COMMISSION OF INQUIRY
RESPECTING THE MUSKRAT FALLS PROJECT

Transcript | Phase 1 Volume 5

Commissioner: Honourable Justice Richard LeBlanc

Monday 24 September 2018

CLERK (Mulrooney): This Commission of Inquiry is now open. The Honourable Justice Richard LeBlanc presiding as Commissioner.

Please be seated.

THE COMMISSIONER: All right. All right. Good morning.

So we have a couple of issues to deal with this morning. One is, for the late start, we have a problem with one of the monitors, so counsel thank you for moving. The other issue is the – we noticed on the weekend that we have an issue with the webcasts that are being archived.

So that is being – been worked on all weekend long. And the provider who is doing this is in Montreal, so there's a bit of a time difference, but we're hoping that a little later today we will actually get the archived webcasts of each day from last week up. So my understanding is we're working on trying to get those up today, so my apologies to those who have tried to access the archived websites.

All right, so we're continuing this morning, then, with Mr. Malamed and Mr. Shaffer. The two of you are – remain affirmed at this time, so obviously, you are – basically, have to tell the truth this morning, as is the same as last week. And Ms. O'Brien, I understand you wish to start.

MS. O'BRIEN: Yes, thank you, Commissioner.

Before we begin this morning, I'd seek to enter a number of exhibits. These are exhibits that primarily have been provided to us by counsel for parties with standing, and they may wish to refer to them during their cross-examination of Mr. Malamed and Mr. Shaffer.

So I'd be seeking to enter exhibits P-00159 and P-00245 through to P-00255.

THE COMMISSIONER: All right. So any objection to those being entered? If not, then they'll be entered as marked.

MS. O'BRIEN: Thank you, Commissioner.

Before I – before the first counsel gets up to begin cross-examination, I understand, Mr. Shaffer, you gave some testimony on Friday that you'd like to give some clarification on this morning. So I'd like to give you that opportunity to do that.

MR. SHAFFER: Terrific, thank you.

Commissioner, I think on Friday, I testified that in a particular – in our report on page 65, lines 20 through 23 – I believe I testified that the strategic risk was included in the DG2 documents and then taken out of the DG3 documents, not included there. I want to clarify for everybody in the room, for the record, a little bit more detail on that.

The DG2 – there are two sets of DG2 documents. One was a – something marked version B1; the other was version B2. And on page 26 of version B1, included in there was – it was indicated the estimate contingency would be 15 per cent and that the strategic risk exposure would be 6 per cent.

Included on B2, which was the document that was actually issued three months later, in September of 2011, that was signed by Jason Kean and Paul Harrington, that the estimate contingency was indicated to be 15 per cent and the strategic risk exposure was indicated to be nil.

And on both versions, there was a bar chart that was included to show you the make up of the project estimate components. And included on the bar chart, in both versions, was a strategic risk – was included on both bar charts, which is why – one of the reasons why I thought it was included in the final sanctioning documents for DG2. But I wanted – so I wanted to clarify that for you, Commissioner.

THE COMMISSIONER: Mm-hmm.

MS. O'BRIEN: Thank you, Commissioner.

That's all I have for these witnesses and so the first cross-examiner can come up.

THE COMMISSIONER: Okay. Government – Province of Newfoundland and Labrador.

MR. RALPH: Good morning, Mr. Malamed –

MR. MALAMED: Good morning.

MR. RALPH: – and Mr. Shaffer.

MR. SHAFFER: Good morning.

MR. RALPH: My name is Peter Ralph and I represent Her Majesty the Queen in Right of Newfoundland and Labrador, perhaps better known, in a general sense, as the Government of Newfoundland and Labrador. And I'd firstly like to thank you for your work and your contributions to the work of this Inquiry.

I don't have many questions. They'll focus on three areas. The first, for Mr. Malamed, is the use of Department of Finance forecasts in the – in Nalcor's load forecasting; and secondly, for Mr. Shaffer, the purpose of cumulative present worth calculations; and thirdly, for Mr. Shaffer, the role of the shareholder or funder in setting the P-factor. And my questions, I suggest, are largely questions of clarification.

Mr. Malamed, the Government of Newfoundland and Labrador is interested in your testimony regarding the forecasts of the Department of Finance. I understand that Nalcor relied on those forecasts to make load forecasts. Is that correct?

MR. MALAMED: That's correct.

MR. RALPH: And load forecasts, I guess, are attempts at predicting the amount of electricity that customers will require or use in the future?

MR. MALAMED: Correct.

MR. RALPH: And I guess, they're also important in determining how much electricity will have to be generated or purchased by a utility?

MR. MALAMED: Right, they would be included in the planning load forecast.

MR. RALPH: And I guess they're also – load forecasts are also important inputs in determining the cost of projects in present day dollars –

MR. MALAMED: Yeah.

MR. RALPH: – such as cumulative present worth.

MR. MALAMED: Yes.

MR. RALPH: And is it fair to say if load forecasts overestimate the amount of electricity required, then money may be spent on projects that aren't required?

MR. MALAMED: Could you repeat that question, I'm sorry?

MR. RALPH: If load forecasts overestimate the amount of electricity required, then money may be spent on projects that aren't required?

MR. MALAMED: That could be possible.

MR. RALPH: Alternatively, if forecasts underestimate the future need for electricity, then you could have a system which cannot provide enough power to customers?

MR. MALAMED: That could be possible.

MR. RALPH: Now, you – in your report you have – you express some concerns about how Nalcor carried out its load forecasts.

MR. MALAMED: Could you point me to the page that you're talking about?

MR. RALPH: That's fine – yes.

Before I get to that – and I understand – like, you said earlier Nalcor relied on macroeconomic forecasts from the Department of Finance?

MR. MALAMED: Correct.

MR. RALPH: And those macroeconomic forecasts would include gross domestic product –

MR. MALAMED: Mm-hmm.

MR. RALPH: – income levels, new housing starts and population. Is that right?

MR. MALAMED: I'm just trying to get to that page.

That would be – gross domestic – so I'm on page 30?

MR. RALPH: Yes.

MR. MALAMED: Starting on line 14? "Macro-economic forecasts provided by the GNL Department of Finance, which included gross domestic product; personal income levels; new housing starts; and population growth."

MR. RALPH: And now, perhaps you can go to page 8 of P-00014 – Exhibit P-00014. And down to line 31. And perhaps you could read that paragraph.

MR. MALAMED: Nalcor relied on economic forecasts provided by its shareholder, Government of Newfoundland and Labrador Department of Finance. "We determined the forecast for economic indicators used by Nalcor, related to population and housing starts, were different from a forecast published by The Conference Board of Canada ("CBOC") in 2012."

MR. RALPH: So is it fair to say that conclusion is not suggesting there's anything wrong with Department of Finance forecasting – macroeconomic forecasting?

MR. MALAMED: That's correct. It's just saying that there's a difference.

MR. RALPH: There's a difference?

MR. MALAMED: That's correct.

MR. RALPH: And perhaps we can go to page 34 of P-00014?

MR. MALAMED: Yes.

MR. RALPH: And perhaps you can read lines 10 to 19?

MR. MALAMED: Would you like me –

MR. RALPH: Or start at 8 I guess.

MR. MALAMED: "Findings and observations – we note the following: CBOC projected housing starts during 2027 to 2031 from 826 to 530 units (36% decrease) respectively, while Nalcor has projected" a "1,505 to 1,230 units (18% decrease) respectively.

"Population projected from CBOC for the period 2027 to 2031 decreased (approximately) 498,000 to 486,000 (2% decrease) respectively, while Nalcor maintained consistent projections (approximately) 513,000 population per year since 2018."

MR. RALPH: So if I understand your conclusions correctly, your criticisms aren't that Nalcor relied on the Department of Finance macroeconomic forecasts, it's that perhaps they should've used more forecasting models and used something of an average?

MR. MALAMED: It's not a criticism. It's just my observation. My observation is that this is the source that they used, and there were other sources out there.

MR. RALPH: Right. So again, I say your criticism is that they – perhaps it's too strong a word: criticism. It's an observation that they relied on one source, and they could've relied on others?

MR. MALAMED: That is correct.

MR. RALPH: But there's nothing wrong with the one source that they relied on?

MR. MALAMED: Not that I'm –

MR. RALPH: Not that you're aware of.

MR. MALAMED: Not that I'm aware of.

MR. RALPH: And if you go to the next page, page 35, at line 6 to 9, and perhaps you can read those lines.

MR. MALAMED: Sure.

"Findings and observations – ten year history average variance of 8.9% overstated load forecast (including all customers); and ten year history average variance by customer (i.e. domestic, general service, industrial) had a range between -5% (domestic was more than forecast) to 61.1% (industrial was less than forecast)."

MR. RALPH: Now, did you determine or conclude that any of these variances were due to Nalcor's reliance on the Department of Finance forecasting?

MR. MALAMED: That's not something that we looked at.

MR. RALPH: That's not something you looked at?

MR. MALAMED: No.

MR. RALPH: Fair enough.

And Mr. Shaffer, I understand that you've been involved in a great deal of litigation. Is that correct? Would you describe it as that?

MR. SHAFFER: As a witness.

MR. RALPH: And I understand – have you ever been involved in litigation where cumulative present worth came up?

MR. SHAFFER: This is the first one.

MR. RALPH: This is the first time.

And I guess, it's fair to say that the purpose of cumulative present worth is to compare different potential objects or projects?

MR. SHAFFER: Well –

MR. RALPH: To give you the lowest cost?

MR. SHAFFER: Yes, as it was used in – in this sense, it was to determine the least-cost alternative between the Isolated and the Interconnected, as I understand it.

MR. RALPH: Yes.

So it doesn't actually tell you, or the person that's thinking about developing or doing the project, whether they can afford to do the project?

MR. SHAFFER: No, I didn't see anything like that. I mean, you sort of equate that to – I equate that to: when my daughters go away to college, do I get them a used Toyota for $3,000 or a Porsche?

MR. RALPH: Yes.

MR. SHAFFER: I mean, that's one way of thinking about it, I –

MR. RALPH: Right.

MR. SHAFFER: – suppose.

MR. RALPH: So in this instance, cumulative present worth wouldn't have told the Government of Newfoundland and Labrador that they could afford the Muskrat Falls Project?

MR. SHAFFER: I wasn't privy to that, and I think that's something that would be between Nalcor and the government.

MR. RALPH: Just a few more questions, and they address the P-factor. I'm not sure if you can answer these, but hopefully, you can help me understand. In any type of project, be it a construction, hydroelectric or whatever, there's a risk of cost overruns?

MR. SHAFFER: Absolutely.

MR. RALPH: But you can apply probabilities and the projected cost of a project and estimate how much more money you must add to your budget to reduce the risk of overruns to certain levels?

MR. SHAFFER: Correct.

MR. RALPH: And so my question, then, concerns what specific or different party's role would be in that process. So in this instance, we've got a government, who's the shareholder of Nalcor, and Nalcor is the proponent of the project. And again, I'm not sure if you can answer these questions for me, but what role do you think the government or the funder should have in that process of determining a P-factor?

MR. SHAFFER: I would think, intuitively, that the person that's flipping the bill for any type of construction project would want to know the risk of hitting the budget.

MR. RALPH: Sir, are you aware of situations where this has happened or is this, basically, your application of sort of basic principles?

MR. SHAFFER: Well, just other construction projects, for example, that I've been involved in that the owner is funding. I equate it to nothing as – not a megaproject necessarily like this. But just – owners want to know what this thing is going to cost, right? Otherwise – in order to determine what the – to set aside funds.

MR. RALPH: Thank you very much. I have no further questions.

MR. SHAFFER: Okay. Thank you.

THE COMMISSIONER: Nalcor Energy.

MR. SIMMONS: Thank you, Commissioner.

Good morning, gentlemen.

As you know, I've previously introduced myself before, Dan Simmons, counsel for Nalcor Energy here at this Inquiry. I have a number of topics that I want to ask you some questions on arising out of your direct evidence, your presentation and your report.

First of all, I wanted to ask you a couple of things though about the investigation that Grant Thornton carried out.

My understanding is that Grant Thornton was tasked with conducting the investigation – that my understanding is that Grant Thornton's investigation was to be conducted independently, separately and apart from any investigative activities carried out by the Commission counsel and the Commission's own investigators. Is that correct?

MR. MALAMED: That's correct.

MR. SIMMONS: Okay.

Can you tell me a little bit more about how you did that in practice?

MR. MALAMED: We designed our own work steps. We may have sought – we asked – we provided that update to the Commission. We sought input from them, but it wasn't prescriptive input. And we would keep them up to date in terms of what it was that we were doing.

MR. SIMMONS: Okay.

And was it left to your own discretion to determine what sort of inquiries you should make, what areas you should inquire into, guided, of course, by the principles of investigative and forensic accounting that you were working under?

MR. SHAFFER: I could take that.

The interview lists, the documents we wanted, the external research that we did, the talking to the consultants that we talked to, that was all done independent of the Commission, Mr. Simmons.

MR. SIMMONS: Mm-hmm. Yes. Okay.

You'd mentioned, in the direct testimony, the volume of documents that the Commission has collected as part of its work. Did you have access to the complete document collection that the Commission has available to it?

MR. SHAFFER: We did.

MR. SIMMONS: Okay.

So that's the 2.5 million documents we've heard mentioned, I think.

MR. MALAMED: That's correct.

MR. SIMMONS: Okay.

And am I correct that the – perhaps, the majority of those is actually documentation sourced from Nalcor, which forms part of the record Nalcor has provided to the Commission. Would you know that to be the case or not?

MR. MALAMED: I don't know if I can say majority, but there's definitely a lot of the documents.

MR. SIMMONS: Right, right.

So in any event, you did have a full and open access to whatever documentary record that's been collected by the full effort that the Commission has undertaken up to the point you did your report?

MR. MALAMED: That's – yes, the documents, I understand, that were available were made available to us.

MR. SIMMONS: Good.

And in addition to that, you did make your own document requests, certainly to Nalcor, I don't know about to other parties or not, but there were specific documents that you sought and obtained in response to requests made to Nalcor. That's correct?

MR. MALAMED: That's correct.

MR. SIMMONS: Yeah. And in addition to that, there were also written questions that were posed to Nalcor for which written responses were provided in the course of your investigation, correct?

MR. MALAMED: Correct.

MR. SIMMONS: And I think you've said in direct examination that responses were received to all the questions that were posed.

MR. MALAMED: Correct.

MR. SIMMONS: For the people that were interviewed, were those all selected by Grant Thornton – by the two of you as the investigators?

MR. SHAFFER: Yes.

MR. MALAMED: Yes, they were.

MR. SIMMONS: Okay.

And is it also correct that, throughout this whole process, the actual scope of what you'd been asked to investigate wasn't revealed to any of the parties, including to anyone from Nalcor, until your report was released and the questions that had been posed to you by the Commissioner were made known?

MR. MALAMED: I'd like to just refer you to our engagement letter.

MR. SIMMONS: Yes.

MR. MALAMED: Where it outlines – can I take you to page 4 of Exhibit – is it P-00013?

MR. SIMMONS: It sounds like it might be right.

MR. MALAMED: That talks to the scope in terms of what we were engaged to do.

MR. SIMMONS: Yes.

MR. MALAMED: And if I were to just summarize, we're (inaudible) to form an investigation of the options – a little bit lower, please. Right there is perfect.

"The forensic audit shall include only an investigation of the options that were considered by Nalcor to address the electricity needs of Newfoundland and Labrador's Island Interconnected customers. The forensic audit shall include an investigation of the assumptions or forecasts on which Nalcor's analysis of the options was based.

"The forensic audit shall include an investigation of Nalcor's financial analysis of the Project and of the Isolated Island option from which Nalcor determined that the Project was the least-cost option for the supply of power to Newfoundland and Labrador's Island interconnected system over the period 2011-2067."

MR. SIMMONS: All right.

So when the engagement of Grant Thornton was announced, I believe there was a press release from the Commission which generally described the nature of what the engagement was for, but the actual engagement letter wasn't released until – to the parties – until your report was also released. Is that correct, to your knowledge?

MR. MALAMED: That's – to my knowledge –

MR. SIMMONS: Right.

MR. MALAMED: I don't really know the answer to that question.

MR. SIMMONS: Okay.

So my point being the cooperation and participation that you obtained from Nalcor, and presumably others, that you've described earlier in your main testimony, that was under circumstances where even the precise ambit of what you'd been asked to look into hadn't been disclosed to those parties in advance, aside from generally what was in the press release issued by the Commission?

MR. SHAFFER: That's correct.

MR. SIMMONS: Yeah, okay. Good.

And the report that's been submitted as P-00014, that report is the product of Grant Thornton's own work, rather than work that's been done by the Commission or any fact findings by the Commission or its counsel or any conclusions reached by the Commission or its counsel. Is that correct?

MR. MALAMED: That's correct.

MR. SIMMONS: Right.

In the course of preparing that report, did you have access to information from any interviews of people who may have been interviewed by Commission counsel?

MR. MALAMED: Could you ask that question one more time? I apologize.

MR. SIMMONS: Were you aware that, in addition to your interviews, that Commission counsel were also conducting interviews?

MR. SHAFFER: I was aware that they were conducting the interviews.

MR. SIMMONS: Yes.

MR. SHAFFER: I think to answer your question, though, Mr. Simmons, I wasn't sure who they were talking to –

MR. SIMMONS: Yes.

MR. SHAFFER: – specifically, at the time that we were doing this.

MR. SIMMONS: Right.

MR. SHAFFER: So our interviews were independent of their interviews.

MR. SIMMONS: Right.

And so information obtained by Commission counsel in their interviews, where you were conducting your own independent investigation, that wasn't shared between the Commission interviewers and yourselves. Is that correct?

MR. SHAFFER: As far as I know, yes.

MR. SIMMONS: As far as you know. Well, I presume you would know if you'd been provided with transcripts of interviews or information from interviews conducted by others.

MR. SHAFFER: I was provided transcripts yesterday of various interviews.

MR. SIMMONS: Okay.

MR. SHAFFER: Up at – that was the first time I was –

MR. SIMMONS: Not 'til then.

MR. MALAMED: – provided anything.

MR. SIMMONS: Okay, good. Thank you.

So gentlemen, if I understand correctly, the report we have as P-00014 is broken down essentially into three sections, and I'll try and get this right now. It's P-00014, the table of contents is on page 3. The first two sections are "Energy Options" and "Financial Analysis of Two Options."

And Mr. Malamed, do I understand that that was primarily your responsibility and that you've given the direct evidence concerning those two sections.

MR. MALAMED: That's correct, but –

MR. SIMMONS: Yeah.

MR. MALAMED: – both of us can – could answer the question.

MR. SIMMONS: Okay, and Mr. Shaffer, the third part, "Capital Cost Estimates," was that primarily your responsibility? And I think we've heard you present the principle evidence on that.

MR. SHAFFER: Yes.

MR. SIMMONS: Okay, well, I'll generally follow the same –

MR. SHAFFER: Okay.

MR. SIMMONS: – format in that case.

So the first of those sections deals with the options that were considered for power supply. And that begins on page 13 of P-00014, the report.

MR. MALAMED: Yes.

MR. SIMMONS: You've already outlined, Mr. Malamed, the range of options that were considered at the screening stage, and with the exception of two that we'll talk about, I think the conclusion was that it was not unreasonable to exclude those before moving on to the more detailed examination that concluded preparation of cumulative present worth analysis.

MR. MALAMED: That's correct.

MR. SIMMONS: Correct? Yeah. And although your conclusions are kind of expressed in the negative, that it was not unreasonable to exclude those, does that essentially mean that you found that it was reasonable to exclude them?

MR. MALAMED: I didn't find anything to suggest that it wasn't reasonable or – it was fine, yes.

MR. SIMMONS: Okay. Thank you.

And if we go to page 28 of P-00014 please, this is the section that deals with the potential option of deferring any major addition to the power supply system until 2041, when you've reported that the power from the Upper Churchill Project should become available. And for that option you didn't state that it was not unreasonable to exclude it.

So, from that – and if we go to page 29, lines 25 and 26, please, where you state what I think is your conclusion in this part of the report?

MR. MALAMED: Yes.

MR. SIMMONS: You say: "Nalcor's decision to eliminate the deferred 2041 option was supported in part by a rationale which was inconsistent with a finding of the NSUARB in relation to the ML portion of the Muskrat Falls Project."

So my first question is, did you actually evaluate the reasonableness of excluding or not excluding this option, or have you only made a factual observation here that there was one rationale which was in your view inconsistent with what was reported in Nova Scotia?

MR. MALAMED: This is just a factual comment –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – but I'm not saying here that it was wrong.

MR. SIMMONS: Okay. All right.

And aside from not saying that it was wrong, neither has there been any evaluation conducted of the reasonableness of the choice to exclude it.

MR. MALAMED: Correct.

MR. SIMMONS: Correct? Okay.

The excerpt I just read to you from the report said that one that – let me go back to it. It said that the 2041 option was supported in part by a rationale which you say was inconsistent with the NSUARB finding.

Can I take you to your presentation that you gave yesterday, please, which is P-00135, and we'll go to slide 18. So, and I appreciate that the presentation is only a point-form summary of the more detailed explanations that are given in your written report.

The first bullet there reads: "Deferred Churchill Falls (2041): eliminated based on the uncertainty

pertaining to availability of power; this assumption contradicted NSUARB findings."

So my question is, in your report you described that that rationale was in part what was relied upon but was not the whole of the reason for excluding that option. In your presentation, why have you not included that same qualification?

MR. MALAMED: I'm sorry, could you ask the question one more time?

MR. SIMMONS: In your report, the rationale that you describe as a reason for excluding the 2041 option, you said was in part based on the conclusion that there was uncertainty about the availability of the power in 2041and that the – you state that the Nova Scotia Utilities Board decision was inconsistent with that conclusion. Do I have that right?

MR. MALAMED: Yes.

MR. SIMMONS: Yes. In your report, did you also identify that there were other considerations that were brought to bear when deciding to exclude the 2041 option?

MR. MALAMED: In my report I did not. My report was just a summary of my report, of the complete written report.

MR. SHAFFER: Mr. Simmons, if I may expand on that a little bit.

On page 28, when you look at lines 26 to 27, it talks about the uncertainty around the availability of supply. And then there's other bullet points, it goes from one through six, that's what in part means, that particular item.

MR. SIMMONS: Right, yeah.

And you've anticipated just what my next question would be, Mr. Shaffer.

So, Mr. Malamed, when you look at page 28 of the report, there are five points listed there. And line 24 begins: "Nalcor's P.U.B. Submission noted that this option did not advance beyond phase one screening for several reasons including:" – and it lists five reasons. Correct?

MR. MALAMED: Yes.

MR. SIMMONS: Reason number one is "uncertainty around availability of supply from Churchill Falls in 2041 because of the difficulty in determining the environmental and policy frameworks that will be in place 30+ years out." Correct?

MR. MALAMED: Yes.

MR. SIMMONS: So is that the one that you're referring to on the next page, 29, at line 25 when you say the elimination of the option was supported in part by a rationale which was inconsistent?

You're only saying that that one of five reasons you've identified is a reason which you say was inconsistent with the Nova Scotia UARB decision.

MR. MALAMED: Correct.

MR. SIMMONS: Do I have that right?

MR. MALAMED: Correct.

MR. SIMMONS: Okay.

Now back to my other question. So in the report it's been made clear that it's only one of five considerations here that you're looking at and pointing out the inconsistency.

So can we go back to your presentation at P-00135 please, and back to slide 18. I'll read the first bullet again. "Deferred Churchill Falls (2041): eliminated based on the uncertainty pertaining to availability of power; this assumption contradicted NSUARB findings."

Now a reader reading this presentation and not having read your report, would it be fair that they would conclude that the only reason for eliminating this option was uncertainty pertaining to the availability of power?

MR. MALAMED: I don't think so; but, that being said, I'd be happy to clarify that –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – if that is a confusion.

MR. SIMMONS: Is there any reason – I'm going to suggest that the bullet as I've read there is not as balanced a statement about what your factual findings were as we find in your written report.

MR. MALAMED: Okay.

MR. SIMMONS: Do you accept that?

MR. MALAMED: I could see how it could be –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – confusing. And, as I said, I'd be very happy to clarify that, whether it be revised or an explanation.

MR. SIMMONS: Mm-hmm. Okay.

Did you recognize – did you author this slide?

MR. MALAMED: I did.

MR. SIMMONS: Yes.

Did you recognize that when you prepared the bullet that it might not represent as balanced a statement as you included in your report?

MR. MALAMED: I did not think that.

MR. SIMMONS: Okay, thank you.

So in identifying this point, about the uncertainty relating to the availability of power, did you or anyone else on your team conduct any deeper investigation into the circumstances surrounding the availability of – potential availability of power from the Upper Churchill Project in 2041?

MR. MALAMED: No. That's was outside of my mandate.

MR. SIMMONS: Okay.

Did you look at the 1969 power contract?

MR. MALAMED: No.

MR. SIMMONS: Okay.

We've had evidence last week here from Jason Churchill who presented a report outlining fairly extensively the history, political and otherwise, around the Upper Churchill Project and attempts to develop the Lower Churchill Project. Have you read his report?

MR. MALAMED: I don't know offhand if I've read that report.

MR. SIMMONS: Okay. Well, it was presented in evidence last week, so have you read it since last week?

MR. MALAMED: I have not – I don't believe I've read it since last week.

MR. SIMMONS: Okay.

And did you have information of that sort available to you when you conducted your investigation?

MR. MALAMED: Some history was provided to me during the interviews –

MR. SIMMONS: Okay.

MR. MALAMED: – regarding the history.

MR. SIMMONS: Okay.

Who provided you with some information about the history?

MR. MALAMED: You provided me some of the information.

MR. SIMMONS: Okay, so aside from that.

MR. MALAMED: You were the first that came to mind. I'd probably have to go back to notes to find – to figure out –

MR. SIMMONS: Okay.

MR. MALAMED: – who else told me.

MR. SIMMONS: Thank you.

THE COMMISSIONER: Can you speak up a bit? I can't –

MR. MALAMED: Sorry about that.

THE COMMISSIONER: So just what was your answer?

MR. MALAMED: My answer was that Mr. Simmons was the one who provided me with the history. Others did provide me with history. I wouldn't be able to tell you offhand and I'd probably have to go back to my notes.

MR. SIMMONS: Okay.

Can we go back, please, to P-00014, the report? Page 28, again please, Madam Clerk.

MR. SHAFFER: I'm sorry, Mr. Simmons, what page?

MR. SIMMONS: Page 28. It's of the report, P-00014.

MR. SHAFFER: Okay.

MR. SIMMONS: Okay, you can stop there, Madam Clerk. Thank you.

So Mr. Shaffer had referred us a moment ago to lines 26 and 27, which is a statement of the first reason given in the PUB submission to the – from Nalcor about why this option of waiting until 2041 was eliminated. And I'll just read it again: "… uncertainty around availability of supply from Churchill Falls in 2041 because of the difficulty in determining the environmental and policy frameworks that will be in place 30+ years out …."

I'd like to bring you, please, to the – that actual PUB submission and it's exhibit P-00077, please. And we'll be going to page 100 of the PDF.

MR. MALAMED: I don't know if we had that one printed.

UNIDENTIFIED MALE SPEAKER: (Inaudible) yeah.

MR. SIMMONS: Can we scroll down, please? Okay, stop there.

So beginning at line 8, there's a sentence that starts: "This option did not advance beyond Phase 1 screening for the following reasons …." And at line 10 there's a statement of the first reason. And the first sentence, I'll suggest, is the same as what was included in your report saying: "There is inherent uncertainty around guaranteeing the availability of supply from Churchill Falls in 2041 because it is difficult to determine the environmental and policy frameworks that will be in place 30+ years out."

And then it continues and says: "There are other issues surrounding the CF" – Churchill Falls – "asset with respect to Hydro Quebec, as Nalcor is not the sole shareholder of the Churchill Falls operation."

MR. MALAMED: Yes.

MR. SIMMONS: Okay.

So what do you understand about how the Churchill Falls asset is held corporately and who the owners are?

MR. MALAMED: I understand that the – could you ask the question again? I'm sorry.

MR. SIMMONS: Do you know who the owner of the Churchill Falls power plant is?

MR. MALAMED: It's Newfoundland Hydro, as well as Quebec I understand – Hydro-Québec.

MR. SIMMONS: Okay. Well, I'm going to suggest it's owned by Churchill Falls (Labrador) Corporation, generally known as CF(L)Co.

MR. MALAMED: CF(L)Co, I apologize.

MR. SIMMONS: Does that sound correct?

MR. MALAMED: Yes.

MR. SIMMONS: Okay.

And I'm going to suggest that CF(L)Co has two shareholders: one is through the Nalcor organization, ultimately the Province of Newfoundland and Labrador and the other is Hydro-Québec. Are you aware of that?

MR. MALAMED: Okay.

MR. SIMMONS: Were – but were –

MR. MALAMED: Yeah.

MR. SIMMONS: – you aware of that?

MR. MALAMED: Yeah.

MR. SIMMONS: Yes, okay.

Do you know what the proportions of shareholdings are? What the interests of those parties are in that company?

MR. MALAMED: I don't. That wasn't something I was engaged to do.

MR. SIMMONS: Okay.

So there's a – there seems to be a suggestion here that once 2041 comes, which I believe is the date the 1969 power contract ends – do you understand that to be the case?

MR. MALAMED: Yes.

MR. SIMMONS: There seems to be a suggestion that then the Upper Churchill power just becomes available to Newfoundland and Labrador. Do you know if that is correct or if it's a more complicated question than that?

MR. MALAMED: I think it's a more complicated question than that. I believe that a contract ends and then I don't know what happens after the contract ends.

MR. SIMMONS: Right.

So the statement here, in this paragraph that's been quoted in your report, is that there's inherent "uncertainty around guaranteeing the availability of supply from Churchill Falls in 2041 …." So you've just said you don't know what's going to happen in 2041.

MR. MALAMED: I did, but I'd like to, if I can –

MR. SIMMONS: Yes, please.

MR. MALAMED: – just bring you to page 29.

MR. SIMMONS: Please, yeah.

MR. MALAMED: And I'd like to just read to you lines 1 to 4.

MR. SIMMONS: So page 29 of P-00014?

MR. MALAMED: Of P-00014.

MR. SIMMONS: Of your report? Sure.

It would –

MR. MALAMED: It says, and I'm starting on line 1: "while legitimate questions remain about the availability of Market-priced Energy from Nalcor over the first 24 years of the Maritime Link, the evidence clearly shows that there should be no shortage of Market-priced Energy when the Churchill Falls arrangement with Hydro Quebec comes to a conclusion in 2041."

MR. SIMMONS: Okay, right. Now, that's the quote from the Nova Scotia UARB decision that you've used to ground your statement that it is inconsistent with the elimination of this option –

MR. MALAMED: That's correct.

MR. SIMMONS: – at that stage.

MR. MALAMED: That's correct.

MR. SIMMONS: Okay.

So before looking at the Nova Scotia UARB report though, I – am I correct in assuming, from the questions you've answered already, that Grant Thornton did not do any kind of independent assessment of the question of whether there were uncertainties about the availability of market-priced power or power in 2041?

MR. MALAMED: That's correct. We were not engaged to do an assessment.

MR. SIMMONS: Okay.

So really what you've done is you've flagged that Nova Scotia UARB made a statement. It looks on its face inconsistent with the decision to use that rationale as part of the reason for eliminating the 2041 option?

MR. MALAMED: That's right. Based on the experts, this is what they've said.

MR. SIMMONS: Okay.

Can we bring up Exhibit P-00245, please – 00245? Yeah.

So, Mr. Malamed, do you recognize this as the decision of the Nova Scotia Utility and Review Board that's referred to in your report?

MR. MALAMED: Yes.

MR. SIMMONS: Okay.

Madam Clerk, can you scroll down a little, please? Okay, you can stop there.

And the first page describes who the participants in this hearing were, I believe. Do you have – have you had any prior experience in working with public utilities boards and how they function and how hearings take place before public utilities boards?

MR. MALAMED: I have not but people on my team have.

MR. SIMMONS: Okay. Who on your team has had that experience?

MR. MALAMED: Steve Power.

MR. SIMMONS: Yes, and who's Mr. Power?

MR. MALAMED: He's a partner with the firm.

MR. SIMMONS: Yes, in St. John's.

MR. MALAMED: Yes.

MR. SIMMONS: Right. And what's the nature of his experience with public utilities boards?

MR. MALAMED: I cannot talk to the nature of his complete experience.

MR. SIMMONS: Right.

And do you know who Grant Thornton has done work for on public utilities matters? And it's publicly known in Newfoundland that – I believe that Grant Thornton acts generally for the Public Utilities Board in Newfoundland and Labrador.

MR. MALAMED: I understand that.

MR. SIMMONS: Correct. Okay.

So that was a resource you had available to you for information about how public utilities boards would operate?

MR. MALAMED: Correct.

MR. SIMMONS: Right. It didn't raise any concern about Grant Thornton's independence in this role, did it?

MR. MALAMED: No.

MR. SIMMONS: No, you were satisfied that wasn't a problem.

MR. MALAMED: Yes.

MR. SIMMONS: Okay.

So if you look at this page it describes who the parties are. And I can – Madam Clerk, if I can get you just to scroll down to the bottom and we can scan the list there? So was Nalcor Energy a participant in this hearing?

MR. MALAMED: You asked me to look for Nalcor's name?

MR. SIMMONS: Yeah, well, I'm asking you: Do you know whether Nalcor Energy was a participant in the hearing in Nova Scotia?

MR. MALAMED: I do not know the answer to that question.

MR. SIMMONS: Okay. Do they appear on the list of parties on the front – at the first page of this report?

MR. MALAMED: From a periphery look, it appears that they do not.

MR. SIMMONS: Okay.

MR. MALAMED: Some of the names, maybe somebody who belonged to Nalcor, but I wouldn't know that just from looking at the review like this.

MR. SIMMONS: Yeah. So when you – I presume you reviewed this report as part of your investigation, did you?

MR. MALAMED: Yes.

MR. SIMMONS: And did you make any effort to determine whether any party from – participated either from Nalcor, any Nalcor-affiliated company or even the Government of Newfoundland and Labrador?

MR. MALAMED: I would have to go back and check. I don't know the answer to that question.

MR. SIMMONS: Okay.

I'm going to suggest this was a proceeding in Nova Scotia that involved Emera and it involved Nova Scotia interests with no participation from Nalcor or the Government of Newfoundland whatsoever. Would you disagree with that statement?

MR. MALAMED: I'm going to believe you.

MR. SIMMONS: Mm-hmm. Okay.

All right, can we go, please – can we scroll down to the top of the next page, perhaps? Okay, we have the other parties. Continue on, please. Okay, you can stop there.

So when was this decision rendered, Mr. Malamed?

MR. MALAMED: The decision date is July 22, 2013.

MR. SIMMONS: Okay, how – and in timing, how does that relate to the sanction of the Muskrat Falls Project and the Labrador-Island Link?

MR. MALAMED: That would be post-sanction.

MR. SIMMONS: Sanction, I think, occurred in December 2012.

MR. MALAMED: Yes.

MR. SIMMONS: So would this – would these comments from the Nova Scotia UARB have been available prior to the government's decision to sanction the project?

MR. MALAMED: They would not.

MR. SIMMONS: Okay.

Can we go to page 61, please? In particular, paragraph 182.

MR. MALAMED: Yes.

MR. SIMMONS: Now, it's a fairly long decision; it covers a lot of things. What, generally, is being addressed in this hearing?

MR. MALAMED: Sorry?

MR. SIMMONS: What is this hearing about? Why is the Nova Scotia Utility board holding this hearing? What's the question they're looking into?

MR. MALAMED: I don't know if I'm the right person to go into this case.

MR. SIMMONS: Okay.

Here in the report when you've stated there's an inconsistency between statements in this decision and the exclusion of the 2041 option, was that your conclusion or did someone else on your team do this part of the work?

MR. MALAMED: This is my work. Somebody may have – who have worked on this may have helped to draft it, but eventually it becomes my work.

MR. SIMMONS: Right.

MR. MALAMED: To go back to your question, though, in terms of this quote –

MR. SIMMONS: Yeah, well, I haven't asked you a question about the quote yet, Mr. Malamed.

MR. MALAMED: Okay.

MR. SIMMONS: I'm asking – well, let me ask you first: Did you read the decision yourself?

MR. MALAMED: Yes.

MR. SIMMONS: Okay, all right.

And I understand, it seems, you've looked at a lot of things, so I can understand that you may

not be able to tell me exactly what's going on here. Is it generally a review by the Nova Scotia board of Emera's proposal to construct the Maritime Link?

MR. MALAMED: Yes.

MR. SIMMONS: Yes, okay.

It's not a review of the Government of Newfoundland or Nalcor decision to construct the Muskrat Falls Project or the Labrador-Island Link?

MR. MALAMED: No.

MR. SIMMONS: Okay.

And on page 61 here, if you look at paragraph 182 –

MR. MALAMED: "The Board considers it instructive at this point to review the evidence respecting the projected availability of Market-price Energy from Nalcor in the future."

MR. SIMMONS: Okay. And do you know why that was an issue in this hearing?

MR. MALAMED: I could not tell you at this point.

MR. SIMMONS: Okay.

So if we go down through the next number of paragraphs there, there's a review of energy – of what's available. And if you go down, please, to paragraph 189. Okay.

Now, in utility board hearings like this, there's – you may be aware that there's often a practice of parties submitting written requests to each other and written responses being given, and evidence is accumulated in that way. Similar to the way that, in this investigation, Grant Thornton submitted written requests to Nalcor and Nalcor provided responses. They call them RFI's often – requests for information.

So in paragraph 189, is this – is there a quote here from one of these responses, that was submitted to the Nova Scotia board by – it says NSPML, which I'm gonna suggest is a Nova Scotia utility affiliated with Emera. You can take your time and have a look at it, but does that appear to be what the quote in this paragraph is from?

MR. MALAMED: Where the quote is from – could you explain –?

MR. SIMMONS: The paragraph begins: "Indeed, in response to an Information Request from Board staff, NSPML did not challenge a statement contained on a website sponsored by the Government of Newfoundland and Labrador that claimed NL is 'projected to need 80% of Muskrat Falls power by 2036, or even earlier as additional industrial growth occurs in the province.' Instead, NSPML responded by referring the Board to other potential sources of energy from Nalcor: …." And then there's a quote there from NSPML –

MR. MALAMED: Yes.

MR. SIMMONS: – do you see that?

So this appears to be a submission from the Nova Scotia company to the board in Nova Scotia. And the last line in that quote, the last sentence is the one that says: "In 2041, the Upper Churchill reverts to ownership of Newfoundland and Labrador." Do you see that?

MR. MALAMED: Yes.

MR. SIMMONS: Now, when I read this decision I'm not finding any other evidence described here, other than this piece about what happens in 2041. Are you aware of whether there is other evidence considered here?

MR. MALAMED: In this 141 page document?

MR. SIMMONS: Yes.

MR. MALAMED: I don't know. I don't think so at this point.

MR. SIMMONS: Okay.

Go please –

MR. SHAFFER: Mr. Simmons, may I answer that question?

This was – this quote that we have in our report is from 6.1.6.1 on page 65, which indicates that when – that there would be no shortage of energy –

MR. SIMMONS: Well, let's go to paragraph 200 of the decision, please.

Okay, this is the section dealings with Findings. I think, Mr. Shaffer, this is the quote you're referring to.

MR. SHAFFER: Yes, that was the source of the quote in the report.

MR. SIMMONS: Right. "While legitimate questions remain about the availability of Market-priced Energy from Nalcor over the first 24 years … the evidence clearly shows that there should be no shortage of Market-priced Energy when the Churchill Falls arrangement with Hydro Quebec comes to a conclusion in 2041."

So my question is that what else is there in this decision that supports – that you identified that supports that finding, other than the one line that I referred to a moment ago? Are either of you aware of anything else that supports this?

MR. SHAFFER: This was the basis for the finding.

MR. SIMMONS: Pardon me?

MR. SHAFFER: This was the basis of what made the report.

MR. SIMMONS: Hmm.

MR. SHAFFER: There's nothing else that I'm aware of in this report –

MR. SIMMONS: Okay.

MR. SHAFFER: – otherwise we would've listed it.

MR. SIMMONS: Now, this particular issue, this – was this a core issue that was under examination by the Nova Scotia board or was this more of a peripheral or side issue in this hearing? Do you know?

MR. MALAMED: I don't think that we can make that comment.

MR. SIMMONS: Okay.

And did you conduct any deeper analysis of this quote from paragraph 200 to determine the reliability of this conclusion and whether it was actually applicable to the elimination of the 2041 option?

MR. MALAMED: No, I think I've already said the level of work that we've done –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – but, you didn't – your question just did – include the question of reliability.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: Could you just repeat that?

MR. SIMMONS: Did you do anything to look behind this quote to see on what basis did they make this decision? Is this something that is really something that is actually inconsistent with what was done here? Or did you just take this one quote from the report and say: It looks like it's inconsistent, we'll point that out?

MR. MALAMED: We took the information from this report.

MR. SIMMONS: Yeah. Okay.

Can we go back to P-00077, please? Page 100 again. So, Mr. Malamed, we're back to the Nalcor submission to the Public Utilities Board, which occurred I think between the DG2 time and the DG3 time, correct? Is that, you know, your understanding? It was part of the referral to the PUB to look into the question of which was the least-cost option for the future supply of power for the Island of Newfoundland?

MR. MALAMED: Correct.

MR. SIMMONS: You're nodding. Yeah, okay.

We've spoken about one of the five reasons that were given there for the decision to eliminate the 2041 option from screening. Madam Clerk, if

you can scroll down so we can see number 2 and 3 please?

Okay. So number 2 was that there was significant risk associated with maintaining reliable supply through the life extension measures for the Holyrood generating station through to 2041. At that time, the first two units at Holyrood will be 70 years old.

So do you know, generally, what type of electricity production units are at Holyrood?

MR. MALAMED: Again, I could comment but I'm not the right person to answer the question.

MR. SIMMONS: Right, okay. Are you aware that they are thermal units and that they burn a fairly heavy type of fuel oil? They produce steam; steam-drive generators, they produce electricity.

MR. MALAMED: Yes.

MR. SIMMONS: You are aware that's generally the way –

MR. MALAMED: Yes.

MR. SIMMONS: – it goes?

In your investigations, did you do anything to examine this position that it would be difficult to extend the Holyrood plant through to 2041?

MR. MALAMED: I don't know if I saw a difficulty, but I saw that it was definitely discussed.

MR. SIMMONS: Yes, okay. Do you know what, generally, the useful life is of a plant like that?

MR. MALAMED: I'd have to go and look to find out.

MR. SIMMONS: Right.

From other things we'll look at as we move on, you were aware, were you not, that if the Isolated Island Option was selected, that there would have to be substantial funds spent in order to refurbish the Holyrood facility just to get it to 2036?

MR. MALAMED: Yes, the – I believe it was the scrubbers and the precipitators would have to be refurbished.

MR. SIMMONS: Okay, all right.

The third one there deals with – it says: "Deferral of the interconnection would result in significantly higher rates for island consumers between now and 2041 and does not provide rate stability."

So there's two things there. Did you look at whether the – it was correct that if the decision was deferred to 2014, that there would be higher rates with – through the continued burning of fuel at Holyrood and other sites?

MR. MALAMED: No. That wasn't part of our mandate.

MR. SIMMONS: Okay.

There's a reference to rate stability. Did you – do you understand what the concern would've been about rate stability had the 2041 option of waiting until Churchill Falls power might be available was considered?

MR. MALAMED: Again, I was not engaged to take a look at that.

MR. SIMMONS: Okay. Right.

Generally, do you understand that when electricity is primarily produced using fossil fuels, that the cost of the electricity, to some extent, has to vary with the changes in the price of those fuels over time?

MR. MALAMED: Yes.

MR. SIMMONS: Right. So if the price of fuel is going up and down, there can be volatility in the electricity rate as well?

MR. MALAMED: Yes. Right.

MR. SIMMONS: And do you understand that in the Interconnected Option, which would involve building the large hydroelectric plant, once in place the costs are relatively fixed, and you don't tend to see volatile changes in energy

prices when you're primarily dependent on hydroelectricity?

MR. MALAMED: Are you saying specific to fuel?

MR. SIMMONS: Well, the – if you're primarily dependent on hydroelectric energy rather than fuel, that there tends to be not the same concern about volatility in electricity prices. Is that – do you understand that to be generally a correct statement? If not, just say so.

MR. MALAMED: I don't know if I can say that. I think what I can say is that the – you're saying that there's a parallel or relationship between oil and – the price of oil and the price of electricity –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – as oil goes up the price would go up.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: I think that part I agree with, yes.

MR. SIMMONS: Yes.

MR. MALAMED: And I also agree that in Muskrat Falls less oil would be used.

MR. SIMMONS: Yes.

MR. MALAMED: I think that's what you're asking as well.

MR. SIMMONS: Mm-hmm. Okay.

Let's – so since less oil is being used and more of the power is coming from a hydroelectric facility – maybe you don't know the answer – but do you know what – whether that would reduce the volatility, the long-term volatility, in consumer prices paid for electricity? And Mr. Shaffer wants to answer the question as well.

But Mr. Malamed, first, do you – can you answer that for me?

MR. MALAMED: I believe it would reduce the volatility.

MR. SIMMONS: Yes, okay, Mr. Shaffer?

MR. SHAFFER: It does – I mean, it does reduce the volatility. It – I said it does reduce the volatility.

MR. SIMMONS: Yes.

MR. SHAFFER: I mean, as I testified to last week, based on the sensitivity analysis –

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: – I mean, I – you know, we – I talked about how the impact of fuel prices would have more of a impact on the Isolated Option than it would on the Interconnected Option.

MR. SIMMONS: So prices – that's the impact of prices, but if the mix of generation uses more hydroelectric and less fuel, lower quantity of fuel, would you agree with me that consumer prices will be less volatile because the cost of supply of the hydroelectric power is more stable than the uncertain cost of oil-fired electricity?

MR. SHAFFER: Oh sure.

MR. SIMMONS: Mmm.

MR. SHAFFER: I would think so.

MR. SIMMONS: Okay. So that's one of the considerations that were listed here. And listed – Madame Clerk, if we can see item 4, please?

Island customers will remain dependent on fossil fuel generation for the first 30 plus years of the study, resulting in continued and increasing greenhouse gas emissions.

Would you agree that in 2012 that there was certainly uncertainty about what the effect of greenhouse gas emission controls would be on the future cost of oil-fired electricity generation?

MR. MALAMED: Again, I think I'm not the – an expert to be able to give an opinion on that.

MR. SIMMONS: Okay. All right.

Mr. Shaffer, do you have any view on that point?

MR. SHAFFER: I do not.

MR. SIMMONS: Okay.

So did you have any question about the applicability of all these points we just reviewed in items 2, 3 and 4 to the decision to exclude the 2041 option?

MR. MALAMED: Did I have any – I'm sorry – did I have any –

MR. SIMMONS: Was there – did Grant Thornton have any concern or question about whether these were legitimate considerations to support the exclusion of the 2041 option?

MR. MALAMED: We took them as legitimate.

MR. SIMMONS: Okay.

So if we can go back please to P-00135, the presentation, just for a moment, and then we'll move off this topic, and if we can go back to slide 18 again. So when we read that fist bullet –

MR. MALAMED: Sorry, one second, please. Yes.

MR. SIMMONS: Just to confirm, we should not take the statement there as being a criticism of the decision to remove the 2041 option from further consideration. It's merely a summary of your report statement that you observed an inconsistency in the Nova Scotia report and the – one of the rationales given for the exclusion of the 2041 option. That's really as far as it goes.

MR. MALAMED: That's correct.

MR. SIMMONS: Yeah. All right.

The second point there deals with power imports from or via Hydro-Québec, and it says: eliminated without formal discussions with Hydro Quebec. This is dealt with in your report at P-00014 at page 27 please.

Similar to the 2041 option that we just discussed, is what you're saying here really that you've identified as a fact that there were no formal discussions with Hydro-Québec?

MR. MALAMED: Yes.

MR. SIMMONS: And do you go any further and express any kind of view or opinion or finding about whether there should or shouldn't have been discussions with Hydro-Québec?

MR. MALAMED: No we do not. I do not.

MR. SIMMONS: Madame Clerk, if we can scroll down to where a line 12 is at the top of the screen please.

So in this section of your report, you've identified that there were in fact two potential sources considered for import of electricity from outside of the province, one being from Hydro-Québec and the other being from the New England Independent System Operators.

Can you tell me a little bit more about the New England option? What was under consideration there?

MR. MALAMED: I understand that it was from – bringing it from the North American grid but I couldn't – I'm not an expert to go into the full –

MR. SIMMONS: Yeah.

MR. MALAMED: – understanding of it.

MR. SIMMONS: What can you tell me about how the option of importing from Hydro-Québec would work?

MR. MALAMED: Again, I am not an expert to tell you how it would work.

MR. SIMMONS: Okay, do you know if there were any formal discussions with the power sellers that were part of the New England Independent System Operators?

MR. MALAMED: Not that I'm aware of.

MR. SIMMONS: Okay.

So you flagged your identification of lack of discussions with Hydro-Québec but not the fact that there were not formal discussions with New England Independent Operators. Why identify one and not the other?

MR. MALAMED: Again, I'm not the expert to go into the Upper Churchill Falls; but potentially there would be that opportunity.

MR. SIMMONS: Okay, can you describe to me a bit more about what the opportunity was? 'Cause you had to have some understanding of what these proposals were in order to determine that it was appropriate to flag, as you did, that there had not been formal discussions with Hydro-Québec.

MR. MALAMED: I understand that Hydro-Québec owns part of Upper Churchill Falls.

MR. SIMMONS: Pardon me?

MR. MALAMED: That Hydro-Québec owns part of Churchill Falls.

MR. SIMMONS: Yes. Okay.
So what was on – when imports from Hydro-Québec were being considered, did you understand that to be limited to power available at Churchill Falls? Or was it more broadly, electricity that could be sourced from Hydro-Québec from any source?

MR. MALAMED: It wasn't something that I looked at in terms of limitation, only to Upper Churchill Falls.

MR. SIMMONS: Okay.

Do you – the Upper Churchill plant produces, I think, 5,400 megawatts of power. Are you aware of that? Is that something would've been known to you?

MR. MALAMED: I can't quote the accuracy.

MR. SIMMONS: Yeah.

MR. MALAMED: But, Dan, if you say it I'm going to believe you.

MR. SIMMONS: Yeah.

You're aware of the existence of the 1969 power contract. And I think in direct evidence we heard, as well, that you're aware of what's called the GWAC, the Guaranteed Winter Availability Contract. Do you know under those contracts how the power at Churchill Falls is committed?

MR. MALAMED: I do not.

MR. SIMMONS: Do you know if under those contracts there would be any power available for purchase from – it would have to be from CF(L)Co, actually – for use in the province?

MR. MALAMED: I do not; but I just want to bring your attention to – what we're saying here is that there weren't any formal discussions.

MR. SIMMONS: Yes.

MR. MALAMED: I'm not giving an opinion as to what would have resulted as a result of those formal discussions.

MR. SIMMONS: Right. Are you even saying that there should have been formal discussions?

MR. MALAMED: I'm just saying that there wasn't formal discussions.

MR. SIMMONS: So we should not conclude, from the fact that you've pointed out that there were no formal discussions, that Grant Thornton is expressing any view on whether or not there should have been formal discussions.

MR. MALAMED: That's correct.

MR. SIMMONS: Let's go back to P-00135, page 18 again, please. That's the presentation.

This is really just – on the second bullet there, this is really the same question that I had for you on the first bullet, which is: Based on the discussion we've just had, and the limits on what Grant Thornton has commented on in their report – and it's really limited to just pointing out that there weren't formal discussions – when we read the second bullet there: "Power Imports from/via Hydro Quebec: eliminated without formal discussions with Hydro Quebec," do you believe that that presents a balanced view of the discussion that's in your report?

MR. MALAMED: Again, I believe that it's a highlight of items from the report.

MR. SIMMONS: Uh-huh.

MR. MALAMED: But for our presentation we couldn't necessarily put everything on there; we can just read the report if that's something that you'd want.

MR. SIMMONS: Okay.

The report at Exhibit P-00014, please, and we can go to page 28. We're going to look at lines 5 and 6 on page 28.

Now there's a number of points that are listed here and if you need to go back to the previous page to look at it, we can. I think you have the paper copy in front of you?

MR. MALAMED: I do.

MR. SIMMONS: Yeah.

So I think what you're doing here in the report is you're listing some of the points that were made in a publication put out by the Government of Newfoundland and Labrador concerning whether, you know, it – energy should be brought – bought from either the New England operators or from Hydro-Québec. Is that correct?

MR. MALAMED: Are you talking about on page 27, line 33, the publication by the Department of Natural Resources in electricity imports published on July 2012?

MR. SIMMONS: Yes.

MR. MALAMED: Yeah.

MR. SIMMONS: So the bullet points we're seeing continued on the top of page 28 are extracted from that report, are they?

MR. MALAMED: Correct.

MR. SIMMONS: Right.

And if you go to lines 5 and 6, it says: As compared to the Muskrat Falls alternative, Nalcor estimates that the QC import option is 1.4 billion more expensive, and the Maritime import option is 1.5 billion more expensive.

Did Grant Thornton do any work to verify those calculations?

MR. MALAMED: I'd like to say that we did a bit. I'd like to – and I'd like to refer to somewhere else in the report to give a bit of a fuller answer. Can I – may I do that?

MR. SIMMONS: Sure.

MR. MALAMED: Okay.

MR. SIMMONS: Please.

MR. MALAMED: There's a schedule on page –

MR. SHAFFER: Twenty-four – looking for this one?

MR. MALAMED: That's the one.

MR. SHAFFER: Yeah.

MR. MALAMED: On page 24, please.

MR. SIMMONS: Yes.

MR. MALAMED: On 24, you'll see that schedule.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: And if I just take the mouse, I'm gonna just point – maybe I'm not – the mouse is not – doesn't want me.

But I would just bring to your attention that the Isolated Island –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – the top left corner –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – has the 12.2 billion.

MR. SIMMONS: Yes.

MR. MALAMED: To get to the 1.4 billion, the difference, the Isolated Island is greater than the Hydro-Québec.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: So take the 12 and then subtract the 11, giving you the 1.4.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: And to get the 1.5, I'd be taking the 12 billion and minusing it from the 11 billion.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: I've just done that math in my head, so that's –

MR. SIMMONS: Okay.

MR. MALAMED: – an estimate.

MR. SIMMONS: Good.

MR. MALAMED: But to the extent, in terms of looking at the CPW, that's as far as we went –

MR. SIMMONS: Okay.

MR. MALAMED: – to answer your question.

MR. SIMMONS: Do you recall Grant Thornton submitting a written request to Nalcor Energy for supporting material for the calculations I referred you to then? And now – and Grant Thornton being provided with spreadsheet models where the 1.4 and 1.5 billion calculations were done?

MR. MALAMED: I don't recall that but I'd like to just bring you back to the engagement letter –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – that talks to the two options for us to look at.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: Not all of the options.

MR. SIMMONS: Mm-hmm.

Okay. So did – do you know whether your staff did any analysis of the modelling information that was provided in support of those numbers?

MR. MALAMED: I believe there wasn't analysis done on the CPW of import options as it was outside the mandate.

MR. SIMMONS: Okay.

In your report your comment actually was that there'd been no formal discussions. Did you make any inquiries as to whether there had been any informal discussions with Hydro-Québec?

MR. SHAFFER: Mr. Simmons, if I recall, both Mr. Martin and Mr. Bennett indicated there were no discussions if my memory serves me correct.

MR. SIMMONS: Thank you.

So did you do any investigation or give any consideration into whether it was appropriate or reasonable to assess what the likely cost of market-priced energy would be acquired from Hydro-Québec based on other factors? Did you do any assessment?

MR. MALAMED: No, that –

MR. SIMMONS: Because you were saying there was no discussions with Hydro-Québec. Was Nalcor in a position to be able to determine what the market price of that energy would be if it were available from Hydro-Québec?

MR. MALAMED: I did not do an assessment of that.

MR. SIMMONS: I can bring you to the Nalcor submission to the PUB at P-00077, but I won't do that right now. We can if we need to. Do you recall that the basis for the evaluation of what the cost would be to acquire power from Hydro-Québec was that it would be – if it's market-price power, it would not be any cheaper than what Hydro-Québec could sell it to other customers for.

MR. MALAMED: But, yes, that's true. We're not – we're – I haven't made a note – we haven't made any comment on anything being cheaper.

MR. SIMMONS: Okay.

MR. MALAMED: Of – or the price.

MR. SIMMONS: Okay. Did you consider whether a reasonable way to assess it was to look up what the market price of energy was for sales by Hydro-Québec into the New York market?

MR. MALAMED: Again, that was outside of our mandate.

MR. SIMMONS: Okay, so you didn't examine that.

Can we go to P-00245, the Nova Scotia UARB decision, please?

MR. MALAMED: I don't think this is – we don't – I don't think I've looked at (inaudible).

MR. SIMMONS: Page 44, paragraph 124, there's a section here in the UARB report beginning at paragraph 124, and the heading there is Other Import options. And it begins: Based on the board's review, the other import option suffers from one major shortfall. In the end, this option lacks a reasonable foreseeable notice of imported energy.

And 125 says: The underlying basis for this alternative is the availability of a long-term contractual relationship with Hydro-Québec on the supply of renewable energy. No intervener has suggested any other potential source of the imported energy.

Did you review this portion of this decision from the – in the course of your investigation, can you recall?

MR. MALAMED: I did. I just wanted to go back to the first sentence that you read.

MR. SIMMONS: Yes.

MR. MALAMED: I just – I believe that it reads: In the end, this option lacks reasonable – a reasonably foreseeable source. I'm not sure that I heard you say source, of import energy.

MR. SIMMONS: Sorry, say that again?

MR. MALAMED: I'm not sure that you said that a foreseeable source –

MR. SIMMONS: Oh, I'm sorry. Yes.

MR. MALAMED: – of imported energy.

MR. SIMMONS: Right, okay.

So let's just scroll down to where paragraph 126 is on the top of the page, please. And I'm not going to go through this whole section with you, but in paragraph 126 it refers to the opening statement from NSPML.

And the second paragraph quoted there is: "Emera and Nova Scotia Power have worked with Hydro Quebec for many decades. We met with them specifically to discuss and consider this alternative and simply put, there is no long-term, fixed price energy available from Hydro Quebec."

Were you aware that that was the evidence that Emera had given at the Nova Scotia hearing?

MR. MALAMED: I believe I was.

MR. SIMMONS: Okay.

Did you take that into consideration at all when reporting finding that you did in your report on this issue? Because it seems to suggest that Emera tried and couldn't get any long-term commitments from Hydro-Québec to supply power.

MR. MALAMED: Our investigation was not about Emera.

MR. SIMMONS: Okay. Thank you.

I have some questions for you now about the next section of the report which I think deals with what we've been referring to as the CPW, the cumulative present worth analysis. It's not a straightforward concept and would you agree with me it's not as simple as doing a present value on a stream of future income or a stream of costs that, in the utility context, it's a bit more complicated than that?

MR. MALAMED: I'd agree there's more inputs.

MR. SIMMONS: Yes. Okay.

And I think Mr. Shaffer had answered the question before but, Mr. Malamed, had you had

any involvement or exposure to the use of cumulative present worth methodology prior to this engagement?

MR. MALAMED: The – I don't know if it was called cumulative present worth, but in terms of present valuing something, I have experience with present valuing. So bringing something to today's dollars –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – is a calculation that I do have experience with.

MR. SIMMONS: Okay.

And, do you know what it's – if it has different applications in a utility industry compared to life insurance or finance?

MR. MALAMED: I'm not an expert to be able to make that comment.

MR. SIMMONS: Okay.

Would you agree with me that the CPW analysis is really a tool used by electrical utilities to plan for their future electricity generation needs?

MR. MALAMED: I understand that its part of planning for their future generational needs.

MR. SIMMONS: Right.

And in the electric utility industry it takes time to build new generation when power loads are increasing or when existing generation needs to be replaced. Do you understand that?

MR. MALAMED: I understand that it takes time depending on the selection that's made.

MR. SIMMONS: Right.

MR. MALAMED: Or the time that it takes is dependent on the selection that's made.

MR. SIMMONS: It's more time or less time, but you need to plan in advance to be able to meet the loads you anticipate are going to have to be met in the future.

MR. MALAMED: Yes.

MR. SIMMONS: Okay.

And you understand that there are generally choices about the types of generation facilities that can be built. For example, in consideration here Nalcor Energy looked at small hydroelectric, wind, fuel-fired combustion turbines of a couple of different types, continuing the Holyrood plant, and the larger Muskrat Falls plant and the transmission line from Labrador. They're all different choices that can be made for how you supply the energy needs. Correct?

MR. MALAMED: Correct.

MR. SIMMONS: And they would have different costs associated with them. Correct?

MR. MALAMED: Right.

MR. SIMMONS: So the cumulative present worth, I'm going to suggest, is valuing in today's dollars the cost of adding new generation of different types into the future to meet the needs that you anticipate in the future.

MR. MALAMED: Yes.

MR. SIMMONS: Okay? You're with me so far? Good.

And the cumulative present worth methodology, it's more than just putting a value on it. It also involves developing different scenarios for adding generation of different types at different times and then valuing the cost of the different potential possibilities that you have for the way to meet those future projected needs?

MR. MALAMED: Yes.

MR. SIMMONS: So the CPW, I'm gonna suggest, is not a calculation of actual cost – and I think my friend, Mr. Ralph, said it's not for the purpose of making an investment decision. It's for the purpose of comparing alternatives.

MR. MALAMED: I don't know that I could comment if it's right or wrong for making an investment decision.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: I think what we were engaged to do was to look at CPW that was used as a comparison between two options.

MR. SIMMONS: Yes.

So it was its use as a comparator between two different options for providing future generation supply was the focus of the work –

MR. MALAMED: Correct.

MR. SIMMONS: – that you did.

Okay.

And can you describe for me, in general terms, what you understand the process to be that was followed by Nalcor Energy here in getting to the point where there are two CPW analyses for comparison? Where does the process start and where does it end? From your investigation, what can you say –

MR. MALAMED: From identifying the need for energy?

MR. SIMMONS: Yes.

MR. MALAMED: To identifying possible options?

MR. SIMMONS: Yes.

MR. MALAMED: To screening?

MR. SIMMONS: Pardon me?

MR. MALAMED: To screening those options out? The ones that we spoke – that I spoke about previously in my –

MR. SIMMONS: Sure. Well, let's say we're in the second phase, as you've described in your report. We've eliminated some options, so we're not gonna build a nuclear plant. So we're not gonna factor in an input for the cost of building a nuclear plant. But we haven't screened out combustion turbines, so they're in the mix. We haven't screened out Muskrat Falls; it's in the mix. We haven't screened out Island Pond as a hydro source; that's in the mix.

Once you've got your choices of generation, what's the – can you tell me – outline for me what the process is to reach the point where you have comparable numbers for different development options?

MR. MALAMED: The process I understand that was taken was to identify the options –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – to begin building a model and an estimate of – I guess, to call it high level, the beginnings of the financial analysis of the two options.

MR. SIMMONS: Okay.

Well, let me try a description and see if that matches your general understanding of it.

It starts with the load forecast, which is a prediction of the electricity needs. Typically, utilities look 20 years ahead to do that.

MR. MALAMED: Correct.

MR. SIMMONS: That part sounds right?

Then the load forecast is taken by, in Nalcor's case, the system planners. And the system planners use some proprietary software called Strategist –

MR. MALAMED: Yes.

MR. SIMMONS: – where multiple inputs are put into this computer program, one of which is the load forecast.

MR. MALAMED: Yes.

MR. SIMMONS: Right? Other inputs include things like the types of generation that are available and what the costs of those generation are –

MR. MALAMED: Yes.

MR. SIMMONS: – yes? And that the output from this computer modelling program will be a series of different development scenarios saying we could choose to build small hydro first, or we could choose to do wind first, and different

sequences of development, does that sound correct?

MR. MALAMED: Correct.

MR. SIMMONS: And then the cost information is used to say in today's dollars what is the total cost of adding this generation capacity over the future time period that's under examination?

MR. MALAMED: Correct.

MR. SIMMONS: Okay. We're good so far. And once you've got that, then it has to go to the Investment Evaluation people –

MR. MALAMED: Correct.

MR. SIMMONS: – who will use it to do a calculation about what the power rates are going to be based on that development scenario.

MR. MALAMED: So –

MR. SIMMONS: That sound right so far?

MR. MALAMED: At – that part, yes, but again, I'm not the expert now. We're moving over, but okay.

MR. SIMMONS: Okay, but does that – in the course –

MR. MALAMED: Yes.

MR. SIMMONS: – of your investigation you've looked into this?

MR. MALAMED: Yes.

MR. SIMMONS: Yes. So does that sound consistent to what –

MR. MALAMED: Yes.

MR. SIMMONS: – you've discovered? It does. Okay.

Once you get a power rate, then it goes back to the load forecaster because the power rate influences the load, right? Is that your understanding?

MR. MALAMED: Yes.

MR. SIMMONS: Yeah? So then the load forecaster prepares a new load forecast, and the new load forecast goes to the system planner who runs the whole thing again based on the new load forecast and may come up with a different development option, and this cycle will continue until there's a stable set of recommendations that can be identified as the least-cost options for meeting that power need. Conceptually, is that what you understand it to be?

MR. MALAMED: Yes.

MR. SIMMONS: Okay.

So just so we understand a bit more about how this works, can we go to Exhibit P-00058 please?

MR. MALAMED: Do we have (inaudible)?

MR. SIMMONS: So this is a report prepared by Manitoba Hydro, and it's called *Review of the Muskrat Falls and Labrador Island HVdc Link and the Isolated Island Options*. So can you scroll down, please, to where we can see the date? And it says October 2012.

Is this a report that you considered in conducting your investigation?

MR. MALAMED: I believe it is.

MR. SIMMONS: Okay.

And what did you understand Manitoba Hydro's role to be here?

MR. MALAMED: I don't know that I can just say what their role is here.

MR. SIMMONS: When did they first become involved in any analysis to do with the options that were under consideration?

MR. MALAMED: I'd have to go back to get you a date.

MR. SIMMONS: I'm gonna suggest they were first hired by the Public Utilities Board, when the Public Utilities Board was tasked with assessing whether the Muskrat Falls Project was

the least-cost option. Does that sound correct to you?

MR. MALAMED: I wouldn't – I'm okay with the answer. I don't know that it's correct; it sounds fine.

MR. SIMMONS: Okay. Maybe after the break we'll go to their first report so we can verify that.

Do you know that Manitoba Hydro prepared reports –

MR. MALAMED: Yes.

MR. SIMMONS: – in 2011 that were submitted to the Public Utilities Board?

MR. MALAMED: I've gotta go look at the dates.

MR. SIMMONS: Yeah.

MR. MALAMED: Would you like me to do that now?

MR. SIMMONS: No, but generally you're aware that Manitoba Hydro prepared reports for the Public Utilities Board.

MR. MALAMED: Yes.

MR. SIMMONS: Not for Nalcor.

MR. MALAMED: Correct.

MR. SIMMONS: And do you know what happened as a result of the Public Utilities Board Review; what decision the Public Utilities Board made concerning the question of whether – of what the least-cost option was?

MR. MALAMED: I do not know the answer to the question.

MR. SIMMONS: Okay.

The Public Utilities Board declined to answer the question and didn't make a decision on what was the least-cost option, does that sound correct?

MR. MALAMED: That sounds correct –

MR. SIMMONS: Okay.

MR. MALAMED: – but that wasn't what I was engaged to look in.

MR. SIMMONS: Okay.

So after that, I'm gonna suggest that this report that we have on the screen now is one that was prepared by Manitoba Hydro for the Government of Newfoundland and Labrador which then engaged it, reformed tasks for it. Does that sound correct?

MR. MALAMED: Yes.

MR. SIMMONS: Okay.

Do you know what they were asked to do by government?

MR. MALAMED: I would need to know the detail of this report.

MR. SIMMONS: Okay.

Was Manitoba Hydro ever retained by Nalcor to do any of these reports?

MR. MALAMED: I'd have to go back to my notes.

MR. SIMMONS: Did you make any assessment of the degree of independence that Manitoba Hydro brought to these – to the preparation of these reports?

MR. MALAMED: I did not make an assessment as to their independence.

MR. SIMMONS: Manitoba Hydro reports, certainly the first ones are quoted in your report, P-00014 – numerous places they're footnoted, correct?

MR. MALAMED: Yes.

MR. SIMMONS: Okay.

Why did you decide to rely on those reports to the extent that you did?

MR. MALAMED: There was no reason for me not to rely on them. And I believe that in the

engagement letter, as well as in the report, have stated that I'm relying that the information that has been provided to me –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – is accurate information.

MR. SIMMONS: Okay.

So you didn't do any kind of assessment or evaluation of Manitoba Hydro's independence to assess how much weight you could put on the conclusions that they made. You accepted what Manitoba Hydro did as being valid, did you?

MR. MALAMED: Correct.

MR. SIMMONS: You did?

MR. MALAMED: Okay.

MR. SIMMONS: All right, I got a little bit sidetracked there. That wasn't the purpose of why I brought this one up at this time.

Let's go, please, to page 17. Scroll up a little bit. Okay, you can stop there.

The reason I've brought this up is that in this section of the report, Manitoba Hydro is presenting information about what the different development options were for which CPW's were prepared, and this is just an opportunity to illustrate what one of these looks like.

There's a diagram there headed Isolated Island option. It's got a green timeline that begins at 2010 and then rolls on to 2065 and the number of boxes that connect to the timeline at different places. Is this something that you would have seen and examined in the course of doing your work?

MR. MALAMED: I believe so.

MR. SIMMONS: Okay.

And we see, for example, the first boxes are 2015, and on the bottom it says new wind 25 megawatts and a top new CT, combustion turbine –

MR. MALAMED: Yes.

MR. SIMMONS: – 50 megawatts.

MR. MALAMED: Yes.

MR. SIMMONS: So does this illustrate to us what one of these generation plans looks like once it's been developed through the system planning process?

MR. MALAMED: I believe –

MR. SIMMONS: It's a timeline that says where different pieces of generation come in at different times.

MR. MALAMED: I believe it is.

MR. SIMMONS: Okay.

So, Commissioner, I don't know if you're planning on a morning break. I'm about to go and start talking about load forecasts.

THE COMMISSIONER: Okay.

MR. SIMMONS: So if this is an appropriate time.

THE COMMISSIONER: Do you feel it's appropriate right now for you to break here?

MR. SIMMONS: Yes, it is.

THE COMMISSIONER: Okay.

So let's take our morning break then for 10 minutes or so.

MR. SIMMONS: Thank you.

THE COMMISSIONER: Okay.

CLERK: All rise.

Recess

THE COMMISSIONER: All right, for those of us who are freezing here, I just wanna let you know we have the heat turned up, so, hopefully, we'll get a little warmer.

Mr. Simmons.

MR. SIMMONS: Thank you, Commissioner.

Mr. Malamed and Mr. Shaffer, we're gonna go on now and deal with some questions concerning the load forecast section of your report. And this is in the – largely the second section. And do I understand correctly, Mr. Malamed, that again this is the area that you dealt with in your evidence in the preparation of the report?

MR. MALAMED: Yes, and before we begin, can I just – I just wanted to point out for you, you were asking about documents relied upon, and if I could just put you to page 6 of the report.

MR. SIMMONS: Yes.

MR. MALAMED: And some of the documents you asked about, the dates are here. I don't know if you need me to read them out?

MR. SIMMONS: Sure, if you can just identify what some of these important documents are and where the dates are in the sequence of events.

MR. MALAMED: Navigant Consulting, September 14, 2011 –

MR. SIMMONS: Yes.

MR. MALAMED: – issued a report entitled Independent Supply Decision Review.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: On June 17, 2011 the Government of Newfoundland and Labrador directed the Newfoundland and Labrador Board of Commissioners of Public Utilities to review and report on whether the Muskrat Falls Project would represent the least-cost option for Newfoundland and Labrador as opposed to the Isolated Island Option. The PUB issued its report to government on March 30, 2012, the PUB report to government. As part of the PUB review, Nalcor issued a submission in November 2011, Nalcor PUB submission.

As part of the PUB review, the PUB engaged Manitoba Hydro International as its expert consultant. MHI issued a report dated January 2012 titled: Report of Two Generation Expansion Alternatives for the Island Interconnected Electrical System.

Subsequent to the PUB Review, MHI was engaged by the Government of Newfoundland and Labrador to provide an independent assessment of the two generation supply options. MHI issued its report titled: Review of the Muskrat Falls and Labrador-Island HVdc Link in October 2012

MR. SIMMONS: Okay, good, thank you.

So these are events and facts you were aware of at the time the report was prepared, I presume.

MR. MALAMED: That's right.

MR. SIMMONS: Yup. Okay. Thank you very much.

So, Mr. Malamed, can you describe to me what the approach was that was taken by Grant Thornton in assessing the load forecasting methodology and reports prepared by Nalcor Energy for use in this – in the sanction decision?

MR. MALAMED: Sure.

Really, we gain an understanding of the process, gain an understanding of the type of modelling that was used, the assumptions that were used to get to the load forecast and the plan.

MR. SIMMONS: Okay, and what particular expertise or resources did you rely upon in order to do that work? Specifically related to the load forecasting evaluation.

MR. MALAMED: So, we were not engaged to investigate and recalculate the load forecast. That's not part of our mandate, I don't want to mislead you by thinking that's what we did.

MR. SIMMONS: Good, thank you.

MR. MALAMED: Our role was to get an understanding of what was done –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – and how it was assessed –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – and report on that.

MR. SIMMONS: Right, okay. And did you have any resources available to you, any people who had prior experience with load forecasting that could assist you in understanding how these load forecasts were prepared?

MR. MALAMED: People on our team have experience with dealing with load forecasting, not creating load forecasts.

MR. SIMMONS: Yes, okay. And who on your team had that experience?

MR. MALAMED: So one person for example would be Steve Power

MR. SIMMONS: Yes.

MR. MALAMED: A senior manager would be Angie Brown.

MR. SIMMONS: Yes. And those are people who are at the St. John's office –

MR. MALAMED: That's correct.

MR. SIMMONS: – of at Grant Thornton, are they?

MR. MALAMED: That's correct.

MR. SIMMONS: And are those people who are involved in doing this work as part of Grant Thornton's retainer with the Public Utilities Board?

MR. MALAMED: Correct.

MR. SIMMONS: Yes, okay.

Did you use any external consultants of any type in assessing the – how the load forecast was prepared and in gathering the facts about the load forecast?

MR. MALAMED: Just to gain an understanding, again, of the facts.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: We also spoke to Nalcor's planner.

MR. SIMMONS: Yes, okay.

Did you consult any other electrical utilities in Canada?

MR. MALAMED: No.

MR. SIMMONS: Did you look for any experts in the load-casting field outside of utilities either in Canada or the United States?

MR. MALAMED: No.

MR. SIMMONS: You've referred to the work done by Manitoba Hydro International, which I think in both the reports that you referred to a moment ago, the initial report done by the PUB – for the PUB, and the later one done for the Government of Newfoundland and Labrador, there was assessment in those reports of the load forecasting methodology and the results of the load forecasting, is that correct?

MR. MALAMED: I believe.

MR. SIMMONS: And did you utilize that information from Manitoba Hydro International in preparing your report –

MR. MALAMED: Yes.

MR. SIMMONS: – that you delivered to the Commission?

Okay, let's go to Exhibit P-00058, please.

So this is the one we brought up before, if we could go back to page7, Madam Clerk, please.

So this is where the executive summary of the MHI report, this is the one done in October 2012. Do you know what the timing of this report, October 2012 related to the Decision Gate 3 decision to sanction the Muskrat Falls Project?

MR. MALAMED: I believe it did.

MR. SIMMONS: Yes, and it's – the decision to sanction was December. This report is October. So this is just two months before the sanction decision.

MR. MALAMED: Correct.

MR. SIMMONS: From your review of this report, would you – do you understand that this report was actually commissioned for the purpose of evaluation of the sanction decision?

MR. MALAMED: This was – whose decision? I apologize.

MR. SIMMONS: Well, let's look at the first paragraph here on this page under executive summary.

MR. MALAMED: Right, because I just want to clarify who you're – if you're saying the government. If I were to just read it to you, the Government of Newfoundland and Labrador retained Manitoba Hydro International.

MR. SIMMONS: Yes.

MR. MALAMED: So it would be – the client here is the Government of Newfoundland and Labrador.

MR. SIMMONS: Correct.

MR. MALAMED: Yes.

MR. SIMMONS: Yeah.

Who do you understand actually sanctioned the project?

MR. MALAMED: Who signs off for sanctioning or who sanctions the project?

MR. SIMMONS: Who sanctions it? Who makes the final decision that it goes ahead?

MR. MALAMED: The province.

MR. SIMMONS: Yes.

That's your answer is it?

MR. MALAMED: Yes.

MR. SIMMONS: Yes, okay, good, yeah.

And Nalcor made a recommendation but the province decides. Is that your understanding?

MR. MALAMED: That is my understanding.

MR. SIMMONS: Yes, okay, good.

So, the first paragraph here: "The Government of Newfoundland and Labrador, retained Manitoba Hydro International Ltd. (MHI) to provide an independent assessment of two generation supply options, as prepared by Nalcor Energy" … "in preparation for Decision Gate 3, for the future supply of electricity to the Island of Newfoundland."

And from our discussion earlier this morning, I don't think you challenged the independence of MHI to do this work, do you?

MR. MALAMED: Correct.

MR. SIMMONS: Okay.

"MHI was asked to review the work completed by Nalcor Energy since Decision Gate 2 in preparation for Decision Gate 3 …."

Can you tell me what the difference is between Decision Gate 2 and Decision Gate 3, or your understanding of it?

MR. MALAMED: The Decision Gate 2 – as both options now have been selected which options, where the financing or the financial analysis will begin, and between 2 to 3 it really is getting the financial analysis in place, getting the financing in place, et cetera.

MR. SIMMONS: Okay. Was all the financing in place at Decision Gate 3?

MR. MALAMED: No.

MR. SIMMONS: Okay. All right.

So, "MHI was asked to review the work completed by Nalcor Energy since Decision Gate 2 in preparation for Decision Gate 3 and to determine which option is the least cost based on the updated cost and technical data provided by Nalcor. MHI was … asked to complete a reasonableness assessment on all inputs into that analysis. The least cost metric for each option was computed by application of the cumulative present worth … method."

So would you agree with me that MHI was tasked by the Government of Newfoundland and

Labrador of reviewing the cumulative present worth work that had been done by Nalcor and assessing the inputs into that work for the purpose of seeing if that was a reasonable basis onto which to make a decision to sanction this project or not?

MR. MALAMED: On the – just to clarify, are you saying on the base – on the amounts that were selected or on the methodology that was used?

MR. SIMMONS: Both.

MR. MALAMED: I believe on the methodology that was used I can say, yes.

MR. SIMMONS: Yes.

MR. MALAMED: On the figures that were used, for example load forecast, I don't know that that was done.

MR. SIMMONS: Okay.

What about on the reasonableness of the inputs into the process, load forecast being one of them?

MR. MALAMED: I understand that the reasonableness was looked at.

MR. SIMMONS: By MHI?

MR. MALAMED: Yes.

MR. SIMMONS: Yes. Okay.

The next paragraph they endorse the CPW approach as "an acceptable method by which to measure the present worth of alternative options."

MR. MALAMED: Yes.

MR. SIMMONS: And you don't disagree with that. I believe you said in your direct that you support the cumulative present worth as being appropriate methodology to use for this evaluation.

MR. MALAMED: Yes, we said that and it's in the report.

MR. SIMMONS: Good.

Page 8, please, next page starting at the end of the second line: "To perform this review, MHI assembled a team of specialists with expertise in load forecasting, risk analysis, hydroelectric generation, HVdc engineering, system planning, and financial analysis."

How – can you compare for me the team that MHI say they assembled here with the team that you assembled in order to discharge your mandate? How does, how would you compare or contrast the two?

MR. MALAMED: Our team didn't assess it, our team collected the facts and just reported what the facts were.

MR. SIMMONS: Mm-hmm.

So your team didn't reflect the same mix of specialized expertise that MHI brought to this review?

MR. MALAMED: We weren't engaged to do that.

MR. SIMMONS: Yeah, but the answer is no, it didn't reflect the same mix.

MR. MALAMED: The answer is no.

MR. SIMMONS: Scroll down on page 8, please, to – there's Key Findings there. Please scroll down to where Load Forecast is at the top of the page. So I'm just going to read the summary of the key findings of MHI in relation to the load forecast.

"The Load Forecast for the Interconnected Island option showed an increase in domestic load for the period to 2029, which was expected due to higher economic forecasts for personal disposable income and population. However, the general service sectors show a decrease, which would appear to be conservative as it normally mirrors domestic load. The industrial load does not include any new accounts over the entire time-span, which is very likely conservative. MHI finds that the Load Forecast for the Interconnected Island option is well founded and appropriate as an input into the Decision Gate 3 process."

So from what I take out of your evidence, Mr. Malamed, is that what MHI did here in assessing whether the load forecast was well founded and appropriate as an input, that wasn't something that you were asked to do, to second-guess that assessment. Is that correct?

MR. MALAMED: It wasn't, but just to clarify –

MR. SIMMONS: Yes.

MR. MALAMED: – and I can go and check during break – I believe the assessment was on the methodology and not necessarily on the figures, the dollars –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – or the amounts.

MR. SIMMONS: Okay.

So that's MHI's assessment but my question was: Grant Thornton was not tasked to do what MHI says it did here.

MR. MALAMED: To look at the methodology.

MR. SIMMONS: Well, they say that the load forecast is well founded and appropriate as an input. That says – I read that as saying it's more than just looking at the methodology, and we'll go and look at some of it now in a minute.

MR. MALAMED: I'm happy at break to go and clarify that for you.

MR. SIMMONS: Okay, all right.

Now, if we look at the earlier part of that paragraph – and you can review it again if you want to – what I take out of this is that MHI's conclusion was that the load forecast that was being used for the Isolated Island case was conservative.

Do you agree that that is the conclusion they are expressing here in this paragraph?

MR. MALAMED: I don't think that I see the –

MR. SIMMONS: Well, let's start in the third line: However –

MR. MALAMED: I see that they're saying that the general service sector showed a decrease, which would appear to be conservative, as it normally mirrors domestic load.

MR. SIMMONS: Yes. Okay.

MR. MALAMED: And your question is I'm sorry?

MR. SIMMONS: And it says: "The industrial load does not include any new accounts over the entire time-span, which is very likely conservative."

MR. MALAMED: Right.

MR. SIMMONS: Right.

So maybe we should back up for just a second and say: Included in the load forecast there are different customer sectors and I think you talked about this before. There are residential customers or domestic customers; there are what's called general service customers. Do you know who those customers are? What kind of mix they are?

MR. MALAMED: They'd be, for example, a store.

MR. SIMMONS: Okay.

So it's a wide – would I be correct, it's a wide range of things in Newfoundland and Labrador? It could be a retail store. It could a machine shop. It could be a restaurant. It could be any variety of – a large variety of businesses, other than domestic households and specific industrial customers?

MR. MALAMED: Yes.

MR. SIMMONS: Right?

And then the industrial customers in Newfoundland and Labrador, at the moment there's four, right –

MR. MALAMED: Yes.

MR. SIMMONS: – that fit into that category, that's all, right?

So I'll ask you again: Reading that conclusion from MHI, would you agree with me that they have assessed the general-service portion of the forecast as conservative and the industrial-load portion as likely conservative, or the load forecast that they were considering?

MR. MALAMED: I'm seeing that they're saying: which would appear, which is not necessarily conclusive but they're saying that it appears that that is correct.

MR. SIMMONS: Right.

Is there anything in this paragraph that suggests that MHI concluded that the load forecast used in the Isolated Island case was overstated?

MR. MALAMED: No.

MR. SIMMONS: If anything, they're expressing the possibility that it was understated?

MR. MALAMED: Possibly, yes.

MR. SIMMONS: Okay.

If it was understated, what would the effect on the CPW for the Isolated Island Option be?

MR. MALAMED: If it was understated, it would understate the CPW.

MR. SIMMONS: Right. So if it is, in fact, understated and if it was corrected to a proper level, the CPW for Isolated Island would go up.

MR. MALAMED: If everything else remaining the same, yes.

MR. SIMMONS: Yes, yeah. Okay.

Now, we can go to it if we need to, but from your recollection of the report, did they come to any different conclusion, MHI, about the load forecast that was used for the Interconnected Island Option?

MR. MALAMED: Could you tell me in my report where you're referring to?

MR. SIMMONS: Okay.

MR. MALAMED: Please.

MR. SIMMONS: I'll take that one to the break, how about that?

MR. MALAMED: Fair enough.

MR. SIMMONS: Okay.

Now, in your report you've identified a number of – made a number of comments on particular inputs into the load forecast and you've summarized those in the presentation that you made yesterday.

MR. MALAMED: Yes.

MR. SIMMONS: So I want to go over some of those with you.

MR. MALAMED: Yes.

MR. SIMMONS: And the first one is the comments in the report on the historical accuracy of the reports. So can we have Exhibit P-00014, please, and we're going to go to page 35.

So starting with – at the beginning of this section, which is line 2, you've written that: "Determining load projections is a difficult task as variations between actuals and forecasted results must be expected."

So the first point is you do acknowledge that a forecast is a forecast. There will almost inevitably be some variations in actual results compared to what has been forecast?

MR. MALAMED: Correct.

MR. SIMMONS: "During DG2 phase, MHI examined the accuracy of the planning load forecasts" provided "by NLH for the 10 year period 2001 to 2010 to assess if Nalcor's load forecasts were 'conducted with due diligence, skill, and care consistent with acceptable utility practices.'"

Do you know what MHI's conclusion – overall conclusion was regarding the quality of the load forecasting done by Nalcor?

MR. MALAMED: I'd have to go back and look.

MR. SIMMONS: Okay.

And then you make – in section 1.4.1 there are two bullets there for "Findings and Observations." The first one says: "Ten year history average variance of 8.9% overstated load forecast (including all customers)."

So you've made that as a factual statement. Can you explain to me what that means?

MR. MALAMED: That means when you compare what actually happened to what was projected to happen.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: And you add all the customers, all those categories that you named, the three categories that you named together. That means that your projection was 8.9 per cent greater – sorry, your actual was 8.9 per cent greater than what you had projected.

MR. SIMMONS: Okay.

Did MHI express what was an acceptable margin of error for load forecasting?

MR. MALAMED: I'd have to go back and look.

MR. SIMMONS: Okay.

The next bullet says: "Ten year history average variance by customer (i.e. domestic, general service, industrial)" – the three categories we spoke of – "had a range between -5% (domestic was more than forecast) to 61.1% (industrial was less than forecast)."

Did you do any evaluation or – of whether a minus 5 per cent variance was good, bad, acceptable, unacceptable within industry standard, outside industry standard?

MR. MALAMED: I don't believe so.

MR. SIMMONS: And was that minus 5 per cent over a 10-year period?

MR. MALAMED: Yes.

MR. SIMMONS: What kind of analysis did you do about the 61.1 per cent variance for industrial load?

MR. MALAMED: I've already said that we didn't do any.

MR. SIMMONS: So this is an observation that that variance was there without any work done to probe into what the cause of that variance was or what explanations there might be for it. Right.

From this, do you express any conclusions about the reliability of the load forecast that was used to make the DG3 decision in 2012?

MR. MALAMED: No.

MR. SIMMONS: You do not.

If we go down to line 17 in your report there. The 2012 PLF, is that planning load forecast?

MR. MALAMED: Mm-hmm.

MR. SIMMONS: "The 2012 PLF for the Interconnected Island Option on average compared to actuals is approximately 1% lower per year than forecasted. This variance falls in line with MHI's recommended 1% variance per year from forecast."

So you have stated here that MHI felt that a 1 percent variance was acceptable.

MR. MALAMED: Yes.

MR. SIMMONS: And you've said here that the 2012 planning load forecast – is that the one that was used for the DG3 decision?

MR. MALAMED: Yes.

MR. SIMMONS: And that on average, compared to actuals, it is in fact approximately only 1 percent variance.

MR. MALAMED: Right. But I'm not saying this is what – the information is that I've observed.

MR. SIMMONS: Okay. From MHI?

MR. MALAMED: Correct.

MR. SIMMONS: Right.

And did you have any concern about the reliability of those observations made by MHI?

MR. MALAMED: Yeah. As I previously said, I'm taking them to be reliable.

MR. SIMMONS: Let's go to MHI's October 2012 report, please. Exhibit P-00058, page 24.

CLERK: Page?

MR. SIMMONS: Twenty-four, please.

Okay. So you can stop there, please.

So this is the section in the report called: "Forecast Accuracy." And this is where the authors of the MHI report state that: "A reasonable performance measure for forecast accuracy is a maximum forecast deviation of ± 1% per year. A 10-year-old forecast, for example, should be within ± 10% of the actual energy load observed."

So this is the source for the information that you carried forward into your report, is it?

MR. MALAMED: I believe it is.

MR. SIMMONS: Yeah.

Scroll down a little bit, please; a little more. Okay, you can stop there.

There's a paragraph there under the table, and I'll just read part of that. "Past domestic forecasts have been reasonable, but have under-predicted future energy needs at a rate of 1% per year into the future. The domestic forecast under-predicted energy consumption in 63 of the 65 cases analysed. This under-prediction probably results from conservative assumptions for key economic variables and not from the model specification."

So I'll stop there. That's dealing with domestic forecasts.

So MHI's conclusion was that, in the past, domestic forecast for residential use has been underpredicting, within the acceptable range, but underpredicting by 1 per cent.

If the forecast used for the sanction decision at DG3 had underpredicted residential growth by 1 per cent, what effect would that have had on the Isolated Island CPW?

MR. MALAMED: I can't tell you. I can –

MR. SIMMONS: Oh, which direction –

MR. MALAMED: I can't tell –

MR. SIMMONS: Which direction –

MR. MALAMED: – you with certainty, but all things being equal –

MR. SIMMONS: Yes.

MR. MALAMED: – if the use of oil went up, there was more need – that the price would go up.

MR. SIMMONS: Okay. So more growth than forecast in the residential sector would tend to increase the CPW number for the Isolated Island Option?

MR. MALAMED: Yes.

MR. SIMMONS: Yes. Okay. So –

MR. MALAMED: All things –

MR. SIMMONS: All things being equal, yes. Yeah. I understood.

So the last line there says: "Past forecasts for the general service sector have produced remarkably good results." So did you have any reason to question that finding by MHI?

MR. MALAMED: No.

MR. SIMMONS: Okay.

And then the next paragraph deals with the industrial sector, which is a little more complicated.

So what do you understand in other provinces – so let's take larger provinces, such as Ontario.

How large would the industrial electricity sector be in Ontario, compared to Newfoundland and Labrador?

MR. MALAMED: I don't know. I'm not an expert on that area.

MR. SIMMONS: Okay.

Has anyone, as part of your team, done that kind of comparison to compare how industrial load forecasting is done based on the limited number of industrial customers in Newfoundland and Labrador versus Ontario or Quebec or Alberta, where there would be many more.

MR. MALAMED: No, we were not engaged to do that as part of our mandate.

MR. SIMMONS: Mm-hmm.

But you did have to understand how the industrial load forecasting was done in this province, correct?

MR. MALAMED: That's correct.

MR. SIMMONS: How did you go about doing that? Learning about how the industrial load forecasting was done?

MR. MALAMED: Through the interview process –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – where we interviewed individuals at Nalcor –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – who were part of the process, who explained to us the process –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – and, as well, explained to us the software that was used.

MR. SIMMONS: Yup.

MR. MALAMED: That software that you mentioned: Strategist.

MR. SIMMONS: Mm-hmm. Okay.

Now, that would be Mr. Stratton and Mr. Moulton?

MR. MALAMED: I believe so. I'd have to go check, again, my notes for –

MR. SIMMONS: Okay.

MR. MALAMED: – the names.

MR. SIMMONS: So once you'd had an explanation of how Nalcor did it, did you do anything to compare how Nalcor did it to any other type of standard? Or any – or someone else's practice.

MR. MALAMED: We – I did not recalculate it, but I saw what was done –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – or I looked at what was done.

MR. SIMMONS: Okay.

So part of what you saw were – you saw the types of inputs that were used into the load forecast and considerations that went into the load forecast –

MR. MALAMED: Correct.

MR. SIMMONS: – is that correct? Okay.

And in your report, in your presentation, you've commented on some of those things, such as conservation demand management, price elasticity, correct?

MR. MALAMED: Correct.

MR. SIMMONS: Yeah, you have commented on them –

MR. MALAMED: Yes.

MR. SIMMONS: – and made observations about them.

MR. MALAMED: Yes.

MR. SIMMONS: In order to decide what comments to make and what observations to make, what expertise, other than your general investigative and forensic accountant inquiring skills – what expertise other than that did you bring to bear in order to determine what you should point out as being notable facts about the load forecast?

MR. MALAMED: Similar to other investigations, I would gain an understanding of –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – the discipline of the industry –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – of what it was I was seeing, and I would identify my observations from that process. In terms of having an expert on the team to identify which areas to look at, it wasn't a deep dive into how the numbers were put together. That wasn't what we were engaged to do.

MR. SIMMONS: Mm-hmm. Okay.

So when, in your report, you've made comments about things like conservation demand management, price elasticity, reliance on economic data, is what you're really doing raising questions but not really trying to answer them and leaving it for others at the Commission to explore that further and see –

MR. MALAMED: They –

MR. SIMMONS: – and explore those issues?

MR. MALAMED: What would've been brought up are our findings –

MR. SIMMONS: Findings.

MR. MALAMED: – and observations. They're not conclusions.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: They can be looked into further.

MR. SIMMONS: Right.

So by findings you mean factual statements about what you discovered –

MR. MALAMED: Correct.

MR. SIMMONS: – that's what you mean?

MR. MALAMED: Correct.

MR. SIMMONS: Okay.

Without evaluation as to whether it's good, bad, a problem or not?

MR. MALAMED: Correct.

MR. SIMMONS: Okay.

So we were looking at the paragraph in the MHI October 2012 report dealing with MHI's comments on the industrial sector forecast, and this is where they say: "In the past, the industrial sector forecast has not performed well. The assumption of continued operation of the pulp and paper mills at Stephenville and Grand Falls was overly optimistic, causing problems that have affected the industrial forecast accuracy. The total Island energy forecast is prepared by summing the four sector forecasts, and consequently, the industrial forecast has effected the results for total Island energy requirements."

And then these – they have a table there, and the last sentence: "In fact, the Island energy requirements would be under-forecast if the industrial forecast was accurate."

So I'm going to suggest that what MHI identified was that the only source for inaccuracy in the industrial load forecast was the fact that two paper mills had closed in this province during the time that forecasts were under review. Was that consistent with your findings?

MR. MALAMED: I can't say for sure that was the only reason. I believe that was part of the reason.

MR. SIMMONS: What other reasons did you identify?

MR. MALAMED: I'd have to go back to my notes, but I seem to recall that the industrial customer wasn't – that input from the industrial customer wasn't collected or – you know, I'd rather to just go look at my notes and come back if I have a comment.

MR. SIMMONS: Is there anything in your report about that?

MR. MALAMED: I don't believe there is, so it could be a mistake of mine.

MR. SIMMONS: Okay, 'cause my understanding is that two paper mills closed in this province –

MR. MALAMED: Mm-hmm.

MR. SIMMONS: – and as we already said right now, there's only four industrial customers in the province. And the paper mill would either be using electricity or not using electricity, so that the closure of one paper mill in this environment would have a dramatic effect on the industrial load. Do you understand that?

MR. MALAMED: I do.

MR. SIMMONS: Whereas, in a province like Ontario, I'll give you a conceptual example, just as an illustration. Ontario has a large auto industry with many auto plants. If there were a forecast for a general decline in the automobile industry, some plants might stay open, some might close, but on average, there'd be a decline which is relatively easy to build into a load forecast when it's predicted. Do you see how that would work?

MR. MALAMED: Yes.

MR. SIMMONS: Okay. But in a province such as this, currently with four industrial customers, it's impossible to accurately predict the future of any one customer in any kind of statistic – statistical way or in any industry trend way. Do you see the difficulty with doing that?

MR. MALAMED: I do see the difficulty. I believe that you could probably go speak to them.

MR. SIMMONS: You'd go speak to them? What do you mean by that?

MR. MALAMED: You could go speak to the industrial customer. You said there's four of them.

MR. SIMMONS: Mm-hmm. Okay, to do what? What would you speak to them about?

MR. MALAMED: To gain an understanding if things were changing in any way that they saw.

MR. SIMMONS: So rather than industry forecasts, you're suggesting that it would be more appropriate to go directly to the customers and find out directly from them what their forecasts were for their energy use?

MR. MALAMED: I'm not an expert –

MR. SIMMONS: No.

MR. MALAMED: – but you did say that there's only four customers.

MR. SIMMONS: Right.

Okay, the next page – page 25 please, of the MHI report from October 2012 – P-00058. Okay, scroll down please. Okay, back up a little bit – okay, stop there. So this is the summary page from – summary paragraphs from MHI's conclusions regarding the assessment of the load forecast. If you go to the second paragraph there, beginning regression models?

MR. MALAMED: Mm-hmm.

MR. SIMMONS: So it says: "Regression models for the general service sector are well founded and produce extremely good results."

So from your investigation, did you understand what use Nalcor Energy made of regression modelling in its load forecasting methodology?

MR. MALAMED: I would – a conceptual idea of what linear regression is, yes –

MR. SIMMONS: Yes, okay can you just –

MR. MALAMED: – and how it was –

MR. SIMMONS: – give me an idea of –

MR. MALAMED: Sure.

MR. SIMMONS: – how that would work?

MR. MALAMED: Linear regression would take points on a chart –

MR. SIMMONS: Yes.

MR. MALAMED: – you'd draw a straight line through that –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – which would give you a prediction in terms of how were – things were going to be forecast or grow.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: And the further – or the closer – the further away – the closer – sorry, the closer the dots are to the line –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – the more accurate the forecast is to the growth.

MR. SIMMONS: Okay.

So would you agree with me that it's a statistical method of validating a load forecast? It relies on data. It uses statistical techniques –

MR. MALAMED: So I'm not a mathematician to say that –

MR. SIMMONS: No.

MR. MALAMED: – it's called a statistical technique, but it's a mathematical technique that is used.

MR. SIMMONS: Okay, all right.

And you know anything about how common or uncommon it is to use those sorts of approaches in load forecasting?

MR. MALAMED: Again, I wouldn't want to guess a number for you.

MR. SIMMONS: Okay.

So in that second paragraph, the last sentence there says: "MHI considers the lower forecast for commercial business investment conservative, thus producing a conservative forecast for the general service sector."

So if their conclusion is correct here, and that the forecast for the general service sector, or part of it, is conservative, again, would that mean that the CPW would be lower rather than higher for the Isolated Island Option?

MR. MALAMED: I understand your question.

MR. SIMMONS: Mmm.

MR. MALAMED: I'm just not – I think the – can you just clarify your question? I just want to answer the right question, I'm sorry.

MR. SIMMONS: When MHI says that – they're making a comment here that there is a conservative forecast for the general service sector. I take – maybe I'm – my understanding is conservative would mean low. A low forecast, as opposed to an optimistic or higher forecast for load growth.

MR. MALAMED: The answer to your question, though, if – it said that it's conservative –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – just because it said it's conservative would not necessarily change what happened. If you're saying to me that there was actually more used –

MR. SIMMONS: Yes.

MR. MALAMED: – then as I've said before –

MR. SIMMONS: Right.

MR. MALAMED: – it would mean more fuel and a higher price.

MR. SIMMONS: Okay.

Scroll down please, Madam Clerk, a little more. Okay. A little further. Okay, you can stop there, please.

The paragraph at the bottom of page 25 over to 26 deals with the industrial forecast again, and it says the consumer-specific methodology "… used to prepare the industrial forecast is reasonable. With the current industrial forecast the 2012 Interconnected Island option forecast should perform well over the next 5 to 10 years. In the longer term the potential for new industrial loads would increase the likelihood of under-predicting future industrial energy requirements. With potential reductions in industrial load, the 2012 Interconnected Island Option forecast will over-predict energy requirements in the next five to ten years."

So they're saying if the – if loads are actually higher then there's an under-prediction; if loads are actually lower there's an over-prediction. But it then goes on to say, "In the longer term, the Corner Brook mill load could be replaced by new potential industrial loads. The 2012 industrial forecast does not include any potential increase for new industrial customers after the expansion to Vale is completed. The industrial forecast should contain some allocation for potential future industrial loads."

First of all, can I ask you if in the course of your investigation you considered the Corner Brook pulp and paper mill, and where it figured into the industrial load forecasts?

MR. MALAMED: We did not calculate – do any re-calculation of that.

MR. SIMMONS: Did you consider the future of the Corner Brook mill; whether it would continue in operation or not, in any assessment that you did?

MR. MALAMED: We didn't do any reassessments so whatever – whatever the facts were, is what was used.

MR. SIMMONS: Okay.

So when MHI states that in the longer term the Corner Brook mill load could be replaced by new potential industrial loads, you don't have any reason to question that evaluation by MHI.

MR. MALAMED: It could be.

MR. SIMMONS: Pardon me?

MR. MALAMED: No, it could be.

MR. SIMMONS: Yup. And when they say the industrial forecast should contain some allocation for future industrial loads, you don't have any reason to question that either.

MR. MALAMED: Correct.

MR. SIMMONS: Now let's go to your presentation; Exhibit P-00135, please, slide 28?

MR. MALAMED: Slide – I'm sorry?

MR. SIMMONS: Slide 28.

So this is the slide in the presentation that deals with the history of load forecasting?

MR. MALAMED: Yes.

MR. SIMMONS: This kind of comes back to the – where we started with this discussion.

And it says, Nalcor's prior load forecasts were subject to volatility. What do you mean by that?

MR. MALAMED: That they were different than what was forecast.

MR. SIMMONS: Okay.

You say the 10-year history of overstating load forecasts by an average of 8.9 per cent for all customers.

So is that the evidence you present for your conclusion that the load forecasts were subject to volatility?

MR. MALAMED: They – it's not a conclusion – it's just load forecast is subject to volatility and here are the findings.

MR. SIMMONS: Okay.

Volatility sounds bad, doesn't it?
MR. MALAMED: I don't know if it sounds bad.

MR. SIMMONS: Okay.

So that 8.9 per cent – we've already seen that that is within the acceptable range identified as MHI of 1 per cent, plus or minus, per year, 10 per cent, plus or minus, over ten years – correct?

MR. MALAMED: Correct.

MR. SIMMONS: So, is that – and maybe that is some volatility in that it's change up and down.

To me, volatility suggests dramatic changes, problematic changes, unpredictable changes. Is that consistent with what we've seen in MHI's report about the performance history of Nalcor's load forecasting?

MR. MALAMED: Again, now I'm just going from memory – I believe that there was something that we spoke – that you read to me about predictability or unpredictability, so I would need to go back to that section to be able to answer that question.

MR. SIMMONS: I presume we can find it in your report if it's there, can we?

MR. MALAMED: Sure.

MR. SIMMONS: Well, can we or not? I mean, did it find its way into your report? If there's something here that is other than these two bullets you've got that supports the proposition that Nalcor load forecasts were volatile, presumably anything that you've got to support that we will –

MR. MALAMED: No, these are –

MR. SIMMONS: – find in your report.

MR. MALAMED: – these are the two points.

MR. SIMMONS: These are the two points.

Okay, so that's – the first one is the 8.9 per cent over 10 years.

MR. MALAMED: Okay.

MR. SIMMONS: Now, the second one is 10-year history of load forecast variances from minus 5 per cent to plus 60. The minus 5 is the general service customers, correct?

MR. MALAMED: I believe so.

MR. SIMMONS: Right.

Minus 5 is half a per cent variance a year? Correct?

MR. MALAMED: Correct.

MR. SIMMONS: Right.

MHI says 1 per cent variance a year is acceptable. Is there anything unacceptable about a minus 5 variance, over 10 years, for general service customers?

MR. MALAMED: Nope.

MR. SIMMONS: The plus 60 is the industrial customers, isn't it?

MR. MALAMED: Yes.

MR. SIMMONS: Is that entirely accounted for by the closure of the Stephenville paper mill and the Grand Falls paper mill?

MR. MALAMED: I believe it is.

MR. SIMMONS: Okay.

Did you make any assessment to determine whether or not those mill closures should have been predicted by Nalcor's load forecasters and factored into their forecast?

MR. MALAMED: No, that was not part of our engagement.

MR. SIMMONS: Okay.

Thank you.

MR. MALAMED: But I want to just – I do want to just go back for one second –

MR. SIMMONS: Sure.

MR. MALAMED: – where we spoke about load forecast. A 1 per cent change to load forecast – it could be significant.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: I mean, I'd have to go calculate that.

MR. SIMMONS: Right – yeah, it has an effect, certainly. That's right.

Okay, let's talk about conservation and demand management for a moment.

MR. MALAMED: Okay.

MR. SIMMONS: This is in your report, Exhibit P-00014, page 37, please.

And the conclusion part there is at lines 25 and 26. So after the factual recount of the evidence that you've gathered, this statement is: "CDM incentive based programs appears not to have been included as a factor in load forecasting, either as a load reduction or as a resource option." As a result, the load forecast may have been overstated.

So first of all, what is a CDM program – CDM incentive?

MR. MALAMED: What I'd said previously in my testimony – the easiest way for me to explain it would be something that reduces the use of energy; for example, a smart thermostat.

MR. SIMMONS: Mm-hmm. Okay.

Do you know what CDM programs have been in place up to 2012 in Newfoundland and Labrador?

MR. MALAMED: I do not.

MR. SIMMONS: Okay.

Do you know what results of CDM initiatives, if any, had been in Newfoundland and Labrador up to 2012?

MR. MALAMED: I do not.

MR. SIMMONS: Okay.

Now, when you say that CDM incentive-based programs appear not to have been included as a factor in load forecasting: What did you base that conclusion on or that finding – I'll say – on?

MR. MALAMED: I believe it was from an interview –

MR. SIMMONS: Okay.

MR. MALAMED: – with an individual at Nalcor.

MR. SIMMONS: Okay.

Can we go, please, to – I think it's Exhibit P-00049? Please.

Yes. Now, we haven't looked at this one yet, Mr. Malamed.

This is another Manitoba Hydro International report, it's titled: *Report on Two Generation Expansion Alternatives for the Island Interconnected Electrical System*, volume 2.

MR. MALAMED: Yes.

MR. SIMMONS: And you referred me, after we came back from the break, to reports that are listed in the front of your report.

MR. MALAMED: Right.

MR. SIMMONS: Is this one of those?

MR. MALAMED: I believe it is.

MR. SIMMONS: Yeah. Is this the one that was done for the Public Utilities Board?

MR. MALAMED: I believe it was.

MR. SIMMONS: Okay.

Let's go to page 35, please. Scroll down. Scroll down further. Okay, you can stop there.

So as part of its work for the Public Utilities Board, do you know that Manitoba Hydro International did look at the issue of whether conservation and demand management found its way into the Nalcor load forecasting?

MR. MALAMED: Could you ask your question again?

MR. SIMMONS: From your – your investigation included studying this report, correct? From doing that, do you know whether Manitoba Hydro International assessed this question of whether conservation demand management finds its way into the load forecast?

MR. MALAMED: I do know that Manitoba Hydro International stated that CM should be included as a supply-side option.

MR. SIMMONS: Okay.

So let's look at the first paragraph here under section 1.8, Conservation in the Load Forecast: "It should be noted that the domestic forecast does not include any specific, exogenous adjustment for specific Conservation Demand Management … programs. The NLH method of capturing and estimating CDM effects is through the technological change variable contained in the regression equations."

Now, this is a bit beyond my understanding of it, but there's a reference here to their – to NLH having a method of accounting for conservation and demand management. It wasn't a specific exogenous adjustment, whatever that is, but it's a technological change variable. So is that something that you considered when preparing your report?

MR. MALAMED: I'd like to take you to page 37, line 14.

MR. SIMMONS: Of …?

MR. MALAMED: Of my report.

MR. SIMMONS: Okay. Okay.

MR. MALAMED: "Nalcor took into account technological improvements that reduce energy demands in their econometric modelling technique. CDM incentive based programs were not factored into the load forecast at DG2. To date we have not been provided with any support which demonstrates CDM incentive programs were incorporated into the load forecast used in DG3 …."

MR. SIMMONS: Okay, so …

UNIDENTIFIED MALE SPEAKER: Excuse me, what page?

MR. MALAMED: Thirty-seven.

MR. SIMMONS: Thirty-seven.

MR. MALAMED: I can read that again.

MR. SIMMONS: So we've seen from the reference I brought you to, to the Manitoba Hydro report that Manitoba Hydro seemed to regard this technological factor as being a method of actually accounting for conservation demand management in the load forecast. Did you understand that when you read the report?

MR. MALAMED: I do understand that and I bring you back to, to date we haven't been provided with any support which demonstrates CDM incentives were incorporated into that.

MR. SIMMONS: If it forms part of the technological-change variable in the regression equations, whatever, would that not be a means of incorporating it into the load forecast?

MR. MALAMED: Maybe, it just needed to be shown to us.

MR. SIMMONS: Right.

So is that something that you investigated any further in order to determine if, in fact, that's a means of incorporating CDM initiatives into the load forecast?

MR. MALAMED: No. Again, we just made the observations from our findings.

MR. SIMMONS: Okay.

So your observation, I guess, is consistent with what MHI said in that there's not an explicit variable there. Correct?

MR. MALAMED: Correct.

MR. SIMMONS: Right. And that's – so do we take it in this case that as much as we take from your report is that there was no expressed variable for conservation demand management in the load forecast?

MR. MALAMED: Right.

MR. SIMMONS: And do we – have you made any finding in relation to what the effect of this technological-change variable would be and whether that was a way of incorporating conservation demand management into the forecast.

MR. MALAMED: No, again, that would be outside of our mandate.

MR. SIMMONS: Okay. Right, so we can hear from others on that.

MR. MALAMED: Yes.

MR. SIMMONS: Okay.

Your report, Exhibit P-00014, please, page 33.

So at the top of this page you did report that "MHI concluded that Nalcor's case-by-case methodology" – this is concerning industrial load – "is reasonable considering the small industrial customer base on the island, but noted the amount of variability due to load variations is high and could materially impact CPW results." Which is the finding that you've relied on the MHI work in order to make, correct?

MR. MALAMED: Sorry, Mr. Simmons, I was having difficulty hearing you. Your speaker, I think, went off.

MR. SIMMONS: Oh, okay. We'll try this.

I'm just reading lines 1 to 3 on page 33. Those are conclusions that you drew from the Manitoba Hydro report we just referred to, correct, because that's what the footnote said.

MR. MALAMED: Can I have one second just to have a read?

MR. SIMMONS: Take your time.

MR. MALAMED: Thank you.

Yes.

MR. SIMMONS: Okay.

And I'll bring you down now to lines 26 to 30 where there's some discussion of conservation and demand management in the industrial sector.

MR. MALAMED: The line that starts on 26?

MR. SIMMONS: Twenty-six.

MR. MALAMED: "Conservation and demand management … program adjustments over the long term were not factored into the load forecast."

MR. SIMMONS: And there's a reference there to a report by Marbek Resource Consultants issued in 2008.

MR. MALAMED: Yes.

MR. SIMMONS: And I take it that your – you reviewed that report.

MR. MALAMED: Yes.

MR. SIMMONS: And that it addressed – it was an attempt to identify any potential contributions of CDM technologies in different sectors –

MR. MALAMED: I believe so.

MR. SIMMONS: – including the industrial sector.

MR. MALAMED: I believe so.

MR. SIMMONS: Do you know what was done with that report by Nalcor Energy – or Newfoundland and Labrador Hydro it would have been – with the industrial customers? Whether they worked with the industrial customers based on what was stated in that report?

MR. MALAMED: Whether they … I'm sorry?

MR. SIMMONS: Do you know what, if any, steps were taken to bring that report, the Marbek report, to the small number of industrial customers and inform them of what their opportunities were for conservation demand management? Is that something you explored?

MR. MALAMED: That is not something we explored.

MR. SIMMONS: Okay. So you don't know what came out of that?

MR. MALAMED: No, I don't.

MR. SIMMONS: Your observations about the potential for achieving conversation demand management in the industrial sector are based on what you read in that report in 2008. Is that correct?

MR. MALAMED: Correct.

MR. SIMMONS: From 2008, without any knowledge of the follow-up since that time?

MR. MALAMED: Correct. These are just our findings and observations of the work we've done.

MR. SIMMONS: Okay.

Did Grant Thornton do any assessment of what the magnitude of any impact of conservation demand management measures would have been on the load forecast?

MR. MALAMED: No, that is not what we're engaged to do.

MR. SIMMONS: So another area that you addressed regarding the load forecast is price elasticity.

MR. MALAMED: Yes.

MR. SIMMONS: And I think you described that as being – as the effect being if prices go up, people buy less.

MR. MALAMED: Correct.

MR. SIMMONS: And, conversely, if a price goes down, people sometimes buy more.

MR. MALAMED: Correct.

MR. SIMMONS: So it works in both directions. Okay.

The load forecasting model used by Nalcor, I understand to be what's called an econometric model process. Does that sound correct?

MR. MALAMED: Correct.

MR. SIMMONS: Do you know how price elasticity is incorporated into that model?

MR. MALAMED: I'm not – I'm probably not the right person to go into that explanation.

MR. SIMMONS: Okay.

Let's go to your report, Exhibit 00014, please, at page 36.

MR. MALAMED: Yep.

MR. SIMMONS: This is the section dealing with Price Elasticity of Demand.

MR. MALAMED: Yes.

MR. SIMMONS: And if we look at lines 14, 15 and 16, please. Was it – and this is a statement by – provided to you by Nalcor Energy in response to one of your questions.

MR. MALAMED: Yes.

MR. SIMMONS: And it said the price elasticity factors were included in three load sectors that were identified there: two residential sectors and the general service/commercial sector.

MR. MALAMED: Yes.

MR. SIMMONS: Right. And so did you do any further testing to determine how price elasticity was incorporated into those sectors, what the effect of it was, validated –?

MR. MALAMED: Again, that wasn't part of our mandate.

MR. SIMMONS: Okay.

And then on in 17 to 19, you identified two sectors where you say the models excluded electricity price elasticity factors. One being general service for the general service customers of Newfoundland Power and the other being the industrial customers that we spoke about –
MR. MALAMED: Sorry, you just said that I said that – that's not me saying that.

MR. SIMMONS: Oh, I'm sorry. This is Nalcor's report – yes, (inaudible), okay?

And the next paragraph talks about the general service sector, so let me just read what's said there. "A price elasticity factor for the general service\commercial electricity consumption sector of Newfoundland Power was not included because a statistically significant relationship between electricity price and electricity consumption levels for this customer group was not able to be analytically established. The lack of statistical significance for this customer group has always been interpreted to be indicative of an inelastic or low price elasticity that was not measureable." That's a pretty technical explanation.

Did you do anything to test that – the validity of that explanation?

MR. MALAMED: No. They took it for what it said.

MR. SIMMONS: Did you accept that explanation?

MR. MALAMED: Yes.

MR. SIMMONS: Well, let's go down to line 30. Line 30 you say: "Grant Thornton would expect the Newfoundland Power General Service/Commercial customer and Industrial Customers to respond to price increases similar to other customer sectors and the load forecast should include price elasticity effects."

How do you square that with the paragraph I read to you, at lines 20 to 24, which you say you accept?

MR. MALAMED: When you look at lines 14 to 16 –

MR. SIMMONS: Yes.

MR. MALAMED: – you have both – you have a general service/commercial electricity consumption –

MR. SIMMONS: Yes. Yes.

MR. MALAMED: – that – where price elasticity was included.

MR. SIMMONS: Yes.

MR. MALAMED: But you have another division of the same –

MR. SIMMONS: Yes.

MR. MALAMED: – or what appears to be the same, general service/commercial electricity consumption sector of Newfoundland Power where the same was not applied.

MR. SIMMONS: Right.

MR. MALAMED: And that's what we're saying.

MR. SIMMONS: But you've given an explanation as to why it's not applied to the general service sector. There's a statistically significant result from the regression analysis for residential, so there's – you can calculate it. That's – I think that's the explanation we're going to hear.

It's possible to calculate it and come up with a factor and know how much consumption responds to changes in price, but that it was not possible to do the calculation for general service. So you've been given an explanation, so how do you then move from that to say price elasticity was applied to residential, should be applied to general service, too?

MR. MALAMED: Sorry, I said that price elasticity was applied, on line 16, to general service?

MR. SIMMONS: To – well, to – 14: price elasticity –

MR. MALAMED: Sorry, I'm not –

MR. SIMMONS: – was applied to residential electricity consumers of Newfoundland Power. 15: to the "Hydro's Island Rural service territory." And 16: to Hydro's general service customers. But then it was not applied to Newfoundland Power's general service customers.

MR. MALAMED: Correct. So –

MR. SIMMONS: Right?

MR. MALAMED: So what I'm comparing –

MR. SIMMONS: Yeah.

MR. MALAMED: – is, as you've said, Hydro's general service –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – with Newfoundland Power's general service.

MR. SIMMONS: Okay.

Explain to me how you did the comparison in order to determine that it was appropriate to apply the Hydro general service price elasticity to the Newfoundland Power general service customers.

MR. MALAMED: I'm simply observing that one included it and one did not. It's not an assessment of should it have needed to be included or not.

MR. SIMMONS: Well, at line 30 you say: "Grant Thornton would expect the Newfoundland Power General Service … customer … to respond to price increases similar to other customer sectors…." That's more than just a statement that price elasticity hasn't been applied. That's a statement that you believe; you've come to a conclusion that there should be an elastic response that can be applied to this load forecast for that customer sector – isn't it?

MR. MALAMED: That's correct.

MR. SIMMONS: On what basis, then, do you make that statement?

MR. MALAMED: Based on what we saw for the other categories.

MR. SIMMONS: Because it was applied to one, you say why can't it be applied to the other? Is there any more than that?

MR. MALAMED: Correct.

MR. SIMMONS: There's no more than that?

MR. MALAMED: Correct.

MR. SIMMONS: So you've also said the price elasticity should be applied to industrial customers. What was the basis for your conclusion that that should be done?

MR. MALAMED: Our basis for the conclusion is that it affects other groups –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – we would've assumed that it would've (inaudible) – would have effected them as well.

MR. SIMMONS: Okay.

So you told me earlier that for load forecasting for the industrial customers, talking to the customers to find out what their plans were, would be an appropriate way to do it. With four industrial customers, is it not possible to talk to them as well about this issue and find out for each customer what the potential was for their power consumption to change with changes in rates?

MR. MALAMED: Yes, that sounds like a good idea. I don't know that that was done but it sounds like a good idea.

MR. SIMMONS: Yes, Okay.

Let's take an example, one of the industrial customers is Vale –

MR. MALAMED: Yes.

MR. SIMMONS: – and also Praxair, both of which operate facilities at the Long Harbour smelter site, where nickel processing is carried out. You came across that in the course of your investigation?

MR. MALAMED: Yes.

MR. SIMMONS: Do you know when that work – that plant was built?

MR. MALAMED: I believe it's for – it's a refinery, I believe.

MR. SIMMONS: Yeah, the refinery, yes. Sorry, do you know when it was built?

MR. MALAMED: When?

MR. SIMMONS: Yes.

MR. MALAMED: I don't know the date it was built.

MR. SIMMONS: Do you know it was very recently completed; it's a very new facility.

MR. MALAMED: Okay.

MR. SIMMONS: Okay.

Well, if you accept that it's very recently built and it's very new. Would you expect that there would be any opportunity for that facility to change its power consumption based on changes in the power rate?

MR. MALAMED: Could you ask that question again?

MR. SIMMONS: You'd assume that a new plant is – got the latest technology in it, right? It's just been built. How would you apply the price – the general price elasticity theory to that specific plant? Did you consider whether there was actually potential for that – one of four industrial customers to respond to changes in price by varying the load it draws from the system?

MR. MALAMED: That was not part of our engagement.

MR. SIMMONS: Okay.

Exhibit P-00135, please, which is the presentation that you gave yesterday, slide 27.

So this is one of the slides dealing with price elasticity. The first bullet explains what it is, it's the "Effect of electricity price on electricity demand." Second bullet says: "As the price of electricity goes up, demand goes down," but conversely, as the price of electricity goes down demand can go up. Correct?

MR. MALAMED: Correct.

MR. SIMMONS: And the last bullet says: "Nalcor excluded price elasticity from general/commercial and industrial customers."

Let me just ask you about the "general/commercial."

Based on the material we just looked at in relation to the general service customers, which said that there was no relationship that could be found from the statistical analysis to allow a price elasticity factor to be calculated, is it correct to say that Nalcor excluded price elasticity from its forecast for general/commercial customers?

Excluded implies a choice to apply or not apply, and I'm gonna suggest the evidence is that it was impossible to apply a price elasticity figure to general commercial customers, 'cause one could not be calculated.

MR. MALAMED: I'm okay with that.

MR. SIMMONS: Yes.

MR. MALAMED: Our observation is that it was excluded.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: If you tell me that it cannot be excluded, then our assumption that we've assumed is incorrect, sure.

MR. SIMMONS: So you believe, then, and you've represented here to the Commission, that Nalcor should apply some price elasticity figure to the Newfoundland Power general service customer sector?

MR. MALAMED: I'm not saying that they should. I'm saying that they didn't.

MR. SIMMONS: Okay.

So is your position that you're presenting now that the only finding that we should take from your work on this is the observation that price elasticity was not applied to the general-commercial sector –

MR. MALAMED: Correct.

MR. SIMMONS: – with no opinion as to whether it should or should not be applied to that sector?

MR. MALAMED: I am not making that opinion that it should or should not.

MR. SIMMONS: Okay.

Mr. Ralph has asked you some questions about the economic forecasts that were used. And if I can bring you to your report at Exhibit 00014 please, page 34.

MR. MALAMED: Yes.

MR. SIMMONS: Let's go down to line 29 please.

MR. MALAMED: Yes.

MR. SIMMONS: So you've made a statement in line 29: "It appears that Nalcor has followed good utility practice regarding the use of macro-economic data sources."

So if we stop there, what was the basis for your finding that Nalcor had followed good utility practice regarding the macroeconomic data sources used for the load forecast?

MR. MALAMED: I believe it comes from one of their experts, but I'd have to go back to get you the exact source.

MR. SIMMONS: Well, would their experts – who are their experts?

MR. MALAMED: Sorry, Nalcor's experts.

MR. SIMMONS: Who is that?

MR. MALAMED: I'd have to go back to get you a source.

MR. SIMMONS: Okay.

What Nalcor experts did you consult with?

MR. MALAMED: Sorry, external experts.

MR. SIMMONS: Okay.

MR. MALAMED: I just have to go back to my notes to check.

MR. SIMMONS: Yeah, I'm not sure who that would be. You – because you spoke to the Nalcor staff who do load forecasting, correct?

MR. MALAMED: Correct.

MR. SIMMONS: Right. Who else did you get information from concerning load forecasting?

MR. MALAMED: I'm gonna ask, again, that during the break –

MR. SIMMONS: Okay.

MR. MALAMED: Let me go clarify for you.

MR. SIMMONS: Okay, if you could find out that information for me please.

MS. O'BRIEN: Sorry, if I just may interrupt. Commissioner, I just wanted you to note the time.

THE COMMISSIONER: Okay. Is this a good time, then, to break for lunch –

MR. SIMMONS: It certainly is. Yes, Commissioner, thank you.

THE COMMISSIONER: – Mr. Simmons? Okay, I just keep forgetting to look at my watch. All right, so we'll break now and come back at 2 o'clock this afternoon.

CLERK: All rise.

Recess

THE COMMISSIONER: Good afternoon.

Just before you begin, Mr. Simmons, just for the people that are watching in or who are inclined to view the archived webcast, I understand that we now have managed to get the Monday and Friday session from last weekend. Tuesday and Thursday we're hoping to get done – it's being done now and, hopefully, will be up tomorrow.

Go ahead, Mr. Simmons.

MR. SIMMONS: Thank you, Commissioner.

Mr. Malamed, before we broke for lunch we were getting near the end of the review of the

load forecasting evidence, and we were talking about the economic forecast that Mr. Ralph had also asked you some questions on.

You had identified, in your report and in your presentation, that there were other forecasts available that potentially could've been used for the load forecast prepared by Nalcor, other than or in addition to the one prepared by the Government of Newfoundland and Labrador.

In your work, did you do anything to evaluate the relative merits of using one set of forecasts over another, or have you merely identified the fact that there are other forecasts available that could have been utilized?

MR. MALAMED: I'd like to answer the question, Mr. Simmons, but before I do, I would just like to go back over a couple of answers that I gave prior to our break.

MR. SIMMONS: Sure.

MR. MALAMED: Just to clarify them.

MR. SIMMONS: Yes, please.

MR. MALAMED: One of your questions was regarding the 8.9 percent. If I could take you to page – I believe it is 31 of Exhibit P-00014. Sorry, page 32; sorry, page 33 first.

One of the questions you had asked me was regarding CPW, and did we look at other areas or other geographic areas as well under industrial customers.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: We did look at, you'll see on line 5, utilities in Alberta. As well as on 7, utilities in British Columbia.

MR. SIMMONS: Okay.

So you're referring to the section – I'd say it's from line 4 to line 12 on page 33 of your report.

MR. MALAMED: Correct.

MR. SIMMONS: That's P-00014?

MR. MALAMED: Correct.

MR. SIMMONS: Okay.

And in that case you have some observations noted for other provinces with industrial customers.

MR. MALAMED: Correct.

MR. SIMMONS: So what was your finding of that – about concerning utilities in Alberta?

MR. MALAMED: That utilities in Alberta rely on industrial load input similar to Newfoundland and Labrador Hydro approach. This means that the utilities projection for industrial load would be based on input from its customers.

MR. SIMMONS: So the utilities in Alberta do it the same way that Newfoundland and Labrador Hydro, a subsidiary of Nalcor, does?

MR. MALAMED: That's right.

MR. SIMMONS: Okay.

What were your findings for utilities in British Columbia?

MR. MALAMED: "Utilities in British Columbia as per Site C report from Deloitte stated that forecasting is based on projection of current and potential customers, including assumptions made on major capital projects."

MR. SIMMONS: Okay.

And did you have any information on utilities in any other provinces?

MR. MALAMED: I don't believe that we did.

MR. SIMMONS: Okay, thank you.

So was there something else you needed to comment on as well?

MR. MALAMED: Yes, please.

On page 31, Exhibit P-00014.

MR. SIMMONS: Yes.

MR. MALAMED: Line 17 and 18.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: I believe your question was around best utility practice.

MR. SIMMONS: Yes.

MR. MALAMED: I'd just like to read to you: "MHI noted that the domestic forecast methodology implemented by Nalcor is acceptable in practice, but not best utility practice in this sector. According to MHI, best utility practice would incorporate end-use methodology for the forecasting process for this sector, but increased accuracy is not guaranteed because any forecast is dependent on the accuracy of the assumptions on which it is based. MHI noted that other jurisdictions also applied a combination of regression and end-use modelling including Ontario, Manitoba and BC."

MR. SIMMONS: Okay, thank you.

MR. MALAMED: One more.

MR. SIMMONS: Yes.

THE COMMISSIONER: Just before you go to that, where on page 21 were you just reading from?

MR. MALAMED: 31, I apologize.

THE COMMISSIONER: 31, I'm sorry. Okay.

MR. MALAMED: 31, line 17 to 22.

On page 35, I just wanted to read to you line 7, which I believe that I may have said backwards. And just so it gets entered correctly: "Ten year history average variance of 8.9% overstated load forecast (including all customers)."

MR. SIMMONS: Okay.

And as we discussed before, 8.9 per cent is within the margin of error that MHI regards as being acceptable. Correct?

MR. MALAMED: Correct.

MR. SIMMONS: Yes.

MR. MALAMED: And that was it.

Mr. Simmons, I'm going to have to ask you to repeat the question that you started with.

MR. SIMMONS: Certainly, sure.

We're talking about the economic forecast that was prepared by the Government of Newfoundland and Labrador and relied upon by Nalcor to prepare its – it's a economic forecast that was relied upon by Nalcor to prepare its load forecast.

And did you do anything to evaluate or compare the relative merits of using that forecast versus Conference Board or other sources of information?

MR. MALAMED: We didn't do anything to evaluate where we are. We are identifying that there are other sources available.

MR. SIMMONS: Right. Did you explore the question of why Nalcor load forecasters chose to use the Government of Newfoundland and Labrador economic forecast instead of Conference Board data?

MR. MALAMED: No, we did not.

MR. SIMMONS: P-00135, please, which is the presentation, slide 29.

So this is your slide dealing with the economic forecasts, and you've said here: "Conference Board of Canada's economic forecasts were different from Nalcor's forecast" and you've pointed out two differences dealing with number of housing starts and population.

And then at the bottom you say: "Certain economic data relied upon by Nalcor was different from CBOC economic data, hence domestic load forecasts may be overstated."

So I'm gonna suggest that, here, you went a bit further than just pointing out there was another load forecast available, and you've drawn a conclusion here that the consequence of there being other forecasts available is that the Nalcor domestic load forecast may have been overstated. Is that the conclusion that we can draw from your work?

MR. MALAMED: It was a bit confusing, but if I can clarify.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: What we're saying is that the CBOC economic data is different.

MR. SIMMONS: Yes.

MR. MALAMED: We did a bit of analysis, and we could see that their numbers are lower than what was used.

MR. SIMMONS: Right.

MR. MALAMED: By doing that, we then give the "hence domestic load forecast may be overstated."

MR. SIMMONS: Right.

MR. MALAMED: If one is greater than the other, we're saying it may be overstated.

MR. SIMMONS: Right. So if the Conference Board forecasts were used, instead of those prepared by the provincial government, you're saying the result would be that the CPW for the Isolated Island case would be lower –

MR. MALAMED: Correct.

MR. SIMMONS: – than what was determined?

MR. MALAMED: Correct.

MR. SIMMONS: Now – but what you have not done is made any assessment at all of whether the Conference Board forecast should've been used?

MR. MALAMED: No, we have not.

MR. SIMMONS: That's left for someone else to consider?

MR. MALAMED: Yes.

MR. SIMMONS: And neither have you explored any facts around that question to determine what the reasons were for choosing to use the government forecast and not the Conference Board forecast?

MR. MALAMED: Correct.

MR. SIMMONS: If we can go to the next slide, please, at page 30 of Exhibit P-00135? This is your slide dealing with load forecast. The first bullet you say: "No potential increase/decrease in industrial load included."

Now, are you suggesting here that there should have been an increase in industrial load or a decrease in industrial load?

MR. MALAMED: I'm not suggesting either of those. I'm simply making the observation in terms –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – of what was done.

MR. SIMMONS: Okay. Second bullet: "Voisey's Bay mine closing in 2023 was not factored into Nalcor's load forecast."

What investigation or evaluation did you do to reach that finding?

MR. MALAMED: I can't – I'd have to go back again to look at my notes, but at least we would have interviewed –through the interviews, would've got an understanding of what was occurring there.

MR. SIMMONS: Who did you interview about it?

MR. MALAMED: I'd have to go back and get the notes.

MR. SIMMONS: Okay. Well, you've – this is part of your presentation that you gave here yesterday.

MR. MALAMED: Yes.

MR. SIMMONS: Now, I presume you came prepared to support what you have on these slides?

MR. MALAMED: I did come prepared.

MR. SIMMONS: Right. And this slide addresses the Voisey's Bay mine closing, and it is suggested here that the load forecast should

probably have been lower, because it was anticipated that the Voisey's Bay mine will close in 2023.

Now, I would have expected, Mr. Malamed, that you would come prepared to explain that to us.

MR. MALAMED: Our investigation wasn't around Voisey's Bay. I can get that information for you.

MR. SIMMONS: Why did you include that on this slide?

MR. MALAMED: Because we assumed that that was an important factor to include.

MR. SIMMONS: What was your source of the information for the statement that the mine closes in 2023?

MR. MALAMED: If you could give me a minute please?

MR. SIMMONS: Please – yes, yeah.

MR. MALAMED: The 2000 – sorry, on page 33 –

MR. SIMMONS: Yes.

MR. MALAMED: – line 31: "The 2011 Annual Report for Vale S.A. includes a projection exhaustion date for Voisey's Bay open pit of 2023."

MR. SIMMONS: Right. So I guess, the annual report, you could probably look up on the internet –

MR. MALAMED: Correct.

MR. SIMMONS: – for Vale? Did you do anything else to investigate the potential future of the Vale mine at Voisey's Bay, other than look at the annual report?

MR. MALAMED: Nothing that I've noted in this report.

MR. SIMMONS: Anything that you recall?

MR. MALAMED: At this point, no.

MR. SIMMONS: Do you know – the mine is in Labrador, on the Labrador coast. You're aware of that?

MR. MALAMED: Yes.

MR. SIMMONS: Yes. And Vale has built the nickel refinery at Long Harbour on the Avalon Peninsula on the Island of Newfoundland. You're aware of that?

MR. MALAMED: Yes.

MR. SIMMONS: Okay.

And are you aware the Long Harbour is a deepwater port?

MR. MALAMED: I – that starts to become more difficult for me. I'm not an expert in that area.

MR. SIMMONS: And do you know how they get the nickel to Long Harbour?

MR. MALAMED: I could not tell you.

MR. SIMMONS: Okay, would it surprise you that it's a deepwater port; ocean-going ships can bring nickel from anywhere that it's sourced in the world?

MR. MALAMED: They – I'm going to believe you.

MR. SIMMONS: Right. So you are tying the closure of – the potential closure of the open-pit Voisey's Bay mine on the Labrador Coast to the continued operation of the Vale nickel refinery in Long Harbour. Correct?

MR. MALAMED: Yes. So I think that it would be fair to say that that is an assumption of ours, and if –

MR. SIMMONS: Yes.

MR. MALAMED: – and if by any chance something else from the world was going to be refined there, that would make a difference.

MR. SIMMONS: Okay. So it's an assumption. Are you comfortable coming here today and giving this evidence on the basis of assumptions

without having done more detailed or thorough investigation of those assumptions?

MR. MALAMED: I would remove the assumption, and I would remove the comment to eliminate any concern or confusion.

MR. SIMMONS: Let's go back to slide 30 on P-00135 please.

MR. MALAMED: On – yes.

MR. SIMMONS: So the second bullet: "Voisey's Bay mine closing in 2023 was not factored into Nalcor's load forecast."

Do you stand by that statement?

MR. MALAMED: I – from the statement that I've just said and the explanation I just gave, I would remove it, because you've asked me, in the scenario that you've described –

MR. SIMMONS: Yes.

MR. MALAMED: – to consider that it wouldn't close.

MR. SIMMONS: Mm–hmm.

And that's enough for you to remove it?

MR. MALAMED: I'm going to believe you.

MR. SIMMONS: Okay. Okay. Thank you.

The last bullet says: "Potentially overstates industrial load forecast."

So if we remove the second bullet, do you stand by the third bullet?

MR. MALAMED: If there are – if you remove the third bullet – sorry, if you remove the second bullet?

MR. SIMMONS: Yes.

MR. MALAMED: Do I stand behind – for the third bullet –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: It could still occur, yeah, as a result of there's no potential increase or decrease in industrial load included.

MR. SIMMONS: Okay.

So did you make any assessment of how the Nalcor Energy load forecasters should be forecasting industrial load?

MR. MALAMED: No. That was outside of our engagement.

MR. SIMMONS: Okay. Thank you.

Okay, thank you, Mr. Malamed.

I'm going to move on to the third part now dealing with the capital costs. And (inaudible), I think, Mr. Shaffer, that's the part of the report you've been the primary consultant on, correct?

So would you – I'll give you a proposition here, and you tell me if you agree with this or not –

MR. SHAFFER: Mr. Simmons, I could hardly hear you, I'm sorry.

MR. SIMMONS: Oh, I'm sorry. I'll try and speak a little louder here for you.

The purpose of preparing the capital costs estimates for input into the CPW, here, was for the purpose of comparing the different alternative options for generation planning.

Is that your understanding of the purpose of preparing these estimates and using them in the capital – in the CPW?

MR. SHAFFER: That's my understanding.

MR. SIMMONS: Yeah, okay.

And we looked a little while ago at the Manitoba Hydro International October 2012 report with Mr. Malamed. Did you have an opportunity to review that report prior to preparing your report and giving your testimony here?

MR. SHAFFER: I personally did not review that report.

MR. SIMMONS: You did not review that report.

MR. SHAFFER: No.

MR. SIMMONS: Okay.

Do you know whether that report addresses the use of the capital cost estimates in the CPW analysis?

MR. SHAFFER: If you're asking me do I have direct knowledge right now?

MR. SIMMONS: Yes.

MR. SHAFFER: No.

MR. SIMMONS: Okay.

MR. SHAFFER: If you're telling me that it does, I'll take that as –

MR. SIMMONS: Okay.

MR. SHAFFER: – gospel.

MR. SIMMONS: Were you aware that MHI's October 2012 report was prepared for the purpose of assisting the decision making around the Decision Gate 3 decision to sanction the project in December of 2012?

MR. SHAFFER: That was my understanding of it, yes.

MR. SIMMONS: Okay.

Well, can you explain to me why, knowing that, and being tasked with preparing your report here, why you didn't read that MHI report?

MR. SHAFFER: The team that worked under my direction read the MHI report. And to the extent that there was something in that report that was relevant to this part –

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: – it would have been brought to my attention.

MR. SIMMONS: Okay.

Who on your team was assigned the task of reading that report?

MR. SHAFFER: We had many people on the team. I couldn't tell you specifically but I know that somebody was – looked at it because it was quoted in our report in other sections, if I remember correctly.

MR. SIMMONS: Okay.

So were there parts of the capital cost estimate report that were authored by other people other than yourself?

MR. SHAFFER: Well, it was – they definitely wrote a draft of certain parts.

MR. SIMMONS: Yes.

MR. SHAFFER: But what happened was in the course of – we reviewed it –

MR. SIMMONS: Yeah.

MR. SHAFFER: – made – added to it as we went along –

MR. SIMMONS: Yeah.

MR. SHAFFER: – and eventually adapted it as our own work product, meaning David and myself.

MR. SIMMONS: Okay.

So how much were you personally involved in reviewing the source documentation for the statements made in the report?

MR. SHAFFER: Well, for the – well, which source documentation specifically, I guess, would you be referring to?

MR. SIMMONS: Anything footnoted in the report.

MR. SHAFFER: For the footnotes that impact this portion, meaning the Capital Cost Estimates portion 3.1 and forward, I looked at all the source documentation that was made reference in the footnotes.

MR. SIMMONS: Okay.

So if we – if you haven't read the October 2012 MHI report, it's because the people on your team working on this didn't bring it to your attention. Is that fair to say?

MR. SHAFFER: Or it wasn't in the footnotes or it wasn't – yes, it was not brought to my attention. I will state that in the course of reviewing the report we had binders prepared –

MR. SIMMONS: Yes.

MR. SHAFFER: – that had source documents of all the footnotes. And there were excerpts of MHI report that was in there, which if we had a footnote on it, we had the documentation to support the footnote.

MR. SIMMONS: Okay.

MR. SHAFFER: That I did see.

MR. SIMMONS: Okay.

Let's go to Exhibit P-00058, please, which is the MHI October 2012 report.

So we've looked at this before and we know that it was done for Government of Newfoundland and Labrador. Do you have any issues or concerns regarding the independence of MHI in preparation of this report?

MR. SHAFFER: No.

MR. SIMMONS: Do you have any concerns about the expertise brought to bear by MHI in its work in preparing this report?

MR. SHAFFER: No.

MR. SIMMONS: Okay.

Let's go to page 58 – I'm sorry, page 52, please. Okay, please scroll down a little bit. Okay, could you stop there? Let's scroll down a little more, please. Okay, stop there.

These paragraphs aren't numbered, unfortunately, though the approach taken in this report in different sections appears to be that there's a summary conclusion at the end of each section. And we see it here on the bottom of the screen. It's in italics and bold.

And I'm gonna read – this is dealing with the transmission evaluation of transmission cost estimates. And it says: "The transmission line structures and routes selected for all transmission facilities are cost-effective considering the terrain, route, and climactic loading expected. From the review of the written documentation provided, design methodology, and information recorded in the Nalcor staff interviews, MHI has found that the Decision Gate 3 estimates for all transmission facilities were prepared in accordance with good utility practice and within" the AACE International Class 3 level accuracy range.

Were you aware that MHI had made that determination in its report regarding the transmission facilities prior to Decision Gate 2?

MR. SHAFFER: Well, what's in my report is that on page 59, lines 1 through 3 is – we do quote MHI in there –

MR. SIMMONS: Yes.

MR. SHAFFER: – in terms of it being considered a Class 3 estimate.

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: And that therefore be considered reasonable for the Decision Gate 3 project sanction stage. I mean it's noted right there.

MR. SIMMONS: Okay.

MR. SHAFFER: Part of footnote 194 on page 59, too, is where it came from.

MR. SIMMONS: Okay, so that's page 59 of your report?

MR. SHAFFER: Yes.

MR. SIMMONS: Which line?

MR. SHAFFER: One through – well, it actually starts on page 58.

MR. SIMMONS: Yes?

MR. SHAFFER: Forty-one is the line number. Then it reads through page 59, 1 through 3.

MR. SIMMONS: Yes.

MR. SHAFFER: We quoted from the report, if this is the same report, which I believe it should be.

MR. SIMMONS: Okay.

So the report I referred to you – you to is directly concerning the transmission facilities. If you go to page 55, please, I'll just walk you through some of this.

Scroll down. Oh no, I'm sorry, page 55 of Exhibit P-00058, which is the MHI report.

Okay, please scroll down. Scroll down further. Okay, stop there.

Now, this is the section dealing with the Strait of Belle Isle crossings, sometimes called the SOBI, S-O-B-I. And the summary there says: "The costs of the Strait of Belle Isle marine crossing have increased marginally but are considered to be reasonable and within the AACE Class 3 estimate range for Decision Gate 3. MHI is of the opinion that there is an equal likelihood that the costs will decrease, as a result of opportunities through optimized design."

Are you aware of anything that would contradict that determination made by MHI in October of 2012?

MR. SHAFFER: No, but the only question I would raise is whether or not MHI was looking at the contingency calculations and dealing with the strategic and tactical risk part about it. I thought what they were referring to in here that was quoted in my report had to do with the base estimate.

MR. SIMMONS: Okay. And let's just assume this is the base estimate so –

MR. SHAFFER: Okay.

MR. SIMMONS: – you have no quibble with the base estimate here. You're saying the base estimate is within the range of an AACE Class 3 estimate. So that's not contested.

MR. SHAFFER: I'm not contesting that at all. MHI said it and John Hollmann said it.

MR. SIMMONS: Okay, page 56, please. Scroll down, scroll down. Okay, stop. Now, you may have to go back up, please. Okay, you can stop there, please.

My apologies, Commissioner, the lack of paragraph numbers is throwing me off a little bit here.

THE COMMISSIONER: I know it's difficult.

Okay, take your time.

MR. SIMMONS: Scroll down a little bit, please. Okay, we can stop there.

So in paragraph 2.6.1 under Scope of Work, this is now addressing the Muskrat Falls generating station. And it reads: "A high-level review of the Muskrat Falls Generating Station design changes, associated switchyards, and 315 kV transmission lines to Churchill Falls was completed. Cost estimates and construction schedules completed by Nalcor in preparation for Decision Gate 3 were examined and an assessment was made of their reasonableness as inputs to a CPW analysis."

So the point I'm interested in there is that it appears that MHI's approach here was to examine these cost estimates for the purpose of assessing their reasonableness as inputs into the CPW analysis. So is that the same approach that you took to your evaluation of the capital cost from the perspective of was it reasonably prepared for use in the CPW analysis?

MR. SHAFFER: I don't have opinion on the base estimate in terms of whether or not it was reasonable or not reasonably prepared. Experts looked at it. John Hollmann looked at it, who's one of the premier experts in the field, and he said it was a good estimate. I mean, I'm not questioning that.

MR. SIMMONS: Mm-hmm. Okay.

So the approach that you took to evaluation of base estimate, contingency and schedule, were you looking at it from the point of view of its reasonableness for an investor who was looking into the project, or reasonableness to the owner who was going to choose to do the project, or its

reasonableness as an input into the CPW analysis?

MR. SHAFFER: No. I was – we were looking at the three components that made up the capital cost estimate.

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: And of those three components we wanted to understand how they were derived at, which is what we did. And the base estimate component part of it, we just called – we talked to experts and we used our independent expert on it also.

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: And, again, it was for Decision Gate 3 as a class 3 estimate.

MR. SIMMONS: Right.

MR. SHAFFER: I don't think we have any exception with that. And that – as far as whether or not you mean it's reasonable for an input into the CPW calculation, I'm not sure what you mean by reasonable as an input.

MR. SIMMONS: Well, the use of the CPW is to do the comparison between the two alternatives. MHI's report here is addressing the capital cost estimates from that perspective as an input into the CPW. Now maybe what you've done is no different, but I just wanted to know if you had considered it from that perspective as whether the capital cost estimate that was used in the CPW here for the Interconnected Island Link was reasonable for that purpose.

MR. SHAFFER: I'm trying to really understand the question Mr. Simmons. Meaning should it be higher or lower as the base estimate part of it? No, we did not do that.

MR. SIMMONS: Okay.

Page 57 please, the next page. Scroll down. Okay, you can stop there with schedule on the top.

MHI here indicates the schedule that they were evaluating, and the third bullet there says: "First power date is July 2017."

Is that the schedule that was used for the CPW analysis of the Interconnected Island Link?

MR. SHAFFER: Meaning for the tactical schedule that's in our report for the – those prepared by Westney; that when they indicate first power to be in July 2017?

MR. SIMMONS: You made some comment in your direct examination on schedule and the inputs into the CPW for the calculations, do you know if they were based on a first power date of July 2017 or something different?

MR. SHAFFER: Oh, yeah, it was July 2017.

MR. SIMMONS: Okay. All right.

MHI has said: "The high-level schedule that was reviewed reflected the project contracting strategy and depicted the key project activities that impact the project schedule. The schedule is consistent with the current contract packaging strategy and has considered labour workforce levelling. Based on a selected review, the schedule is supported by a very detailed work breakdown structure that should address project and construction management, and cost control during project execution."

Do you take exception with any of that?

MR. SHAFFER: No.

MR. SIMMONS: Okay.

Scroll down, please.

Their conclusion at the bottom is: "From MHI's perspective, the project scheduling is comprehensive, detailed, and consistent with best industry practice for similar projects."

Do you take any issue with that?

MR. SHAFFER: Well, that's their conclusion, yes. I won't take an issue that's their conclusion.

MR. SIMMONS: Okay.

"The current project schedule is appropriate and reasonable to meet the requirements of Decision Gate 3."

Do you take any issue with that?

MR. SHAFFER: The same answer.

MR. SIMMONS: And that answer is?

MR. SHAFFER: The way it reads, MHI felt it was reasonable.

MR. SIMMONS: Okay.

Did you investigate the work that MHI had done to come to that conclusion?

MR. SHAFFER: No.

MR. SIMMONS: Do you know what the extent of the investigation and analysis that had been done by MHI was for them to reach this conclusion?

MR. SHAFFER: I have not – no, I don't know that.

MR. SIMMONS: Page 58, please. Okay, scroll down. Okay, stop there.

Here's the concluding paragraph on the – MHI's review of the Muskrat Falls Generating Station estimate.

"Based on the amount of engineering and levels of costs provided, MHI considers the Decision Gate 3 cost estimate to be an AACE Class 3 estimate and therefore would be considered reasonable for the Decision Gate 3 project sanction stage."

Take any issue with that?

MR. SHAFFER: No, that's a section recorded in my report.

MR. SIMMONS: Okay.

In the paragraph above, there's reference to the – it says: "The Muskrat Falls Generating Station project contingency in the Decision Gate 3 estimate is 9.0%, but maybe higher with allowances if required." And there is some further discussion regarding that.

So it appears here that MHI was aware that there was a contingency included in the estimate that they were evaluating for inclusion in the CPW. Would you agree with that?

MR. SHAFFER: I'm sorry, Mr. Simmons, can you repeat that question again?

MR. SIMMONS: The estimate that – the capital cost estimate for the Muskrat Falls plant that MHI said was reasonable for inclusion of the CPW was not just a base estimate, it also included contingency.

MR. SHAFFER: It doesn't specifically say that.

MR. SIMMONS: Okay.

So in the paragraph above where it refers to project contingency in the Decision Gate 3 estimate and saying the amount of it is 9 per cent, your conclusion is that it does not specifically say that there is contingency included in the estimate that MHI is signing off on as appropriate for conclusion in the cumulative present worth analysis.

MR. SHAFFER: Well, that's one. It doesn't specifically say that.

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: That they felt there was a reasonable contingency. And, number two, they're saying it's a 9 per cent contingency when the actual contingency was a little less than 7 per cent of what was included in the capital cost estimates. But I'm not sure what that's referring to then, specifically.

MR. SIMMONS: Okay.

Page 59, please. Scroll down. Okay.

This is the conclusion of MHI's analysis of the capital cost estimates. And it says that: "From a review of the information provided, Nalcor has performed the design, scheduling and cost-estimating work for the Muskrat Falls Generating Station and the Labrador Transmission Assets with the degree of skill and diligence required by customarily accepted practices and procedures utilized in the performance of similar work."

Do you take any issue with that statement?

MR. SHAFFER: No.

MR. SIMMONS: "The current Lower Churchill Project design, schedules and cost estimates are considered consistent with good utility practice."

Do you take any issue with that?

MR. SHAFFER: No.

MR. SIMMONS: "The design, construction planning, cost estimate and schedule are comprehensive and sufficiently detailed to support a Decision Gate 3 project sanction and appropriate for input into a cumulative present worth analysis."

You take any issue with that?

MR. SHAFFER: Well, to the extent that the cost estimate if, in fact, it includes contingency, then my report speaks for itself and my findings that I testified to on Friday – what we found. In addition, as far as the schedule, based on Nalcor's own consultant, Westney, as I testified to on Friday, that there was a 1 per cent chance of hitting that schedule.

So to that extent, I don't know if I take issue with that, but I'm reporting it and I want the Commissioner to know about that.

MR. SIMMONS: Certainly.

Do we go so far as to say that you have a different opinion than MHI has, or are you merely reporting other facts?

MR. SHAFFER: I'm reporting facts.

MR. SIMMONS: Hmm. Okay.

Page 79, please. Scroll down to where we can see item number two. And this is section 4.8 Conclusions Relating to CPW.

Now, the paragraph is a little long but I will read it. "When the CPW results were stress tested for increases in projected capital costs" (Capex +25%)" – I think they're referring to one of the sensitivities – "for the Interconnected Island option which has a relatively high level of capital investment relative to the Isolated Island option, the CPW preference continued to be in excess of $1.763 billion in favour of the Interconnected Island option. Recognizing the project has moved to a Decision Gate 3 level of review, and acknowledging the amount of contingency included in the Capital Cost estimates for the Interconnected Island option, there is an equal probability the capital costs will decrease as well as increase." And I'm going to stop there.

So there's a statement here recognizing that the project has moved to a Decision Gate 3 level of review and also acknowledging the contingency and the capital costs. And the conclusion that MHI expresses here is that there is an equal probability that capital costs will be lower or higher.

And my question for you is: Does that sound like a P50?

MR. SHAFFER: Yes.

MR. SIMMONS: Do you know what P-factor Emera used for the capital costing on the Maritime Link?

MR. SHAFFER: I don't want to guess, I know – I'd like just to review the report for a second, actually. I thought we had a section in there about that.

MR. SIMMONS: Okay.

MR. SHAFFER: I just want to double check. Maybe you could just –

MR. SIMMONS: Please do.

MR. SHAFFER: – help me out here, Mr. Simmons, if you know where it's at in the report.

MR. SIMMONS: No, take your time –

MR. SHAFFER: All right.

MR. SIMMONS: – and locate it.

MR. SHAFFER: If you turn to page 40 of the report, and I believe it's lines 13 through 17. I believe that's where we discuss it.

MR. SIMMONS: Okay.

So it says: "Capital cost estimates – NSUARB provided capital cost estimates using P50, P90 and P97 factors in their contingency for inclusion of capital cost estimates, but based the capital costs for the Maritime Link facilities under a P50 estimate."

So am I reading correctly here that it was actually the Nova Scotia Utilities Review Board that based their analysis on a P50 estimate for their Emera Maritime Link?

MR. SHAFFER: Oh, sure, yes.

MR. SIMMONS: Okay. So in assessing the appropriate risk factor, the P-level that you suggest should be applied for the Muskrat Falls and Labrador-Island Link project, you've told us that you did seek some expert advice, and I think you've referred to Mr. Hennessey of – is it RW Block?

MR. SHAFFER: I did, but I wanna correct what you just said.

MR. SIMMONS: Okay.

MR. SHAFFER: I didn't assess what the appropriate P-factor would be.

MR. SIMMONS: Okay. So you've – what you're done, though, I guess, is you've reported what other have told you about it. Is that a fair conclusion?

MR. SHAFFER: Experts, yes.

MR. SIMMONS: Okay. And can you tell me more about Mr. Hennessey's retainer? Was Mr. Hennessey retained as an expert to provide an opinion to Grant Thornton on that issue?

MR. SHAFFER: Verbally, I mean, we talked about it, and there also might – there might be some written work product coming from him. I don't recall right now, but he was – we brought him on so we could consult with him in areas where we needed to consult with him.

MR. SIMMONS: So is there a retainer agreement with Mr. Hennessey describing what his scope of work was?

MR. SHAFFER: Well, our Canadian firm handled that, so I'm gonna ask Mr. Malamed to answer that question.

MR. MALAMED: There is an engagement letter.

MR. SIMMONS: You have to press your microphone.

MR. MALAMED: There is an engagement letter with Mr. Hennessey, but I can tell you that in terms of the work steps and the scope of the work that we've asked him to do, that came as we were doing our work –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – and mostly clarification and an understanding of what it was that we're looking at.

MR. SIMMONS: And I believe in the – what I've understood in the report, he was asked and involved in looking at the escalation calculations for the capital cost and also gave some input into what appropriate P-levels would be for contingency. Is – do I have that right?

MR. SHAFFER: He also looked at the estimate, if I recall –

MR. SIMMONS: Okay, you mean –

MR. SHAFFER: – correctly.

MR. SIMMONS: – the base estimate to consider –

MR. SHAFFER: Yes.

MR. SIMMONS: – you're talking about. Okay.

MR. SHAFFER: Yes.

MR. SIMMONS: So did he prepare a written report?

MR. SHAFFER: I remember seeing a memo from him. The question is – I don't recall what was in it, per se, what the memo exactly was about, but I know that there was conversations with him about the P-factor. I recall having – myself, being part of that conversation with him.

MR. SIMMONS: Okay. 'Cause this seems to be a fairly important part of your report here.

MR. SHAFFER: Well, yeah, I think between Mr. Hennessey and Mr. Hollmann and the two folks from SNC-Lavalin, I mean, that's how we reached our conclusions about the P-factor.

MR. SIMMONS: Let's go to the report, please, P-00014, page 63, line 4: "Our third-party expert" – is that Mr. Hennessey?

MR. SHAFFER: Yes.

MR. SIMMONS: "Also noted that while selecting P50 as the confidence level is within the AACE 42R-08 guidance, in their experience, they have typically observed clients using P75 or above."

So the first point is Mr. Hennessey did advise you that P50 is within the guidance provided by the AACE document.

MR. SHAFFER: There's no doubt that he did, sure.

MR. SIMMONS: Okay. And then he provided you with his view that he's observed clients using higher values?

MR. SHAFFER: Yes. As did Mr. Hollmann and SNC.

MR. SIMMONS: Okay. So was Mr. Hollmann retained by Grant Thornton as an expert to provide an opinion on that topic?

MR. SHAFFER: No, Mr. Hollmann was retained by Nalcor as part of this whole process.

MR. SIMMONS: So how did you come to speak to Mr. Hollmann?

MR. SHAFFER: We asked to interview him.

MR. SIMMONS: Okay. So you approached Mr. Hollmann directly. He wasn't working for Nalcor at the time that you interviewed him, I don't –

MR. SHAFFER: No.

MR. SIMMONS: – think, was he? No. He had been in the past retained to do some work for Nalcor, correct?

MR. SHAFFER: That's my understanding.

MR. SIMMONS: Okay.

So you conducted an interview. He wasn't retained by Grant Thornton to provide any expert opinion, and from your discussion in the interview, you've reported on things he said about the P-value that he felt should be used for the project.

MR. SHAFFER: That's correct.

MR. SIMMONS: Okay.

And you interviewed some people from SNC-Lavalin?

MR. SHAFFER: We did.

MR. SIMMONS: They had – they were the engineering contractor on the project. Correct?

MR. SHAFFER: Yes.

MR. SIMMONS: They had originally been the engineering procurement and construction management – EPCM contractor. Correct?

MR. SHAFFER: Correct.

MR. SIMMONS: That relationship was changed and construction management was moved over to an integrated team, and not left just in SNC's hands, correct?

MR. SHAFFER: That's correct.

MR. SIMMONS: That happened in 2002, 2003 time frame –

MR. SHAFFER: (Inaudible.)

MR. SIMMONS: – 2012, 2013 time frame?

MR. SHAFFER: That's my understanding, yes.

MR. SIMMONS: Right. Okay.

And you – they gave you their views on what they felt the appropriate P-value should be for the project.

MR. SHAFFER: They – well, not on the project per se –

MR. SIMMONS: No?

MR. SHAFFER: – they indicated they use a P85 for these hydro – for these megaprojects.

MR. SIMMONS: Okay. All right.

So, in addition to talking to people about this – talking to Mr. Hennessey, talking to Mr. Hollman who had been involved and was interviewed, talking to people from SNC who had been involved in the project and were interviewed – did you do any kind of literature review to see what's published out there on this topic?

MR. SHAFFER: I did.

MR. SIMMONS: Okay.

And is that reported in your report?

MR. SHAFFER: No, because it's something I – we didn't rely on.

MR. SIMMONS: Sorry?

MR. SHAFFER: It's something we didn't rely on – we felt it just – there – we didn't put in it – that we relied upon it so it wouldn't be in the report.

MR. SIMMONS: Did you do any kind of a broader survey work, or a statistical survey work to see what P-values are used rather than the kind of anecdotal inquiries of the people you had available that you've described?

MR. SHAFFER: Well I – let me digress a second – I did read an article by Mr. Hollman that was written –

MR. SIMMONS: Yeah.

MR. SHAFFER: – that he wrote, and basically on projects that are smaller than Muskrat Falls –

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: – big projects, but not megaprojects that – based on his study – that they experience a 24 per cent cost overrun at P50.

So I asked him about that in the interview.

MR. SIMMONS: Right.

Did you gather – did you have any sources of data for hydroelectric projects, per se?

MR. SHAFFER: That – I believe that data didn't come out until after sanctioning.

MR. SIMMONS: What data are you referring to?

MR. SHAFFER: I remember seeing some data regarding hydro projects, in terms of average cost overruns.

MR. SIMMONS: Okay.

Now average cost overruns is a different thing than surveying to find out what P-factor owners were using when they were assessing the costs beforehand, correct?

MR. SHAFFER: Depends how you look at it.

MR. SIMMONS: Okay.

Are you aware of any kind of work or did you do any work to do any broader survey of what P – probability factors are actually used out there on hydroelectric projects by others?

MR. SHAFFER: You mean, other than talking to the experts who do hydroelectric projects? No.

MR. SIMMONS: Other than talking to the SNC people who you interviewed, and Mr. Hollmann and Mr. Hennessey.

MR. SHAFFER: Who do hydroelectric projects? No.

MR. SIMMONS: Okay. Yup.

Now, our first witness here, I'll get his name wrong, was Professor Flyvbjerg, from the UK. I don't know if you had an opportunity to read his report.

MR. SHAFFER: I have not.

MR. SIMMONS: Or to see the video of his evidence?

MR. SHAFFER: I saw a five minute blurb of it and I tried to look at it the other day and it was taken off-line.

MR. SIMMONS: So. I won't do justice to what he said. You'd have to read his report to see, but one of the things he was asked to do was to provide an overview of cost and schedule overruns on megaprojects. And he has a substantial database that's been collected over a period of time. They've adjusted statistically. It's approached from an academic viewpoint. So, he came with data. Are you aware, or have you had access to anything like that for the purpose of assessing what P-value should be used in an estimate for –

MR. SHAFFER: What –

MR. SIMMONS: – a project like this?

MR. SHAFFER: I personally have not. I guess the question is, if it's been out there for a while, why Nalcor wouldn't have looked at that then.

MR. SIMMONS: So, you haven't?

MR. SHAFFER: I have not. But –

MR. SIMMONS: Okay.

MR. SHAFFER: Go ahead.

MR. MALAMED: Mr. Simmons, just to add – and I'm not going to do Bent's last name justice, so I'm just going to call him Bent F.

MR. SIMMONS: Yes.

MR. MALAMED: We have read his literature, and we have read articles by him –

MR. SIMMONS: Mm-hmmm.

MR. MALAMED: – that were done before sanctioning date.

MR. SIMMONS: Mm-hmm.

MR. MALAMED: Just to give you some insight into that area.

MR. SIMMONS: Okay.

MR. MALAMED: Okay?

MR. SIMMONS: Thank you. I don't have too many more questions for you actually, but one thing I wanted to ask you about, was that in your direct evidence you had stated that the effect of including strategic risk and tactical risk at a P-75 value in this estimate would have been to increase the estimate from 6.2 billion to 7.5 billion?

MR. SHAFFER: Six-two to seven-five?

MR. SIMMONS: Yes

MR. MALAMED: Yes.

MR. SIMMONS: Yes. Okay. So that would be an increase of 1.3 billion on the base estimate?

MR. SHAFFER: Yes.

MR. SIMMONS: Okay. And. In fact, we know that the 6.2 billion already included some contingency in it. There was 368 million of tactical contingency in the 6.2.

MR. SHAFFER: That's correct.

MR. SIMMONS: Correct. Right.
If we look in your report at – that's Exhibit P-00014, page 55, please?

MR. SHAFFER: Fifty-five, Mr. Simmons?

MR. SIMMONS: Yes, please.

MR. SHAFFER: Okay.

MR. SIMMONS: This is where there is a statement of the contingencies that were calculated at DG3, and one of those is increase capex 25 per cent?

MR. SHAFFER: Yes.

MR. SIMMONS: So, I don't know how good you are at back-of-the-envelope calculations here.

MR. SHAFFER: Without a calculator I'm a dead man.

MR. SIMMONS: Well, if we took 6.2 billion and increased it by 25 per cent, my calculation says that that's 7.75 billion. Does that sound right?

MR. SHAFFER: Well I'll take your word for it. I'll be happy to – do I get my phone out and try it?

MR. SIMMONS: If you want to check it, feel free.

MR. SHAFFER: Okay.

MR. SIMMONS: Please do.

MR. SHAFFER: Let me check your math. If I could find my calculator.

Okay Mr. Simmons, I'm there; 6.2 times 1.25 – 7.75, yes.

MR. SIMMONS: Seven point seven five.

MR. SHAFFER: Yes.

MR. SIMMONS: So, this contingency, in fact, informs the reader of what the effect would be of a cost increase that's roughly equivalent to your position you've put forward that if strategic risk and tactical risk were valued at P75, that the value of the estimate would've gone to 7.5 billion.

MR. SHAFFER: Would you mind repeating that question? I just wanna make sure I get it right.

MR. SIMMONS: This sensitivity for increasing capital expenditure by 25 per cent –

MR. SHAFFER: Yes.

MR. SIMMONS: – would have increased – would have meant a change in the capital cost estimate from 6.2 billion to 7.75 billion, correct? And in fact that's more than what the change would be by doing as you suggested, including the strategic contingency and the tactical contingency at P point 7 – P75, which would only by 7.5 billion.

MR. SHAFFER: Well let me – let me just do the math quickly.

I'm not sure, and the reason why I answer that way is that if you look at the increase of the capex at 25 per cent from the base case, it goes from 8366 to 9.6, when if you just increase by the delta between the 6-2 and the 7.75 it'd be closer to 9.9.

MR. SIMMONS: Yeah, you're looking at the differences in actually the CPW, that's calculated as a result of the change of capital cost. Is that what you're doing?

MR. SHAFFER: Is that what you're referring to, the 25 –?

MR. SIMMONS: No.

MR. SHAFFER: Oh, I'm sorry.

MR. SIMMONS: No.

MR. SHAFFER: Okay.

MR. SIMMONS: I'm referring to the input difference. So you had said – I'll go through this again – that if instead of inputting into the CPW capital costs of 6.2 billion, if what had been put in was a capital cost of 6.2 with strategic risk and contingent risk valued at P75, the input into the CPW would have changed from 6.2 to 7.5 billion.

MR. SHAFFER: I see what you're saying.

MR. SIMMONS: Is that correct?

MR. SHAFFER: Yes.

MR. SIMMONS: Right. And this sensitivity, increase capex 75, is actually telling us what would happen if the –

MR. SHAFFER: (Inaudible.)

MR. SIMMONS: – input for the capital cost is 7.75 billion, correct?

MR. SHAFFER: No.

MR. SIMMONS: So this –

MR. SHAFFER: Well, I'm not so sure about that.

MR. SIMMONS: Well –

MR. SHAFFER: Because the –

MR. SIMMONS: – 25 per cent on top of 6.2 is 7.75.

MR. SHAFFER: Well, again, I'm not so sure about that. I'm not sure I can answer that question right now. I mean, if the question – because the way that 7.75 was calculated – I take that back, because I'm referring to Mr. Kean's – what Mr. Kean said it would be and that was at 7½.

MR. SIMMONS: Yes.

MR. SHAFFER: So I take that back. Okay, I see where you're getting – where you're going with that, Mr. Simmons.

MR. SIMMONS: Right.

MR. SHAFFER: Okay.

MR. SIMMONS: Right.

So the point is this sensitivity tells us the same thing as approaching the contingent and strategic risk the way that you've suggested in your evidence it could've been approached.

MR. SHAFFER: Well, the only thing I suggested in my report, which we put into evidence, is that at a P75, according to Mr. Kean, he reported it would be $7.5 billion.

MR. SIMMONS: Right.

MR. SHAFFER: Would be the – if you include both strategic and tactical.

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: That's all he said.

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: How it plays into the example you just gave, I would have to think about that a little bit more.

MR. SIMMONS: Okay. All right.

But there just – does there seem to be anything particularly wrong with the way that I've worked through this and with my suggestion that this sensitivity looks like it pretty much reflects what would've happened if contingency had been approached the way you suggest?

MR. SHAFFER: Not necessarily, because left out of the sensitivity is the strategic risk. So I'm not sure how it all interplays, which is why I'd have to do more research on that and take a look at it closer.

MR. SIMMONS: Okay, well, I don't follow that because the strategic risk – the $7.5-billion figure given to you by Mr. Kean, that included strategic risk. Correct?

MR. SHAFFER: That's what he indicated, yes.

MR. SIMMONS: It did. So my comparison of 7.5 billion for a base cost estimate with strategic risk and contingent risk at P75, which is 7.5 billion, I'm comparing that to this sensitivity which increases the capital expenditure of 6.2 billion by 25 per cent and gets the 7.75. And my point simply is those two inputs are about the same into the CPW.

MR. SHAFFER: I really think you're comparing apples and oranges at this point.

MR. SIMMONS: How? Why is it apples and oranges?

MR. SHAFFER: Well, because, again, these numbers do not include strategic risk, whereas Mr. Kean's does.

MR. SIMMONS: I see.

MR. SHAFFER: So I would have to think about more before I could answer that question.

MR. SIMMONS: Okay. I'll try another way. The escalation of 25 per cent, is that covering off the same things that the contingencies, strategic and tactical contingencies, are intended to cover, which is growth in the base estimate because of things that have either not been foreseen or not controlled?

MR. SHAFFER: I don't know. You would have to talk to the folks at Nalcor for that. Because the question is, when they did increase it by 25 per cent –

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: – were they thinking about things like labour productivity and schedule slippage and things like that that were in strategic risk.

MR. SIMMONS: Leave aside what anyone was thinking about when they were looking at the sensitivity, and look at the effect of doing the sensitivity. The effect is to increase the base cost estimate by 25 per cent and move it from 6.2 to 7.75, which allows us then to see what the effect on the CPW is of that change. Follow me so far?

MR. SHAFFER: So far, yes.

MR. SIMMONS: Okay. So if we were to do the same thing you suggest and recalculate the capital cost estimate by putting in strategic risk and contingency at P75, we get 7.5 billion, and we put that into the CPW. Okay?

MR. SHAFFER: Yeah.

MR. SIMMONS: The result of doing that will be about the same as what the sensitivity tells us.

MR. SHAFFER: I think –

MR. SIMMONS: The effect on the CPW.

MR. SHAFFER: Again, without looking at it closely – I'm not trying to be difficult –

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: I'm just saying without looking at it – because the thing I'm always – I'm trying to reconcile in my mind –

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: – is that these numbers do not include the strategic risk, whereas Mr. Kean's numbers do include the strategic risk.

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: I would want to understand why there would be a delta like that –

MR. SIMMONS: Okay.

MR. SHAFFER: – and to understand it better.

MR. SIMMONS: What is it –

MR. SHAFFER: But – let me finish.

MR. SIMMONS: Yup.

MR. SHAFFER: But by in terms of the pure math, if you take 6.2 times 1.25, it's 7¾ billion.

MR. SIMMONS: Mm-hmm.

MR. SHAFFER: And that delta between the 7.75 and the 6.2 is almost the delta between the 8,366 and the 9,654. That's all I know right now.

MR. SIMMONS: Right, okay. So when you do a sensitivity like this, and you apply a percentage increase on the capital cost, what's the purpose of doing that?

MR. SHAFFER: What's the purpose of doing a sensitivity analysis?

MR. SIMMONS: Yeah. In this case, on capital cost?

MR. SHAFFER: You're checking your assumptions.

MR. SIMMONS: Okay. Is it to measure the effect of changes in your assumptions?

MR. SHAFFER: Sure.

MR. SIMMONS: Right. So if we assume a capital cost of 6.2, we say, hmm, maybe we're wrong, what if it's 25 per cent higher? Let's see what the effect is so that we know, and we can – when we make our decision, we can make our

decision based on the knowledge of what the effect would be if we're wrong about that assumption. Does that sound reasonable?

MR. SHAFFER: That sounds reasonable.

MR. SIMMONS: Okay.

Isn't that exactly the same thing you're doing when you're saying I want to put strategic risk and tactical risk on my base cost estimate, and I want to be conservative and value it at P75? Is that really another way of doing the same thing?

MR. SHAFFER: You're back to that. I'm not sure I can really answer. I understand what –

MR. SIMMONS: Okay.

MR. SHAFFER: – you're saying –

MR. SIMMONS: All right.

MR. SHAFFER: – but I just can't answer it right now –

MR. SIMMONS: (Inaudible.)

MR. SHAFFER: – without looking at it further because of the lack of strategic risk in the CPW.

MR. SIMMONS: Okay, thank you, that's good.

Factual question, can we go to the presentation P-00135 please, slide 46 first.

MR. SHAFFER: I'm sorry what slide?

MR. MALAMED: Forty-six.

MR. SIMMONS: Forty-six.

It's dealing with operating and maintenance expense.

So in this part of the presentation, you address that Nalcor had estimated operating maintenance costs for Muskrat Falls would increase from 34 to 109 annually starting from 2020 and listed those reasons there.

You have identified that there has been a change, between 2012 and 2017, in the estimated operating and maintenance costs here. Did you do any assessment of the reasonableness of the original 34 million other than to say it's lower than 109?

MR. SHAFFER: No.

MR. SIMMONS: Did you look at how the 34 million was calculated or prepared, what the inputs were?

MR. SHAFFER: No.

MR. SIMMONS: Have you done anything other than say 34 million is lower than 109, this is something that needs to be looked at?

MR. SHAFFER: We spoke to Ed Martin about it.

MR. SIMMONS: Pardon me?

MR. SHAFFER: We spoke to Mr. Martin about it.

MR. SIMMONS: Yeah, no. But I mean in your report, in the findings you made in the report, are you really just pointing out that there's a difference, essentially saying this is something the Commission can look in to.

MR. SHAFFER: Yes.

MR. SIMMONS: Okay.

Let's go to your report P-00014, please, page 54.

THE COMMISSIONER: Would this be a good time to take our break? I notice it's 3 o'clock.

MR. SIMMONS: Yes, I don't have very much more, Commissioner, so a break would be fine.

THE COMMISSIONER: Would you prefer to go on or would you –?

MR. SIMMONS: I can clue it up after the break.

THE COMMISSIONER: Okay, let's take 10.

Recess

THE COMMISSIONER: Mr. Simmons.

MR. SIMMONS: Thank you, Commissioner.

Mr. Shaffer, I had – we've just gone to Exhibit P-00014, which is your report, page 54. Madam Clerk, can you scroll up a little bit please, so we can see a bit more of this table? Thank you.

At this page of the report, there is a table there which are described as summary of sensitivities at Decision Gate 2. And this is just a factual question, and either of you can answer this: is this a table of sensitivities that were extracted by Grant Thornton from different sources? Or is this presented as a single set of sensitivities prepared by Nalcor in the Decision Gate 2 materials?

I believe it's the former – is that not correct?

MR. SHAFFER: Yes.

MR. SIMMONS: Yes – okay.

So when we look at this set, do you know what the events were that led to the preparation of all the different sensitivities that we see collected in this Decision Gate 2 table?

MR. SHAFFER: I don't. No.

MR. SIMMONS: Okay.

Because there's been a comparison made of the number of sensitivities done at Decision Gate 2 and the number done at Decision Gate 3, noting that there are fewer at Decision Gate 3. And I think that may be mentioned in your report as well?

MR. SHAFFER: It was an observation we made.

MR. SIMMONS: And did you do anything to explore that observation further and inquire into why there were more at Decision Gate 2, and how they might have come to be, compared to the ones at Decision Gate 3?

MR. SHAFFER: Not that I recall.

MR. SIMMONS: Okay.

Thank you.

Go to the next page, please, page 55 where the sensitivities are shown for Decision Gate 3. Scroll down a little. Can you stop there?

So, we talked a little bit a moment ago about the increased capex, capital expenditure, at 25 per cent sensitivity. And there are two other capital expenditure sensitivity – one for an increase of 10 per cent and one for a decrease of 10 per cent.

Did you explore why those particular ones are included, and what the intention was about putting those sensitivities in the Decision Gate 3 package?

MR. SHAFFER: No, we did not.

As far as understanding the reason for it, it was actually pointed out that they did various sensitivity analyses at 2 and 3. The project team told us that and this is the excerpt of what we got.

MR. SIMMONS: Okay.

Can we go to Exhibit P-00058 please, which is the MHI October 2012 report prepared prior to the Decision Gate 3 decision, and page 76, please?

Okay.

Scroll down, okay, a little more. You can stop there.

So, there is a section here called capital cost projections for Muskrat Falls and Labrador-Island Link. And it refers to some of the sensitivities that were done.

Please scroll down a little. Okay, can you stop there?

Okay.

In the second paragraph under that heading it says: "The sensitivity level of +10% applied to the level of capex falls within the outer limit of the 25%sensitivity and has been included as a directional indicator."

Do you know what – if there's any significance to that description of the 10 per cent sensitivity as a directional indicator?

MR. SHAFFER: No.

MR. SIMMONS: Okay.

So, just go back to – oh, let's go to the – sorry, to the next page, page 77 of this report, please.

Scroll up.

Okay, stop there.

So there's a table here which lists the preference for the Interconnected Island Option, the CPW value, starting with the base case CPW then increasing capex 10 per cent, increasing capex 25 and decreasing capex 10 per cent. Now have you still got your calculator out?

MR. SHAFFER: Sorry?

MR. SIMMONS: Have you still got your calculator out?

MR. SHAFFER: I do.

MR. SIMMONS: Okay.

The last column over shows how much the preference for the Interconnected Island Option changes as the capex is changed in the sensitivity analysis. So the second line there, increase capex 10 per cent, shows that the preference for Interconnected Island decreases by 260 – $260 million. See that?

MR. SHAFFER: Yes.

MR. SIMMONS: The next one is increase capex 25 per cent, and when you do that it decreases the preference by $649 million. So I'm going to suggest that there's essentially a linear relationship going on here. If you take the 10 per cent capex increase of 260 and multiply it by 2.5 –

MR. SHAFFER: Where – I'm sorry, where are you at?

MR. SIMMONS: – I think you will get 670.

MR. SHAFFER: Where you at again?

MR. SIMMONS: Second line, increased capex 10 per cent.

MR. SHAFFER: Yes.

MR. SIMMONS: The variance in preference is 260. So if you raise your capital expenditure 10 per cent, the difference between Interconnected and Isolated decreases by $260 million.

MR. SHAFFER: Okay.

MR. SIMMONS: So let's take that 260 and multiply it by 2.5.

MR. SHAFFER: Six-fifty.

MR. SIMMONS: Okay.

The next line there says increase capex 25 per cent; 25 per cent is 2.5 times 10 per cent and the amount of change is 649, almost the same as 650. So I'm suggesting that the 10 per cent capex changes are a directional indicator that can be used as a multiplier by the user to see what the value of capex changes is at other levels.

MR. SHAFFER: And that's under the assumption, as I understand these comparisons that when they did increase capex 10 per cent or decrease it 10 per cent or increase it by 25 per cent, that they're increasing it for both options. Both the Isolated and the Interconnected, versus saying that one will go up 5 per cent, the other would go up 30 per cent, or something like that. So I just want –

MR. SIMMONS: Okay.

MR. SHAFFER: – I just want to make sure we understand that.

MR. SIMMONS: Right. The mathematical relationship though appears true, that we can use the 10 per cent – assuming that, you know, all things are the same – that we can use the 10 per cent as a multiplier to assess the amount of capex change at other percentage increases.

Okay. So the mathematical relationship appears correct.

MR. SHAFFER: Appears so.

MR. SIMMONS: Okay.

MR. SHAFFER: With both – increasing both or decreasing both – both options.

MR. SIMMONS: Yeah.

A couple of questions for you about the fuel price forecast. I'm not sure, Mr. Shaffer, if this would be for you or Mr. Malamed.

MR. SHAFFER: Mr. Malamed.

MR. SIMMONS: There's been some evidence regarding it, and we understand that the Isolated Island case is much more sensitive to fuel price changes than the Interconnected case. I believe that's correct?

MR. MALAMED: Yes.

MR. SIMMONS: Yeah. And significantly more so it would appear.

MR. MALAMED: Yes.

MR. SIMMONS: Okay.

Let's go to your report, page 49, please. That's P-00014. So in the section beginning at line 8 and going down to line 16 there's an extract there from Westney's report which we viewed the PIRA fuel price forecasts and made a recommendation on which of the available forecasts to use. Because PIRA provides a high, a low, an expected and reference oil price forecasts, right? And am I correct that at line 8 and 9 Westney recommended that the expected value forecast should be used?

MR. MALAMED: I'm just gonna first take a read –

MR. SIMMONS: Yes, please do.

MR. MALAMED: – on this section.

"In our Opinion, the Expected Value price forecast is the one that represents the most reasonable choice for Nalcor at Decision Gate 3. We understand Nalcor's CPW analysis require forecasting the price of oil for the next 50 years. Since the Expected Value price forecast represents the full range of outcomes, we consider it to be a more appropriate basis for predicting outcomes over this long time horizon than one based on a specific scenario. Moreover, since it is analogous to the mean value of the oil price probability distribution, it is likely that it will more closely track actual prices than the Reference price forecast will. As a result, as the years go by, actual outcomes are more likely to cluster around the Expected Value price forecast than around the Low, Reference, or High price forecasts. Finally, we note that the use of the Expected Value price forecast is consistent with our experience with a variety of clients and conditions."

MR. SIMMONS: Thank you.

In line 17, the next one there, you note that Nalcor didn't use the expected value forecast, it used the reference price forecast. Correct?

MR. MALAMED: Yes.

MR. SIMMONS: Which is lower?

MR. MALAMED: Sorry?

MR. SIMMONS: Which is lower: expected or reference?

MR. MALAMED: I have to go back to see.

MR. SIMMONS: Okay.

The next line: "Per MHI's January 2012 report, if they had utilized Expected Value, the Isolated Island option would have been higher."

MR. MALAMED: Yes and that comes from the Manitoba Hydro report.

MR. SIMMONS: Right. So by Nalcor selecting the reference price forecast instead of the expected value forecast, the result was that the CPW for the Isolated Island Option was lower than if they had accepted Westney's advice. Is that correct?

MR. MALAMED: You have to do that last piece with me one more time.

MR. SIMMONS: The result of Nalcor having selected the reference price forecast –

MR. MALAMED: Mm-hmm.

MR. SIMMONS: – instead of Westney's recommended expected value forecast, was that the CPW for the Isolated Island Option was lower.

MR. MALAMED: I'm going to have to look and read it to be able to digest to be able to answer you.

MR. SIMMONS: Well, this is what you've said here: "Per MHI's January 2012 report, if they had utilized Expected Value, the Isolated Island option would have been higher."

MR. MALAMED: Yes.

MR. SIMMONS: Do you accept that?

MR. MALAMED: Yes.

MR. SIMMONS: Okay.

MR. MALAMED: Wait, Sir, I did not say that.

MR. SIMMONS: No, do you accept what MHI has said there as being correct?

MR. MALAMED: Yes.

MR. SIMMONS: You don't challenge it in your report?

MR. MALAMED: I don't believe that we do.

MR. SIMMONS: Right.

So if Nalcor had followed Westney's advice and used the expected value PIRA price forecast, the difference between the Isolated Island case and the Integrated Island case would've been greater.

MR. MALAMED: Correct.

MR. SIMMONS: It would've been more.

MR. MALAMED: Yes.

MR. SIMMONS: Just turn back to the previous page, page 48 of your report.

MR. MALAMED: Yes.

MR. SIMMONS: Starting at line 22 there's some discussion there of the PIRA methodology. I don't take it that there was any concern about the use of PIRA data as being an appropriate source for oil price forecasts.

MR. MALAMED: No.

MR. SIMMONS: No? Okay.

You also compared – in line 26 you say you compared the fuel prices to the 2011 EIA Annual Energy Outlook forecast. What forecast is that?

MR. MALAMED: I'd have to pull it up.

MR. SIMMONS: Pardon me?

MR. MALAMED: I'd have to get it pulled up.

MR. SIMMONS: Okay, well, there's a footnote there, footnote 168 says U.S. Energy Information Administration.

MR. MALAMED: Yes.

MR. SIMMONS: So was that the source of that forecast?

MR. MALAMED: I believe it is.

MR. SIMMONS: And you – the observation is that the prices used in the CPW model, based on PIRA, trended consistently with the EIA Annual Energy Outlook for 2011, and then you say with the following exceptions.

MR. MALAMED: Yes.

MR. SIMMONS: And there are three there. The first one is number 2 diesel prices were forecast to grow at a higher rate after 2030 per the EIA, 2.23 per cent versus 2 per cent in the CPW model. Now, do you know what type of generation units used number 2 diesel?

MR. MALAMED: I'm not the right person to ask.

MR. SIMMONS: Okay, well, I'm gonna suggest all the combustion turbines and the CTs

and the CCCTs, combined cycle combustion turbines, all use number 2 diesel.

MR. MALAMED: Okay.

MR. SIMMONS: Now, in the Isolated Island system expansion plan, am I correct that beginning around 2030 up to 2036 the Holyrood plant was going to be phased out and it would be substantially replaced by CTs and CCCTs.

MR. MALAMED: I understand that. Yeah.

MR. SIMMONS: Yup, okay. So after 2030 the use of number 2 diesel would rise in the system.

MR. MALAMED: I'm going to believe what you're telling me. I'm going to have to –

MR. SIMMONS: Okay.

MR. MALAMED: I'd have to look.

MR. SIMMONS: Well, let's say that that's the output. If that's the case, then the CPW estimate used by Nalcor for the Isolated Island case, if you were to accept the EIA price forecast, the CPW calculated by Nalcor would actually be low because it used a lower per cent for the growth in the cost of number 2 diesel and the EIA forecast used.

MR. MALAMED: All things being equal I'd agree.

MR. SIMMONS: Pardon me?

MR. MALAMED: If all things were equal –

MR. SIMMONS: Yes.

MR. MALAMED: – yes, nothing else –

MR. SIMMONS: Okay.

MR. MALAMED: – changed then, yes, I would agree.

MR. SIMMONS: Now, the next two bullets deal with number 6 oil and both 0.07 per cent sulphur and 2.2 per cent sulphur. Now, I'm going to suggest something to you; you can tell me if you think this is wrong or not. Number 6 oil is burned in Holyrood, in the Holyrood plant. And it had been 2.2 per cent sulphur, it's moved to 0.7 per cent sulphur, because it pollutes less and costs more. Does that sound correct?

MR. MALAMED: I'm going to believe it.

MR. SIMMONS: You can trust me on it. Okay.

So that one is only used in the Holyrood plant, and these two points say that if you follow the EIA forecast, then it's predicted that the cost increase in those is going to be less than was used in the CPW calculation by Nalcor. Is that what those say?

MR. MALAMED: Yes.

MR. SIMMONS: And but they're looking at the period starting in 2030.

MR. MALAMED: Yes.

MR. SIMMONS: And – but they're looking at the period starting in 2030.

MR. MALAMED: Yes.

MR. SIMMONS: And if we accept that the Isolated Island Option expansion plan was going to phase out Holyrood, between 2030 and 2036, does it matter what the price of 6 oil is going to be after that time frame?

MR. MALAMED: I'm gonna have to – I don't know that I can just answer that. I'd have to write it down and start doing a bit of looking into what you're asking me.

MR. SIMMONS: Okay, thank you.

MR. MALAMED: There's a lot of factors that you just put out.

MR. SIMMONS: Okay, only one other question, page 40 of your report, please.

This is in a section headed on the previous page, Benchmarking, and it's a collection of different comments that you've made. You highlighted some of these in direct examination. And on page 40, I'll bring you to lines 9 to 12 and it deals with transmission line losses.

It says: "… NSUARB utilized transmission losses of 9.2 %. This was higher than the transmission losses of 5.15% used in Nalcor's CPW analysis. Based on our analysis, 5.15% was considered acceptable; however, the impact of using higher transmission losses up to 10% would have resulted in a possible increase to the CPW of the Interconnected Island Option; …." So you're drawing a conclusion here based on different percentage figures that you saw used by the Nova Scotia board and what you saw in Nalcor's CPW analysis.

My first question is: What did you do to investigate the reasons for the different percentage line losses in each scenario?

MR. MALAMED: That was outside of our mandate to go investigate the reasons.

MR. SIMMONS: Do you know what transmission line, from where to where, the Nova Scotia line losses of 9.2 per cent apply to?

MR. MALAMED: I do not. But I could find out for you.

MR. SIMMONS: Do you know what transmission line, from where to where, the Nalcor CPW analysis of 5.15 per cent apply to?

MR. MALAMED: I'd have to get that for you.

MR. SIMMONS: Okay.

Do you know what affects, what factors affect transmission line losses?

MR. MALAMED: You'd have to ask somebody who is an expert in that area.

MR. SIMMONS: Okay.

Do you just select a number to use in the CPW for transmission line losses or is that an engineering question, where there's a right and wrong answer?

MR. MALAMED: I don't know the answer. So an expert would be – even if you're telling me an engineer, I'm going to believe it's an engineer.

MR. SIMMONS: Okay.

So how do you feel qualified to comment on the impact of using a higher transmission line losses than the 5.15 per cent that was calculated for the Interconnected Island CPW?

MR. MALAMED: I'm comparing what was used, the 9.2, and as – just for illustrative, I'm showing a 10 per cent. I think that – is that your question I'm answering?

MR. SIMMONS: Is it to present – you're presenting a comparison and you're suggesting that something could've been done differently, and it would have had an impact on the CPW. That's an important question here. That's a core question for this Commission of Inquiry, is to compare the two options and the values of the two options.

And I'm asking you: Do you feel it's responsible for you to cast this suggestion out here that those transmission line losses made a difference to the CPW, when you've done nothing to investigate why there's a difference between the two numbers?

MR. MALAMED: So what I'm saying over here, is there's a possible increase to the CPW of the Interconnected Island Option –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – meaning that the Interconnected Island Option price would be higher –

MR. SIMMONS: Mm-hmm.

MR. MALAMED: – which would mean –

MR. SIMMONS: My question is: Is that a responsible suggestion to throw out here without having done any investigation into the reasons for the differences between the two percentage numbers?

I'm going to suggest it's not.

Do you have a response?

MR. MALAMED: I do.

My response is that what we did was we compared it to the NSUARB.

MR. SIMMONS: Okay.

Thank you very much, gentleman.

I don't have any other questions for either of you.

MR. SHAFFER: Thank you, Mr. Simmons.

THE COMMISSIONER: Thank you.

Concerned Citizens Coalition.

MR. BUDDEN: Good day, gentlemen.

MR. SHAFFER: Good morning – good afternoon.

MR. BUDDEN: As you will recall from earlier meetings, my name is Geoff Budden. I represent the Concerned Citizens Coalition, which was formed by individuals who, for a number of years, have been observers and critics of the Muskrat Falls Project.

I'll be directing most of my questions at Mr. Malamed, simply because you've done most of the talking so far, but it's of no consequence to me – unless I say otherwise – who actually answers it. So if Mr. Shaffer, you feel that you're in a better position to answer, you answer. It's fine by me.

For the benefit of the Clerk, I anticipate that I will be referring to two exhibits – P-00014 and P-00041 – and also to Friday's transcript, which I don't have a number for but which we received over the weekend.

And the first thing I would like to do, gentlemen, is to discuss the Lower Churchill power after 19 – after 2041 option. So perhaps we can start by turning to page 8 of your report, which is Exhibit 00014. And you can look at the – at line 14 there's a quote – it's fairly short, so I'll read it to you with a relevant portion edited out.

You conclude there that, quote, Nalcor may have inappropriately eliminated the option of deferring the development of Lower Churchill power until 2041. And in support of that decision – that certain of the – you assert that certain of the assumptions that Nalcor relied on were inconsistent with the findings of the Nova Scotia Utility and Review Board – which the acronym is the NSUARB.

Firstly, why did you give weight to the findings of the NSUARB?

MR. MALAMED: We gave weight to it to give a different perspective.

MR. BUDDEN: And of course there are many perspectives out there. What is it about the report of this public utility that gave you a certain confidence that it was an appropriate source to cite in support of what you've stated here?

MR. MALAMED: They were a utility group within Canada.

MR. BUDDEN: Okay.

And you're aware that hearings were held, expert evidence was called, knowledgeable witnesses spoke and so forth? You were aware of that – that's how it unfolded before the Nova Scotia review board?

MR. MALAMED: Could you say that question again, I'm sorry?

MR. BUDDEN: Sure. And again, just continuing your answer – you are aware, of course, that the report that you speak of was generated following a process of hearings, of expert witnesses being called, of testimony from knowledgeable persons and so forth. You were aware of that?

MR. MALAMED: I understand that.

MR. BUDDEN: Yes, okay.

Are you also familiar with the report of the Joint Review Panel, dated August 2011, which is at tab – or Exhibit P-00041 of the exhibit list? That is the federal-provincial environmental assessment, as it's also known as.

MR. MALAMED: Is that in my –

MR. BUDDEN: That's Exhibit P-00041.

MR. MALAMED: Is that one of the documents I've listed in my appendix?

MR. BUDDEN: I believe it is referred to in your book. I think around page 59, but I don't have the appendix in front of me at this moment.

MR. MALAMED: Where on page 59? If you could give me some focus, please.

MR. BUDDEN: Okay, the – for now at least, perhaps we can move on. If you need the cite we can address it later. I think once I start quoting it, you'll be fairly quickly aware whether you're familiar with it or not.

Perhaps we could turn to page 68 of that exhibit, Madam Clerk.

There's a section there that, the portion beginning with: The panel concludes. And I'd like you – perhaps you could read that just to – yeah, it's in boldface there in the box.

Would you –

MR. MALAMED: Sure.

"The Panel concludes that Nalcor's analysis that showed Muskrat Falls to be the best and least cost way to meet domestic demand requirements is inadequate and an independent analysis of economic, energy and broad-based environmental considerations of alternatives is required."

MR. BUDDEN: Are you – to your knowledge has such – was such an independent analysis of economic energy and broad-based environmental considerations of alternatives – had that been completed by the sanction date to your knowledge?

MR. MALAMED: I don't believe it had.

MR. BUDDEN: Pardon?

MR. MALAMED: I don't believe so.

MR. BUDDEN: Okay.

MR. MALAMED: Or I should say not that I've seen.

MR. BUDDEN: Okay.

Perhaps you could scroll back to I believe it is page 60, Madam Clerk. And could you continue scrolling, please? I'll just be one second, I have the source here.

I'll return to that in a few minutes. I just want to move on for now and speak about something else.

You have, at a number of points throughout your report and both written and your evidence on Friday, spoke of the Navigant report. Is that a report that you critically reviewed or was it a source that you cited where you felt appropriate?

MR. MALAMED: It was a source.

MR. BUDDEN: Okay.

I'd like for you to discuss generally – that, of course, is a report completed by a consulting firm – of what you have to say, I guess, about the inherent risk in using consulting firms and informing some of the issues we have here today, given that in some cases we have ongoing relationships with the clients and, obviously, desire to maintain those relationships.

MR. MALAMED: It sounds to me that you're inferring about independence, but I'm not the right person to make an –

MR. BUDDEN: Pardon?

MR. MALAMED: I'm not the right person to provide an opinion on independence.

MR. BUDDEN: Yeah, okay.

Who was on the executive committee of the Lower Churchill Project during the period of time at issue?

MR. MALAMED: I'd have to take a break, get the list for you and come back.

MR. BUDDEN: Okay.

Would Gilbert Bennett have been on that committee?

MR. MALAMED: I believe he was.

MR. BUDDEN: Okay and Mr. Ed Martin?

MR. MALAMED: I'm going to have to go back and check.

MR. BUDDEN: Okay, sure.

I'd like you to go to page 70 of your transcript of the evidence on Friday.

MS. O'BRIEN: Just to clarify, Mr. Budden, that transcript was just prepared in draft.

MR. BUDDEN: Okay.

MS. O'BRIEN: So we circulated it to counsel because this was a multi-day interview to –

MR. BUDDEN: Sure.

MS. O'BRIEN: – assist you in your preparation. Until we get the final double-checked version back, it won't be posted up on the website and we do not have it entered as an exhibit and the witnesses won't have access to it. So you can feel free to read out from what you have there and that can always be verified against the final approved.

MR. BUDDEN: Okay. Thank you.

You speak there about a – and I'm referring here to the evidence you gave to the effect that I'm quoting here. There's an IRP – firstly, what was the – rather, the IPR. What was the IPR?

MR. MALAMED: The Independent Project Review.

MR. BUDDEN: Okay and what was the purpose of the Independent Project Review in this context?

MR. MALAMED: Is there a page reference from you?

MR. BUDDEN: The – I have a transcript page reference, but perhaps I'll read the sentence and then that'll give you enough context, I would think, to answer the question.

There's an IPR presentation that was dated August 31, 2012, for DG3. We actually identified two versions of the IPR presentation dated August 31, 2012, for DG3.

MR. MALAMED: Mm-hmm.

MR. BUDDEN: Does that refresh you?

MR. MALAMED: Yes.

MR. BUDDEN: Okay.

When we compared both versions we identified differences. And what is in front of you on the screen is an example of the differences. And then you read the original and you – it stated there.

Firstly, do have any idea how this came to be that there were two draft versions? Do you have any idea who approved or authored these changes?

MR. MALAMED: I do not know.

MR. BUDDEN: Okay.

And when you compared the versions, you noted there were a number of differences. You use the plural, but when you spoke you only gave one example.

MR. MALAMED: That's correct.

MR. BUDDEN: And could you perhaps give some other examples of what you encountered in those two changed versions?

MR. MALAMED: I could but I would need some time to go and refer to my notes.

MR. BUDDEN: Okay. It's not in your report, I believe, but you have in it in your notes I take it?

MR. MALAMED: I may.

MR. BUDDEN: Okay. Well, perhaps we can return to that if necessary.

MR. SHAFFER: I'd like to answer, point out that we did ask – Mr. Westney was part of the IPR. And from what I recall, he was the one that drafted the presentation. We asked him why the difference and he couldn't tell us.

MR. BUDDEN: Okay.

And did you ask other people who might possibly been able to answer that question?

MR. SHAFFER: I did not. I don't know if Mr. Malamed did.

MR. BUDDEN: Okay. You can't recall off –

MR. SHAFFER: I can't recall.

MR. BUDDEN: At the moment, yeah.

MR. SHAFFER: We asked the man who wrote it.

MR. BUDDEN: Okay.

You also testified on Friday as to the failure of Nalcor to actually strike a steering committee pre-sanction. They spoke of the need for one, but if I understand your evidence, none was actually struck. Is this failure to actually strike a committee in accordance with best practices for a megaproject of this sort?

MR. MALAMED: I can't comment on that.

MR. BUDDEN: Okay.

You did comment on the failure to strike. You thought that was noteworthy.

MR. MALAMED: The failure to …?

MR. BUDDEN: To strike the steering committee.

MR. MALAMED: I commented on the observation of it.

MR. BUDDEN: Okay and –

MR. MALAMED: But not –

MR. BUDDEN: – you obviously felt it was significant enough to make an observation about – do you draw any further conclusions of any sort with regard to that?

MR. MALAMED: No.

MR. BUDDEN: Okay.

I'd like to go now to your report – on page 12 of your report. I won't be referring to directly but you may wish to in your answer.

On that – in that report on page 12 you advise that the Decision Gate process is considered to be in compliance with the best practices for megaprojects. Are you saying that as a general observation that a Decision Gate process is best practices? Or are you specifically saying that the particular Decision Gate process utilized by Nalcor, in terms of the issues that are found at the various Gates, was best practices? In other words, is it a general observation about Decision Gates or a specific observation about these Decision Gates?

MR. MALAMED: I want to answer that question. Just the page reference that you gave me, I don't know that I'm seeing it, necessarily. Oh, okay.

I'm talking about the Decision Gate process in general.

MR. BUDDEN: Okay. Okay.

If we can go back to P-00041, which is the joint report, and in this instance it would be page 50 of that report, and under 4.1.1. Could you perhaps, Mr. Malamed, just read from Nalcor down to where the bullets begin? I don't need you to read the bullets themselves.

MR. MALAMED: Sure.

"Nalcor stated at the hearing that, since 1980, the price of fossil fuels has increased significantly and residents of Newfoundland and Labrador have increasingly relied on thermal sources of energy to meet their domestic demands. Further, individuals and governments around the world have begun to realize the significance of global warming, the contributions of greenhouse gas emissions to global warming, and the need for energy sources that are less greenhouse gas intensive. As such, Nalcor has defined the need for the Project as begin to: …."

MR. BUDDEN: And then they list a number of options and would you just read the second one.

MR. MALAMED: Develop the province's hydroelectric resources for the benefit of Newfoundland and Labrador and its residents, in accordance with the provincial energy policy.

MR. BUDDEN: Okay.

And you would – would you agree with me that that is a fairly specific assertion, that particular bullet is, while the other three bullets are all fairly general observations about things that are generally good to have without identifying a specific means to get there?

MR. MALAMED: That's fair to say.

MR. BUDDEN: Okay.

And I note that the word "need" is used. And I'll repeat: As such, Nalcor has defined the need for the project as being to: develop the province's hydroelectric resources and so forth.

So would you acknowledge that from the reading of this, which this report itself dates from August of 2011, which was, as we know, well in advance of – a year in advance of sanction date, would you agree that as early as this date, Nalcor had identified the development of hydroelectric resources as a need?

MR. MALAMED: Yes.

MR. BUDDEN: Okay. And in the context of what we've looked at so far in this Inquiry, would you agree that when we're talking about hydroelectric resources, we really are talking about dams on the Lower Churchill? Would you agree with me there?

MR. MALAMED: I can't say that with certainty.

MR. BUDDEN: Okay. From your review in your report of the various options, say on the Isolated Island Option, you would agree that there is no significant hydroelectric development contemplated there, certainly nothing on any major scale. Would you agree with me with that?

MR. MALAMED: Yes.

MR. BUDDEN: Okay. So that essentially would leave, you would agree, dams on the lower Churchill?

MR. MALAMED: Yes.

MR. BUDDEN: Okay.

Does that, in your view, have any impact on the best practices, or rather the Gateway – you've already established that the Gateway Decision Gate model was best practices in a general sense. Dealing with the specific sense, do you see a contradiction between Nalcor contemporaneously identifying a need for hydroelectric development and the Decision Gate issues as they were set out?

MR. MALAMED: I don't think that I'm the best person to answer that question.

MR. BUDDEN: Okay. Why not?

MR. MALAMED: I think that Nalcor needs to answer that question.

MR. BUDDEN: Okay.

I'd like to talk about conservation and demand management, and just for – to refresh us all, can you basically explain what conservation and demand management is?

MR. MALAMED: Conservation demand management is a method of reducing use through incentives or products, for example, a smart thermostat

MR. BUDDEN: Okay. And would you agree – I believe you said in your report at several points and, again, you said on Friday in your direct evidence, that the CDM were not factored into load forecast by Nalcor. Would you agree that that is an accurate statement?

MR. MALAMED: I'd like to actually just read the statement from here.

MR. BUDDEN: Okay. I can perhaps help you. If you go to Page 33 of the P-00014 Exhibit. It's also on Page 8.

MR. MALAMED: Can you ask me your question again, I'm sorry

MR. BUDDEN: Oh, sure. The question was: Would you agree with me when I assert that your report states at several points and you confirmed your testimony on Friday that conservation demand management program adjustments over the long term were not factored into the load forecast?

MR. MALAMED: That's correct. So if I take you to line 26, 27, 28.

MR. BUDDEN: Yes.

MR. MALAMED: You'll see the paragraph starts with: Conservation and demand management program adjustments over the long term were not factored into the load forecast.

MR. BUDDEN: Okay.

MR. MALAMED: Did you want me to continue reading?

MR. BUDDEN: Pardon?

MR. MALAMED: Do you want me to continue with the paragraph?

MR. BUDDEN: No, no, no, you've done it.

What are the consequences that, in your opinion, have flowed from the failure to consider conservation and demand management?

MR. MALAMED: I – in my opinion, I didn't make an opinion on what out flow is.

MR. BUDDEN: Okay. What impact might it have had on the ability to forecast load?

MR. MALAMED: If conservation and demand management should have been a factor, it would have reduced the load.

MR. BUDDEN: Okay. So, therefore, the failure to consider it impacted the ability to appropriately contemplate load.

MR. MALAMED: I can't say that for sure.

MR. BUDDEN: Calculate, rather.

MR. MALAMED: Yeah. I can't say that for sure.

MR. BUDDEN: May have?

MR. MALAMED: It may have.

MR. BUDDEN: Yes. And, therefore, it follows that a failure to properly consider it would be a shortcoming in the assessment process.

MR. MALAMED: Again, I have not made that opinion. I'm just bringing to the attention that it was not applied.

MR. BUDDEN: And the reason you brought it to the attention was because it may have influenced the calculation of load and, therefore, the assessment process.

MR. MALAMED: The reason that I addressed it was I feel it was part of our engagement, part of one of the phases that I discussed.

MR. BUDDEN: Okay. Are you aware of any North American, or say, Canadian or American, utilities that carry out their long-term planning without taking into account future CDM?

MR. MALAMED: I don't think it would be fair for me to give an opinion on that. I'm not an expert on that.

MR. BUDDEN: Okay.

We just spoke of load forecast, but perhaps you can just define it again for all of our benefit.

MR. MALAMED: Load forecast is forecasting the energy requirements and the electricity demands for future periods.

MR. BUDDEN: Okay. And, again, I'll – why is it relevant to the make – to the determination of the decision as to whether to proceed with the Isolated Island Option or the Interconnected Island Option?

MR. MALAMED: That's part of planning, you need to know how much electricity is going to be needed.

MR. BUDDEN: Okay. And it also follows that the lower the load forecast, the more attractive or even feasible the Isolated Island Option would be. And the higher the load forecast, the less attractive or even – or, rather, the more

attractive or even necessary the Interconnected Island Option would be.

MR. MALAMED: I'd have to say all of the factors to be able to give that opinion.

MR. BUDDEN: But that would be a factor.

MR. MALAMED: Could you, please –

MR. BUDDEN: It's not a major point –

MR. MALAMED: Right.

MR. BUDDEN: – but I guess what I'm saying is that if your load forecast is low, that makes the Isolated Island Option a much more feasible and attractive alternative, but if your load forecast is high, than the Interconnected Island Option becomes more attractive and perhaps even necessary beyond a certain point.

MR. MALAMED: I don't know that I can really answer that question because it's not just one factor affecting the other, the scenarios could be completely different. If the load was actually decreased, potentially, this wouldn't be the solution that would have come up.

MR. BUDDEN: Therefore it is an important factor. I'm not suggesting it's the only factor, but therefore it's an important factor when one is considering whether to proceed with the Isolated Island versus the Interconnected Island Options for Newfoundland's energy future.

MR. MALAMED: I think it's fair to say that load is an important input into CPW.

MR. BUDDEN: Okay.

MR. SHAFFER: I have a comment. As we already saw, the lower the load, the decrease in the CPW would be more impactful on the Isolated Option than it would on the Interconnected Option, just as the higher the load would impact it, and that's due to it has more of an impact on fuel.

MR. MALAMED: Okay.

MR. BUDDEN: And so that is the answer, the impact on fuel? Or one of the answers?

MR. SHAFFER: Well, that's a major impact. I don't know what the others would be necessarily right now.

MR. BUDDEN: Okay.

This might be a good point to turn to page 54 of your report, P-00014, and I'd particularly like to look to the Summary of Sensitivities chart, which you have it on that page.

The ninth line down, which you have entitled: "Low Load Growth (50% of 2010 PLF post Vale."

Can you just, again, walk us across that line and explain the – its significance?

MR. MALAMED: I'm not sure what you'd like me to explain about it.

MR. BUDDEN: Okay.

The – well, what is the purpose of including that particular line? What do you intend it to illustrate?

MR. MALAMED: So I didn't include that line. That line was included, but it should illustrate what would happen with industrial decrease.

MR. BUDDEN: Yeah.

MR. SHAFFER: I mean, you could see the impact on the numbers on the CPW, right?

MR. BUDDEN: Pardon?

MR. SHAFFER: You could see the impact on the numbers on the CPW when you compare the two options.

MR. BUDDEN: And that impact is?

MR. SHAFFER: According to this table, Isolated drops about 1.5 billion; Interconnected doesn't change.

MR. BUDDEN: Okay.

MR. SHAFFER: Or it changes very little.

MR. BUDDEN: Yeah. And that is, of course –

MR. SHAFFER: Yeah, that's right. It changes little, according to this.

MR. BUDDEN: Okay.

And the reason it changes very little is fuel is a relatively minor component of the Interconnected Island but, obviously, a major component of the Isolated Island calculations.

MR. SHAFFER: I missed that question, Sir.

MR. BUDDEN: Okay.

And the reason it doesn't change for the Interconnected Island Option is because fuel is not a major component of that calculation but is a major component of the Isolated Island calculation.

MR. SHAFFER: I would assume so, based on what I testified to on Friday on the impact of – on the drop in fuel prices or the increase in fuel prices.

MR. BUDDEN: Okay.

MR. SHAFFER: Yeah. I assume that'd be – but that'd be a usage.

MR. BUDDEN: Pardon?

MR. SHAFFER: That'd be a drop in the usage of it. So, obviously, less usage means less fuel is gonna be burned. (Inaudible) that's what it comes down to.

MR. BUDDEN: Which is a major – obviously, a major justification for the Interconnected Island Option is that the use of fuel with this volatile price, it could drop and so forth.

MR. SHAFFER: Based on the CPW calculation that they did at DG3, fuel was a major factor, yes.

MR. BUDDEN: Okay.

I'm going to read a little section from your transcript, your evidence of – the transcript of your evidence from Friday. And I'm reading now, Ms. O'Brien said: "… we're going to be hearing a fair bit of evidence about the time period that Nalcor used to assess the options and that will be – I believe the evidence will be it was a 50-year time period that they used.

"What was Grant Thornton's finding with respect to the appropriateness of the time period that Nalcor used to assess this question?"

And, Sir, Mr. Malamed, you answered: "Again, I'd like to read it to you from the report."

Ms. O'Brien came back: "Again, my note is that it's also on page 42 and my reference is to line 22."

So perhaps we can turn to page 42, line 22, of your report. And your conclusion, Mr. Malamed, that you gave on Friday was: "The time Period of Study used by Nalcor in assessing the least-cost option is within acceptable utilities industry practice."

Is that an answer you agree with here today?

MR. MALAMED: Yes.

MR. BUDDEN: Okay.

I guess my question, Mr. Malamed, is: Are you aware of any other utilities that attempt to forecast load 50 years into the future and what circumstances they might do so?

MR. MALAMED: I wasn't engaged to do that.

MR. BUDDEN: Okay.

If I were to suggest to you that really the only circumstance in which that is done is in connection to the sanctioning of large hydroelectric projects, such as the Site C dam in Quebec.

Would you agree or disagree with me, or do you have the knowledge to form an opinion?

MR. MALAMED: I don't have the knowledge to form an opinion.

MR. BUDDEN: Okay.

MR. MALAMED: But I believe you.

MR. BUDDEN: Okay.

If we could turn to page 36 of your report, and I'll direct your attention to an assertion, make it line 3. And I'd ask you just to read it.

MR. MALAMED: "There is a lack of quality control review surrounding the load forecasting process. The lack of such review creates a risk that an error in the load forecasting process would go undetected."

MR. BUDDEN: Okay.

And, again, what do you see as the lack of quality control? What in particular prompts you to that conclusion, or prompted you to that conclusion?

MR. MALAMED: During one of the interviews questions regarding the load were asked. And I'll take you to page 35, line 22: "According to the Senior Market Analyst 'there is no official QC process, except that it's (I guess) the process is you are forecasting performance …. There is no formal process of saying yes that forecast is a good forecast or that forecast is approved.'"

Further down the page, before he starts to ask about how it is QCed or how it is reviewed, the response on 26 starts with: "I would review it but I mean I'm not a load forecaster. There would have to be something grossly wrong with it for me to you know. We put faith in people that we have there. The methodologies that we use have been reviewed by people that know – and accept it as being reasonable. If I had to sit down and do a load forecast – no, I wouldn't know where to start."

MR. BUDDEN: Sorry to interrupt you. Who, again, is saying that?

MR. MALAMED: That's Nalcor's manager of system planning.

MR. BUDDEN: Okay.

Continue, please.

MR. MALAMED: That was it.

MR. BUDDEN: You continue reading – okay, yeah. And your next sentence – well, just read 30 and 31, if you would.

MR. MALAMED: "During our audit, we asked Nalcor to describe the internal review process of the load forecast conducted. The following response was provided by Nalcor."

MR. BUDDEN: Okay, fair enough. The – elsewhere – and I can find it in your report, but I'll just – for now at least. Do you recall that an earlier incarnation of Nalcor – component part of Nalcor, Newfoundland Hydro, made load forecasts that overstated the forecast by an average of 8.9 per cent over 10 years? Do you remember coming to that conclusion?

MR. MALAMED: Yes.

MR. BUDDEN: Okay. That's an average over 10 years. What do you make of such an overstatement?

MR. MALAMED: Again, I did not provide opinion. I just provided the findings and observations.

MR. BUDDEN: Okay. Did that overstatement play any role – contribute at all to your conclusion that you just made about the lack of quality control? Was it a separate issue entirely?

MR. MALAMED: Sorry, could you ask the question again?

MR. BUDDEN: Okay, did that overstatement – that 8.9 per cent average annual overstatement – did that play any role at all in your conclusion about quality control? Or was it a separate issue entirely.

MR. MALAMED: No, that was a separate issue.

MR. BUDDEN: Okay.

We're going to talk now about project cost and – which really follows from page 58 of your report so perhaps we can go there and see. And perhaps we can start by you reading the first two sentences, beginning at line 10.

MR. SHAFFER: We're on page 58?

MR. BUDDEN: We are.

MR. SHAFFER: "Nalcor engage SNC as the Engineering, Procurement and Construction Management … contractor specifically for their experience in hydro-electric projects." Should I continue?

MR. BUDDEN: Yes, please.

MR. SHAFFER: "SNC's engineers were involved with the design of the project and their estimating team completed approximately 70% of the base estimate."

MR. BUDDEN: That's fine. Is it unusual for estimates in megaprojects be arrived at in this fashion: a portion done by a contracted experts – by a contracted expert and a portion done otherwise?

MR. SHAFFER: I wouldn't know. I don't know.

MR. BUDDEN: Wouldn't know? Okay. The otherwise portion, the 30 per cent that wasn't done by SNC, does that appear to be done in-house?

MR. SHAFFER: That's my understanding. Yes.

MR. BUDDEN: Okay, have you seen SNC-Lavalin's of terms of engagement with respect to this estimate?

MR. SHAFFER: I've seen the contract. It's a voluminous document. I don't know if I've seen the engagement letter per se.

MR. BUDDEN: Okay.

All I'm interested in is does that specify that SNC-Lavalin is only responsible for 70 per cent of the estimates, do you recall that?

MR. SHAFFER: Without the contract I can't answer that question.

MR. BUDDEN: Okay.

Would you not expect such a significant issue to be addressed in the contract or in the engagement letter?

MR. SHAFFER: I'm not gonna comment on that. I don't have an opinion on that.

MR. BUDDEN: Pardon?

MR. SHAFFER: I don't have an opinion on that.

MR. BUDDEN: Okay.

Was, in your opinion, SNC a qualified party to have been contracted to perform such an exercise in estimation – cost estimation.

MR. SHAFFER: I don't know if I'm in a position to determine if they're qualified or not qualified. But however, I would say I'm – that we were told they were hired for their experience in hydro projects. And based on a review of their website and talking to SNC folks, they seem to have a lot of experience on it, and additionally, I believe they're a global company that gets involved in these projects. But if that's the basis for saying they seem qualified to me, yes.

MR. BUDDEN: So a global company with experience in megaprojects?

MR. SHAFFER: Based on what I looked at and talking to them – their folks about their experience.

MR. BUDDEN: Okay, and since it was an answer to a question I put to you about their qualifications, am I assuming you're inferring from that that those are SNC-Lavalin's qualifications for undertaking such an estimate project?

MR. SHAFFER: Again, just based on us talking to them and also based on looking at their website and just the fact that Nalcor hired them. Why would they hire somebody that wasn't qualified?

MR. BUDDEN: Fair enough. Well, continuing, the 30 per cent that was done in house, do you have any idea who did those qualifications and their qualifications?

MR. SHAFFER: No.

MR. BUDDEN: Who did those quantifications – those estimates – and their qualifications?

MR. SHAFFER: No.

MR. BUDDEN: Okay.

I guess that was two questions there. You have no idea – it hasn't come up in your work who actually did those estimates?

MR. SHAFFER: No, and the reason why is that it's not an issue for me. And the reason why I say that is you had experts looking at this – John Hollmann looked at it – and he felt it was a good estimate.

MR. BUDDEN: Okay.

There is also a discussion there about the departure from, quote unquote, normal working conditions which we have here, meaning the project, that that departure justified an increase in – of 20 per cent, I believe it was. And the departure from normal conditions, of course, as we all know, involve building a hydroelectric project in northern Canada – in Labrador – with our – the weather conditions that are found here and being quite a distance from the likely source of most of the workforce.

In those circumstances, does a 20 per cent increase appear to be reasonable?

MR. SHAFFER: I don't know if it's reasonable, however, in talking with Mr. Hollman, he had a – he did have concern of the risk of the project and the contingency, which I would think that any potential cost overruns – because of the working conditions and the productivity issues, et cetera – would have been addressed there.

MR. BUDDEN: Okay, so that would all be captured in the debate about whether to use a P50 or use a P75 or so forth?

MR. SHAFFER: And should strategic be included.

MR. BUDDEN: Okay.

With respect to this – which flows nicely into the next issue – the issue of the P50 and the other factors used – firstly, can you just explain, I guess, again for us what is meant when we speak of a P50 or a P70 or so forth?

MR. SHAFFER: P is the probability of a cost overrun or an underrun. P50 means you have 50/50 chance of it going either way. P75 means there is a 75 per chance your costs of the project will come in at that price or less, 25 per cent chance that there's gonna be an overrun.

MR. BUDDEN: Okay.

And what did your research determine would be the appropriate P-factor for a project such as Muskrat Falls?

MR. SHAFFER: I'm not in the position to testify on what's an appropriate factor. I'm only reporting what was told to me – what the experts thought what the factor – what they have seen with their customers –

MR. BUDDEN: Okay.

MR. SHAFFER: – on these types of projects.

MR. BUDDEN: You can answer the question that way. What did these experts tell you?

MR. SHAFFER: John Hollman indicated he's – 70 – P70 to P90. SNC-Lavalin, the two individuals that we spoke to – meant – indicted a P85. And Derek Hennessey, who was our outside consultant that we used in this work, indicated he's seen clients that use P75.

MR. BUDDEN: Okay.

And what, in practical terms, what are the cost consequences of using a P75 as opposed to a P50?

MR. SHAFFER: It increases the cost contingency, which would increase the capital cost estimate.

MR. BUDDEN: And to use that example, by how much?

MR. SHAFFER: From P50 to a P75?

MR. BUDDEN: Correct.

MR. SHAFFER: Are we including tactical and strategic?

MR. BUDDEN: Pardon?

MR. SHAFFER: Are we including tactical and strategic?

MR. BUDDEN: Answer the question as you see fit.

MR. BUDDEN: Yeah.

MR. SHAFFER: I mean based on Mr. Kean, that I testified to earlier when Mr. Simmons was cross-examining me, Mr. Kean indicated at a P75 would increase the cost of the project by – the estimate – by $1.3 billon, which includes strategic risk.

MR. BUDDEN: Okay.

MR. SHAFFER: I can tell you –give me a second here – that at aP75, if we're just talking tactical, I already calculated that and it would increase it anywhere – I think it was from $360 to $757 million. It's in my report. That's going up to a P90, for example.

MR. BUDDEN: Pardon?

MR. SHAFFER: That's using a P90 if I remember correctly.

MR. BUDDEN: Okay.

And the experts that you quoted ranged – they suggested figures, I believe, that range from P70 on upwards to a P85, I believe?

MR. SHAFFER: Up to a P90.

MR. BUDDEN: Up to P90? Okay.

Would you agree or disagree with the assertion that a P50 is commonly used for Canadian projects?

MR. SHAFFER: My only direct knowledge of that is what I've seen here. What I've seen based on what Mr. Simmons showed me that we talked about, in addition to, my understanding, what was used in the Keeyask Project.

MR. BUDDEN: Okay. So to answer my question –

MR. SHAFFER: P50 was used in all – in those cases.

MR. BUDDEN: But the experts you used seemed to suggest that a higher factor would be required.

MR. SHAFFER: I mean it's up to the owner, as I understand it, right? It's up to the decision maker what P-factor they want to use. But I'm saying that what they told me is that the folks that they work with use the ranges that I testified to.

MR. BUDDEN: Okay.

Would a legitimate best practices justification of using a P50 include – to quote: Keep the project team's feet to the fire, keep the contractor's feet to the fire?

MR. SHAFFER: That's a decision – that's up to the decision maker.

MR. BUDDEN: Okay.

But we're here, obviously, to evaluate the decisions of the decision maker in comparing various options. So perhaps you could go a little beyond this decision, the decision maker. Would that be in accordance with best practices to use such a rationale?

MR. SHAFFER: I don't have an opinion on that.

MR. BUDDEN: Okay.

With respect to schedule overrun, what are the financial consequences of such a schedule overrun?

MR. SHAFFER: Well, one would think your schedule gets pushed back which means your costs are going to go up. That's it in a nutshell.

MR. BUDDEN: Okay.

And go up in a significant way, in a minor way? Have you any opinion on that or it's just a general assertion that the longer the project goes,

if it goes beyond its contemplated date, it inevitably will cost more?

MR. SHAFFER: Well, it wasn't measured.

And what I mean by that is that according to the draft Hollmann report that he sent to Nalcor, that when he spoke about the schedule risk he said it was irrelevant to cost estimates as there was no attempt to integrate cost and schedule risk analysis. And I took that to mean that there was no quantification of what would happen if the project misses by a year, let's say.

MR. BUDDEN: Okay. So you're not aware of any such quantification at all?

MR. SHAFFER: I haven't seen any, no.

MR. BUDDEN: Okay.

Now, going back – just to return for one last question around that P50 figure that was used – are you aware of the specific individuals who would have approved the use of that particular factor?

MR. SHAFFER: Mr. Martin was the Gatekeeper, so from my perspective it comes down to his decision.

MR. BUDDEN: Okay.

A P1 would mean, if I'm correct, that there's only a 1 per cent chance that a particular project would come in on schedule?

MR. SHAFFER: That's correct.

MR. BUDDEN: Okay.

And in the context of this case that was, of course, the – within the knowledge of Nalcor before the sanction date. You would agree with me there?

MR. SHAFFER: Absolutely. It was part of the Decision Gate 3 documents that we looked at.

MR. BUDDEN: What planning or cost-assessment use was made of that knowledge that we were in a P1 situation?

MR. SHAFFER: I'm not sure.

MR. BUDDEN: Okay.

You're not sure of the answer; you cannot recall it or that was never pursued?

MR. SHAFFER: Would you mind repeating the question, please?

MR. BUDDEN: Okay.

What planning or cost-assessment use was made of this knowledge that Nalcor was in a P1 situation before sanction?

MR. SHAFFER: I can't recall.

MR. BUDDEN: Okay.

And if they had integrated the P1 knowledge within their cost assessment at the time the sanction decision was made, what would have been the consequences of that?

MR. SHAFFER: I'm not sure I understand the question.

MR. BUDDEN: Okay.

The P1, as we've established, was within the knowledge of Nalcor, but I would suggest to you it was not – it does not appear to have been engaged in the cost-assessment process that led to the sanction decision. Are you with me so far?

MR. SHAFFER: So far.

MR. BUDDEN: Okay. And I'm saying what would the difference have been if it had been so engaged in that process?

MR. SHAFFER: In dollars you mean?

MR. BUDDEN: That might be one way of answering. Perhaps you could answer that.

MR. SHAFFER: Well, I would assume, based on what I testified to before, that – you have schedule slippage, your costs are going to go up. So if you miss that July '17 date, and if you go out another 18 months, for example, your costs are gonna go up 18 months, your capital cost estimate would go up.

MR. BUDDEN: Okay. To a different topic, what is AFUDC?

MR. SHAFFER: I forgot specifically what's included in there but I know that interest – I thought interest during construction was one of the factors.

MR. BUDDEN: Okay. I'll give you the definition I have. It's – AFUDC is allowance for funds used during construction, which my definition also says is a generally accepted accounting principle whereby the cost of financing capital construction projects is added to the cost of the asset.

So you would agree that AFUDC is a generally accepted accounting principle.

MR. SHAFFER: I would have to look at the GAAP – the generally accepted accounting principle – can't pronounce it – the actual standard, but I'll take your word for it.

MR. BUDDEN: Okay.

Throughout your report you cite capital costs of the Muskrat Falls Project as specifically excluding financing costs, and perhaps we could look at page 4. It's right at the very beginning of your report, and if you'd read lines 21 to 23 for me.

MR. SHAFFER: Page 4 are we on?

MR. BUDDEN: Page 4, yes.

MR. SHAFFER: Okay, and what lines?

MR. BUDDEN: Twenty-one. Read the first three lines ending with costs.

MR. SHAFFER: "At the time the Project was sanctioned in 2012, the capital cost estimate amounted to approximately $6.2 billion (excluding financing costs) with first power from Muskrat Falls scheduled for 2017. To date, excluding financing costs, the capital cost estimate has been revised and is currently in excess of $10.1 billion…"

Should I stop?

MR. BUDDEN: Yes, please.

MR. SHAFFER: Okay.

MR. BUDDEN: Why did you so exclude financing costs?

MR. SHAFFER: 'Cause we're comparing apples to apples.

MR. BUDDEN: Okay. So, does that mean you can't – it is possible, I presume, to calculate financing costs?

MR. SHAFFER: I don't know if I'm in a position to answer that question. I would have to see all the data and – it'd be something Nalcor could absolutely do –

MR. BUDDEN: Okay.

MR. SHAFFER: – which they – which I assume they did. But in terms of – when you compare 6.2 to 10.1, we're comparing apples to apples because that's the actual capital cost to build the project.

MR. BUDDEN: Okay.

MR. SHAFFER: It had – it – both the 6.2 and 10.1 excludes financing costs.

MR. BUDDEN: Okay, well clearly there would have been financing costs.

MR. SHAFFER: Oh sure there are.

MR. BUDDEN: These are real costs, they're not imaginary. They're actual real costs in financing a project of this sort.

MR. SHAFFER: Absolutely.

MR. BUDDEN: Okay. And it was –do I take it was not part of your understanding of your mandate or your terms of engagement to so calculate those costs.

MR. SHAFFER: For this part – well, no we're not calculating the costs, but for this report, we're taking it up to sanctioning at this point.

MR. BUDDEN: Okay.

MR. SHAFFER: As far as interest during construction, if we do address it, that would be addressed in the next report.

MR. BUDDEN: Okay so that's a question I should save perhaps for the next stage. Okay.

THE COMMISSIONER: This a good spot, Mr. – before you move on to something else?

MR. BUDDEN: Yeah I don't have a lot more, but perhaps we could break. Because I do have to look up one of those sources. So perhaps we can come back in the morning.

THE COMMISSIONER: Okay.

MR. BUDDEN: Thank you.

THE COMMISSIONER: So we'll adjourn then 'til tomorrow morning at 9:30, and both witnesses to return at that time.

CLERK: All rise.

This Commission of Inquiry is concluded for the day.