - I can
 17 walk you through the process briefly, the
 18 black start function that the new CT would
 19 provide. That has the capability of providing
 20 black starts through two paths. One was
 21 through the terminal station down into the
 22 plant, which it is capable of doing now,
 23 hasn't been tested. The second, the plan was
 24 to have - once the diesels came out, to have a
 25 secondary connection directly from the CT to

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1 the Holyrood plant, so that if there were
 2 terminal station issues that the unit would be
 3 able to use to start the black start without
 4 having to go through the terminal station. In
 5 order to - and the sequence of events would be
 6 that the CT would have been commissioned,
 7 there would have been a test through the
 8 terminal station side to validate that the
 9 unit could, in fact, perform the black start
 10 function. Then it would have been necessary
 11 to remove the diesels because this alternate
 12 connection had to go in through the same paths
 13 that the diesels are connected now. The
 14 voltage level on it would have had to change,
 15 so the diesels would have to have been taken
 16 out to do that connection. The intent was
 17 that we would do the first stage of testing,
 18 then the diesels would have been removed, the
 19 low voltage connection would be completed to
 20 the plant and we'd do a final test through the
 21 low voltage. Neither of these tests have been
 22 proven yet. We haven't been able to schedule
 23 a window to get the high voltage test done, so
 24 it's required that we still leave the diesels
 25 there to provide that alternate source until

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1 that time.
 2 GREENE, Q.C.:
 3 Q. And you indicated it might be as late as next
 4 spring before -
 5 MR. HUMPHRIES:
 6 A. Well, I'm saying now, I don't think there will
 7 be a window between now and next spring, and
 8 the risk would just be too high to customers.
 9 GREENE, Q.C.:
 10 Q. So Hydro is continuing to incur the cost for
 11 the diesels?
 12 MR. HUMPHRIES:
 13 A. For lease of the diesels, yes.
 14 GREENE, Q.C.:
 15 Q. Right. You may not be the witness, maybe it's
 16 Finance, but do you know if Hydro intends to
 17 ask for additional cost with respect to that?
 18 MR. HUMPHRIES:
 19 A. I'm not sure on that.
 20 GREENE, Q.C.:
 21 Q. We'll take it up with Finance. Now with
 22 respect to the additional capacity from black
 23 start diesels, I assume because of your
 24 reduction in load, you're doing further
 25 analysis to determine what you're going to be

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1 doing about that?

2 MR. HUMPHRIES:

3 A. Exactly, yes.

4 GREENE, Q.C.:

5 Q. So we don't know if you'll be bringing forward

6 an application about that or not?

7 MR. HUMPHRIES:

8 A. No, we're still working through the details

9 because the changes have been pretty new,

10 right.

11 GREENE, Q.C.:

12 Q. Okay.

13 MR. HUMPHRIES:

14 A. We're working through it.

15 GREENE, Q.C.:

16 Q. I wanted to talk now about the December 1

17 target for having all units available, and if

18 we could go to the transcript of October 21st

19 at page 71. That is not the right - maybe it

20 was 21. I can't pick out my own writing, but

21 it was - Mr. Humphries, there was a question

22 put to you about the importance of the

23 December 1st target, and in your response you

24 indicated that there was some discussion about

25 when winter really starts. Do you recall

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1 that?

2 MR. HUMPHRIES:

3 A. Yes, yes, I do.

4 GREENE, Q.C.:

5 Q. Okay. We can go to it now or we can take it

6 subject to check, it's the response to PUB-

7 NLH-011 in the investigation where Hydro

8 provided what the December peaks have been

9 over a period of years. So again if you'd

10 like to have it before you -

11 MR. HUMPHRIES:

12 A. No, that's fine.

13 GREENE, Q.C.:

14 Q. That response indicates that the peak in the

15 winter period was in December in 2004, and in

16 2011, and that in 2005, 2006, and 2007,

17 December was the second highest peak month and

18 it was extremely close to the peak in that

19 winter.

20 MR. HUMPHRIES:

21 A. That's correct.

22 GREENE, Q.C.:

23 Q. So I would have thought looking at that

24 response, the issue about peak occurring in

25 December would not be one that -

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1 MR. HUMPHRIES:

2 A. No, and I think the context which that

3 question was answered, it was the overall

4 awareness and the importance of being ready,

5 and from a planning perspective, we've always

6 been aware that the winter peak can happen any

7 time between December 1st and March 31st, but

8 it's just - I think there's a heightened

9 awareness on that now through the whole

10 organization to make sure that everyone is

11 aware that this is a reality, so there is -

12 it's part of the heightened awareness, the

13 December 1st piece that's happened since

14 January, 2014, that we make sure now and when

15 the forecast is issued, the operations people

16 are alerted to the fact that, you know, these

17 peaks can happen any time from December 1st to

18 March 31st, and also the importance of the P90

19 exceedance when, you know - you look back and

20 say, well, you know, we've never had a peak up

21 there, and maybe we haven't, but the reality

22 is we could and it could happen anywhere from

23 December 1st to March 31st. So that's the

24 context which I was talking about when winter

25 starts.

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1 GREENE, Q.C.:

2 Q. Because there's a -

3 MR. HUMPHRIES:

4 A. No question in my mind when winter starts.

5 GREENE, Q.C.:

6 Q. Because if you look at that response there,

7 you know, we have had peaks in December and

8 close second peaks several years?

9 MR. HUMPHRIES:

10 A. But it's in the context of across the full

11 organization that everyone that's involved in

12 this process understand that that's the

13 reality that it is critical to be ready.

14 GREENE, Q.C.:

15 Q. And are you saying that that wasn't there

16 prior to -

17 MR. HUMPHRIES:

18 A. I'm not saying it wasn't there, but it's now

19 being reassured.

20 GREENE, Q.C.:

21 Q. The next line of questioning is with respect

22 to the fuel conversion factor, and, Mr.

23 Goulding, I promised you one question, this is

24 it. On the transcript of October 20th, at

25 page 175, I believe, it talks about - and it

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1 was your discussion around doing a new fuel
 2 forecast.
 3 MR. GOULDING:
 4 A. Okay.
 5 GREENE, Q.C.:
 6 Q. My understanding, based on your evidence, was
 7 that you have been asked to do a new fuel
 8 forecast - I wasn't sure what year, probably
 9 2016, is it?
 10 MR. GOULDING:
 11 A. I would have thought that that was around the
 12 2015, and the context of it was a 2015 update.
 13 GREENE, Q.C.:
 14 Q. So it's a 2015 update, and in response to
 15 questions, you indicated that the updated fuel
 16 forecast was not only for price, but it was
 17 for volume as well. Is that correct?
 18 (12:15 p.m.)
 19 MR. GOULDING:
 20 A. That's what I understood.
 21 GREENE, Q.C.:
 22 Q. And as well you indicated that that would
 23 include a revised station service?
 24 MR. GOULDING:
 25 A. It would include a revised net fuel conversion

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1 rate. The details of the station service
 2 wouldn't be in the fuel forecast, but in the
 3 numbers the fuel conversion rate would be
 4 there, and that would be influenced by station
 5 service.
 6 GREENE, Q.C.:
 7 Q. And in the transcript which Ms. Gray has
 8 brought up on the screen for page 175, you do
 9 indicate at lines 3 to 6 in response to a
 10 question from Mr. O'Brien, that the fuel
 11 conversion factor would be lower, and your
 12 answer was, yes, that it would be. My
 13 question here is do you have any information
 14 at this time as to the magnitude of the fuel
 15 conversion factor change?
 16 MR. GOULDING:
 17 A. I guess, in the last numbers that I saw, the
 18 net was around 600 kilowatt hours per barrel.
 19 GREENE, Q.C.:
 20 Q. In order to do that new fuel projection where
 21 we know the price is changed, the volume is
 22 changed, also the load was changed -
 23 MR. GOULDING:
 24 A. The load has changed.
 25 GREENE, Q.C.:

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1 Q. You may not be the best witness to ask, but do
 2 you know if it's Hydro's plan to file a
 3 revised 2015 fuel forecast in this hearing?
 4 MR. GOULDING:
 5 A. I know a fuel forecast is forthcoming. The
 6 level of detail with respect to the change
 7 from the 2015 test year, I don't have those
 8 details.
 9 GREENE, Q.C.:
 10 Q. So it's a 2015 updated forecast. I guess, if
 11 necessary, if it's filed afterwards, we may be
 12 seeing you again, Mr. Goulding.
 13 MR. GOULDING:
 14 A. Sure. I look forward to it.
 15 GREENE, Q.C.:
 16 Q. And again I'm not sure if this is appropriate,
 17 but I would like Hydro to indicate at some
 18 point through counsel if they do plan to file
 19 a 2015 revised fuel forecast and whether we
 20 will have the availability to cross-examine
 21 with respect to that if filed.
 22 MR. YOUNG:
 23 Q. We'll look into that.
 24 GREENE, Q.C.:
 25 Q. The next area was a discussion held with Mr.

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1 O'Brien about rate increases, and here the
 2 transcript of October 20th, and I'm not sure
 3 that we need to go there, it was towards the
 4 end of Mr. O'Brien's cross, where there was a
 5 discussion around fuel price rate increases, I
 6 think it's page 195. I will get better making
 7 notes of what page numbers - I think it's a
 8 "5" there at the end. That information was
 9 provided to Newfoundland Power with respect to
 10 projected rate increases, I think, for 2020.
 11 There we are. Mr. Humphries replied to this
 12 question. First, what was the - how was that
 13 information communicated, in writing,
 14 verbally?
 15 MR. HUMPHRIES:
 16 A. To Newfoundland Power, you mean?
 17 GREENE, Q.C.:
 18 Q. Yes.
 19 MR. HUMPHRIES:
 20 A. I'm not aware.
 21 GREENE, Q.C.:
 22 Q. Okay. Have you seen that information?
 23 MR. HUMPHRIES:
 24 A. The exact content of what Newfoundland Power
 25 may have received, I haven't seen. The

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1 number, 19.8 cents, in that range, I am aware
 2 of that.
 3 GREENE, Q.C.:
 4 Q. Yes, because you were able to say there's no
 5 export sales.
 6 MR. HUMPHRIES:
 7 A. Yes.
 8 GREENE, Q.C.:
 9 Q. Do you know what other assumptions were used
 10 in the derivation of that number?
 11 MR. HUMPHRIES:
 12 A. No, I don't.
 13 GREENE, Q.C.:
 14 Q. I would request an undertaking from Hydro to
 15 provide that information, what was provided to
 16 Newfoundland Power for the record for this
 17 proceeding. It goes to future increases and
 18 information relevant to the Board if they're
 19 considering any issue of recovery of
 20 deficiency accounts over periods of time, as
 21 well as use of surplus funds in the account to
 22 know what the projected increase is, because
 23 roughly if we're - what are we now, Mr.
 24 Humphries, at the - I guess, this is at the
 25 residential consumer level. What is it now,

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1 11/12 percent?
 2 MR. HUMPHRIES:
 3 A. Yeah.
 4 GREENE, Q.C.:
 5 Q. Right, so we're going - that's a significant
 6 increase we're looking at. I think it is
 7 information if it's relevant for Hydro's
 8 customers, it's certainly relevant for the
 9 regulator with respect, not in terms of any
 10 issues of recoveries over periods of time for
 11 deficiency accounts and use of surplus funds
 12 to know what the increases customers are
 13 looking at, and that information hasn't been
 14 provided to the utility, and information that
 15 utility asked questions in this proceeding
 16 about it and got answers on.
 17 MR. YOUNG:
 18 Q. I can look into it to see what has transpired,
 19 what was provided.
 20 GREENE, Q.C.:
 21 Q. Okay, well, while we're waiting, I can try
 22 with Mr. Humphries to see if he's familiar
 23 with the -
 24 MS. GLYNN:
 25 Q. Was the undertaking -

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1 GREENE, Q.C.:
 2 Q. No - Ms. Glynn asked if the undertaking was
 3 accepted. I understood from your answer -
 4 MR. YOUNG:
 5 Q. Yes, to -
 6 GREENE, Q.C.:
 7 Q. To look into it.
 8 MR. YOUNG:
 9 Q. As I understand - yes, that's right, I'm
 10 undertaking to look into it to see what was
 11 provided to Newfoundland Power. I think that
 12 was the undertaking.
 13 GREENE, Q.C.:
 14 Q. Right, because - I was going to take advantage
 15 of Mr. Humphries being here to ask him a few
 16 more questions about how it was derived, just
 17 in case I don't get the information. Mr.
 18 Humphries, you say you're familiar with the
 19 derivation of the 19.8 -
 20 MR. HUMPHRIES:
 21 A. No, I did not - I said I was familiar with the
 22 number. I'm not familiar with the derivation.
 23 GREENE, Q.C.:
 24 Q. Well, you knew the export sales weren't in
 25 there.

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1 MR. HUMPHRIES:
 2 A. I knew enough to know that, yes.
 3 GREENE, Q.C.:
 4 Q. All right, so tell us what else you knew?
 5 MR. HUMPHRIES:
 6 A. Other than that, that's pretty well all I know
 7 about it.
 8 GREENE, Q.C.:
 9 Q. How did you know export sales weren't
 10 included?
 11 MR. HUMPHRIES:
 12 A. Through internal information, and as well
 13 watching consumer advocate on TV the evening
 14 before.
 15 GREENE, Q.C.:
 16 Q. So maybe we'll have to ask Mr. Johnson to give
 17 the Board information about projected rate
 18 increases.
 19 CHAIRMAN:
 20 Q. Is he an expert witness or what?
 21 GREENE, Q.C.:
 22 Q. Anyway, I concede, and we'll have to await the
 23 result of Hydro, but that's the reason for the
 24 relevance of the information it does relate to
 25 issues in this hearing, and I'm sure we will

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1 all be dealing with increases post-2015.
 2 Those are all my questions, thank you.
 3 CHAIRMAN:
 4 Q. All right, I guess we're over to -
 5 VICE CHAIR WHALEN:
 6 Q. No, I don't have any questions. I thought I
 7 did, but now I'm not going to proceed. Thank
 8 you very much.
 9 CHAIRMAN:
 10 Q. I think you're finished, gentlemen. Thank you
 11 very much.
 12 MS. GLYNN:
 13 Q. Re-direct.
 14 CHAIRMAN:
 15 Q. I'm sorry, re-direct, excuse me, Mr. Young.
 16 RE-DIRECT EXAMINATION BY MR. YOUNG:
 17 MR. YOUNG:
 18 Q. Thank you, Mr. Chair. Just one question on
 19 re-direct, and this came up in the context of
 20 Ms. Dawson's cross-examination this morning of
 21 Mr. Goulding. I wonder, Jen, can you bring up
 22 Schedule 5 to our evidence. Mr. Goulding made
 23 a reference to the schedule with respect to
 24 energy purchases, and this conversation - yes,
 25 thank you, that page. Those numbers are tiny,

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1 could you make that a little larger, please.
 2 MS. GRAY:
 3 Q. Yes.
 4 MR. YOUNG:
 5 Q. And the line that I think is relative here is
 6 there was a discussion there about two-thirds
 7 of the way down, Fermeuse, wind, eco-energy
 8 incentive credit, and there was some
 9 discussion of that, and I believe the question
 10 was put to you something in the nature of, you
 11 know, how does that work, and I note that
 12 those numbers are in brackets. Mr. Goulding,
 13 could you explain how that works and does that
 14 fall into the fuel purchase cost?
 15 MR. GOULDING:
 16 A. Into the fuel purchase cost?
 17 MR. YOUNG:
 18 Q. Yes, is that an amount that's in revenue
 19 requirement, for instance?
 20 MR. GOULDING:
 21 A. Yes, it is. They're negative numbers because
 22 they reflect a credit that comes to Hydro, so
 23 from what I understand there is a federal eco-
 24 energy credit program that applies to the two
 25 wind farms, St. Lawrence and Fermeuse, and on

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1 a quarterly basis Hydro receives 75 percent of
 2 that credit that would have been not paid out
 3 to the owners and operators of the wind
 4 projects.
 5 MR. YOUNG:
 6 Q. So just to be clear, these are shown as a
 7 credit on this table. That would mean that
 8 they do not get charged to customers, that
 9 this is an amount that's not required to be
 10 collected in revenue requirement?
 11 MR. GOULDING:
 12 A. There are amounts, I guess, that flow through
 13 the overall power purchase cost, so they would
 14 work towards the benefit of the customers.
 15 MR. YOUNG:
 16 Q. Reduce the total amount paid?
 17 MR. GOULDING:
 18 A. Correct.
 19 MR. YOUNG:
 20 Q. That's the only question I had, Mr. Chairman.
 21 Thank you.
 22 CHAIRMAN:
 23 Q. Okay, sir, thank you very much. I guess,
 24 we're adjourned until next Tuesday. Is that
 25 correct?

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1 MS. GLYNN:
 2 Q. Tuesday of next week.
 3 CHAIRMAN:
 4 Q. Mr. Humphries, I got a suggestion for a new
 5 peak. I think you should look at July for
 6 winter peak based on our experience this year.
 7 MR. HUMPHRIES:
 8 A. It's on our radar.
 9 CHAIRMAN:
 10 Q. Thank you.
 11 (UPON CONCLUDING AT 12:23 P.M.)

1 CERTIFICATE

2 I, Judy Moss, hereby certify that the foregoing is a true
3 and correct transcript of a hearing in the matter of
4 Newfoundland and Labrador Hydro's General Rate
5 Application heard on the 22nd of October, A.D., 2015
6 before the Commissioners of the Public Utilities Board,
7 St. John's, Newfoundland and Labrador and was transcribed
8 by me to the best of my ability by means of a sound
9 apparatus.
10 Dated at St. John's, Newfoundland and Labrador
11 this 2nd day of October, A.D., 2015
12 Judy Moss

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