



COMMISSION OF INQUIRY RESPECTING THE MUSKRAT FALLS PROJECT

Transcript | Phase 1

Volume 35

Commissioner: Honourable Justice Richard LeBlanc

Thursday

8 November 2018

CLERK (Mulrooney): All rise

This Commission of Inquiry is now open.

The Honourable Justice Richard LeBlanc
presiding as Commissioner.

Please be seated.

THE COMMISSIONER: All right, good morning.

MS. O'BRIEN: Good morning, Commissioner.

THE COMMISSIONER: Sir, you remain under oath at this time and we'll continue on.

MS. O'BRIEN: Thank you.

Before we begin, I'd like to enter – ask to enter two new exhibits: P-01050 and P-01051. I actually referred to the P-01051 in evidence yesterday. I had not realized that we did not yet have an order admitting it.

THE COMMISSIONER: All right, those two documents will be entered as numbered.

MS. O'BRIEN: Thank you.

All right, can we please bring up P-00862? It's tab 8 of the book before you, Mr. Kean, and this is going to be your timeline. And it's page 8 – page 19, I'd like to go to.

And, in particular, it's the note that you have here on December 15. Can you please read – December 15, 2011, on the estimate, could you please read that out?

MR. KEAN: Yes.

“**SLI Phase 2 Deliverable due** and submitted which included Cost Estimate for the components SLI falling within the EPCM Services Agreement (i.e. Component (C1), Component 3 (C3) and Component 4 (C4)). This estimate as produced by SLI was considered poor quality as it did not follow the requirements specified in the EPCM Services Agreement as it relates to the approach to develop the estimate. Upon receipt of this deliverable the SLI estimating resources were reorganized under

Nalcor's direction in order to ensure the cost estimate deliverable was delivered on schedule.”

MS. O'BRIEN: Okay, thank you.

So you wrote that, did you?

MR. KEAN: Yeah. Yes.

MS. O'BRIEN: Okay, I'm going to ask you some questions as to why you believed it was – the estimate was of poor quality and did not meet the services. I am – or the agreed upon services. And it may assist you – I know you've provided us with some documents that may assist you in your answer to this.

I'll bring up the first one: P-00856. It's – the two documents, Mr. Kean, are at tab 47 and 48 of your book. The first one here is at P-00856, it's at tab 47, so that's there on the screen before you. And feel free to refer to this.

And could you give the Commissioner an explanation, please, as to why you believed what SNC-Lavalin delivered on December 15 was of poor quality?

MR. KEAN: Yes. I guess, fundamentally, the observation goes back to earlier that year when – following the kick-off meeting, which occurred with SNC-Lavalin on the 30th and 31st of March 2011, wherein the cost estimate requirements were reviewed. It was expected that an estimate development plan would be produced by the project controls manager defining how the estimate and all elements of the estimate would come together.

And that would be things like how we deal with price. For instance, if we're receiving price quotations from multiple vendors, would we be selecting the lowest, would we be averaging multiple, would we be averaging the lowest two, those things; how we would code the estimate in context of not only the construction or commitment packages but also the physical components of the job. So the plan was to articulate that, ensure that the requirements were defined and it was in someone's responsibility to ensure that was done.

We struggled to get that plan and, as a result, the estimate submitted on the 15th of December was

absent some critical details in that regard; so, for instance, non-alignment with the commitment package work-breakdown structure, some inconsistencies regarding the price basis amongst the various C1, C3, and C4 components and non-consistent use of things like labour rates.

So while there was no one particular item that was deemed to be a showstopper, there was deemed to be a lot of smaller issues that, once brought together, were starting to cast doubt on the overall product. The estimate review process that was planned, it lasted longer than intended. That process kicked off after the 15th of December wherein we worked through a lot of those challenges to ensure alignment.

And things such as constructability review for the project had not been finalized to factor in to the overall estimate, and that needed to be completed. Some of that wasn't the direct responsibility of the estimators, but it was information they needed to ensure that the estimate met the quality expectations for a Class 3 estimate.

MS. O'BRIEN: What is a constructability review?

MR. KEAN: A constructability review is a process whereby you go through the work itself to be built, the physical activities. You look at your schedule; you look at unique interfaces and constraints. You look at, I guess, the design elements of that work itself to ensure that everything is articulated and looks to be practical from a construction perspective.

In short, it's ensuring that the engineering product considers requirements to construct the job. It's not just to engineer a design; you have to actually engineer a design that's constructible. So that was in the process of being finalized and it wasn't finalized until in Q1 of 2012.

So to produce a good, quality estimate, we said you needed to have that – it may have not changed the fundamental numbers, but it gives a level of certainty that is required to achieve a Class 3 estimate accuracy.

MS. O'BRIEN: And did you communicate to SNC-Lavalin Inc. that you were not pleased with the deliverable – the December 15 deliverable?

MR. KEAN: There was a lot of – there were a number of deliverables due on the 15th of December. And communication did occur on a lot of those deliverables, including the estimate. This email that's showed here – this exhibit, I apologize –

MS. O'BRIEN: Yeah.

MR. KEAN: – does lay out some of those concerns, the immediate identification. So as you can – it was received on the 15th of December. We were – you know, we had to do a quick review, start to close down for Christmas and this is the first – this is the 4th of January when people are starting to get back in.

After this email, we had a number of working sessions from which I developed a list of top deficiency – or top priority areas underneath each of the four elements of the estimate that we used, be it definition and performance factors that go into the estimate.

MS. O'BRIEN: And –

MR. KEAN: And that was issued on the 31st of January.

MS. O'BRIEN: So is that – well, I'm going to ask Madam Clerk to bring up P-00857 in tab 48 of your book.

This is a document entitled: DG3 Estimate – Major Deficiencies List (as of 31-Jan-2012). Is that the document you're referring to?

MR. KEAN: Yes, it is.

MS. O'BRIEN: Okay.

And just – this is a little more fulsome than what we saw in that email. Just briefly, can you tell us what this was intended to capture?

MR. KEAN: Sure.

I draw your attention to the five boxes above which, basically, are – to the four grey shaded boxes – are the principal four inputs to develop a

base cost estimate. They are: definition factors or the scope of what you're to build, be it the quantities, the physical attributes; second being the construction methodology and timeline, how long it's – such as, how long it may take, the sequencing of work, consideration of time for overhead, site overheads and so on; price factors might be things such as the unit prices that might be featured into the design, the labour rates, the equipment rates; and performance factors gets into productivity and time constraints.

And underneath these four areas, I basically listed down below, some of the major gaps that we identified, that we needed to have clarity on in order to ensure we were able to present an estimate that met these Class 3 accuracy requirements.

MS. O'BRIEN: Okay.

MR. KEAN: And this is just a summary of those things and were some of the items that featured into the overall punch list of things that need to be resolved with the estimate over the – during the review and validation period.

MS. O'BRIEN: Okay.

And did you provide this list to SNC-Lavalin? And, if so, to whom would you have provided it?

MR. KEAN: Well, my principal interface would have been Mahmoud Berjaoui, the project controls manager for it.

MS. O'BRIEN: Okay.

And so did you provide him with this document?

MR. KEAN: Yes, that was provided in a meeting.

MS. O'BRIEN: Okay.

MR. KEAN: That occurred, I think, on the 31st.

MS. O'BRIEN: Of January?

MR. KEAN: Yes.

MS. O'BRIEN: Okay.

So what was the response from SNC-Lavalin and then what – how did you proceed from there?

And I will let you know that we've already had some testimony from Paul Lemay about, you know, at this time in January after Christmas, there was a – in 2012 there was a physical movement of the SNC estimating team to what he referred to as a bullpen area, and then there was some group work going on. So the Commissioner has heard that piece already.

MR. KEAN: Yes.

So the – I think there was a reasonable acknowledgement that there was some opportunity to close these gaps. These were not necessarily all deficiencies that – from an estimator perspective; these were things that the estimators were relying upon in order to complete a good quality estimate in some regards that needed to be pulled together.

So Mahmoud agreed with the aspect of let's bring the team together, let's focus on this review and validation period, let's sure – let's work together to make sure we can get this estimate over the line and ensure the quality of product. So I believe it was in early February we did pull the group together as one. You know, Nalcor insisted upon it – I will admit that – to ensure we had the team working as one. And they worked together as one.

I had over – ultimate oversight of that estimate development. And that occurred through the next, probably, six months. And I think the team probably stayed together after that as they focused on other things.

MS. O'BRIEN: Okay.

And when did you consider that you had the base estimate in a suitable form?

MR. KEAN: Towards the – late May we thought we had it in good shape from an overall cost perspective. There was some further documentation work to be done afterwards, such as preparing your estimate summary reports, preparing some of your metric summaries, as well as finalizing the documentation of the basis of estimate.

MS. O'BRIEN: And I'm going to come back to the basis of estimate in just one moment. But, first, you – we – you've provided us with a couple of documents. Can I bring up P-00869? It's tab 49 of your book, Mr. Kean.

And so this is a spreadsheet; it's hard to read. Madam Clerk, could you make it just a little bigger, please? And – whoops, okay, there we go.

So if I look up here, this is the first one and there's two spreadsheets that you provided. This one, it's – they're both general control sheets here. This one says: Post December 15, 2011 Adjustments and then there's a number of items listed. It's a 7-page long document, but I'm just gonna go down to the bottom here and the – it totals off with: "Sub-Total: BEFORE JK's CHANGES," and then there is a couple of negative numbers here, one in each column, both – or one is \$120,000 or so and the other is \$115,000. Can –

MR. KEAN: Million.

MS. O'BRIEN: Oh, million, sorry. Well, that's a big difference.

Can you please explain to the Commissioner what this is showing?

MR. KEAN: Sure.

At the end of – following the 15th of December submission and the review and validation period, the estimating team put together what – this sheet here, which is basically a log recording all changes that would be made to the estimate. So for the estimate with – for the SNC portion of the estimate, you might say.

MS. O'BRIEN: Okay.

MR. KEAN: So the – so that – which comprises about 70 per cent. So all changes that came out of workshop actions and so on, that resulted in a physical numerical change to the estimate, so a quantitative change where it could be give or take, was logged in these control sheets. And I believe that was maintained by Mr. Tremblay and a co-op student.

MS. O'BRIEN: And the overall result of these changes was a reduction in the...?

MR. KEAN: It was.

MS. O'BRIEN: Okay and what was the total reduction in the estimate from what SNC-Lavalin had provided you?

MR. KEAN: I don't recall.

MS. O'BRIEN: You can – this –

MR. KEAN: Oh, this – it would've been here, but there were further changes after that.

MS. O'BRIEN: Is that in the next spreadsheet we're gonna go to?

MR. KEAN: I think there's a page after here also, but there is a next spreadsheet, yes.

MS. O'BRIEN: Oh, sorry, there's another page. Here you go.

MR. KEAN: Yeah.

MS. O'BRIEN: Sorry, I meant to bring it to the bottom of the document. I apologize.

So can you tell us what the total change was, then, at this time?

MR. KEAN: Can you just scroll up so I can see the titles on the columns?

MS. O'BRIEN: There you go.

MR. KEAN: So the amount of change in the actual HCSS with our estimating software is a negative \$253 million.

MS. O'BRIEN: So that was a reduction from what SNC had provided?

MR. KEAN: Yes.

MS. O'BRIEN: Okay.

And here where it says "JK's CHANGES," is that you, Jason Kean?

MR. KEAN: Yes, it is.

MS. O'BRIEN: Okay.

MR. KEAN: For example, one of the big reductions would've been the EPCM services, which is captured in the – outside of the 70 per cent of estimate that Nalcor – that SNC was preparing. Nalcor was preparing the estimate for EPCM services, so we couldn't have it in two locations.

MS. O'BRIEN: Okay and we had seen some documents from SNC already – Mr. Lemay – where it would be amounts that they had in there for EPCM services were identified. So that those amounts are included in this \$253 million is what you're saying?

MR. KEAN: That's correct.

MS. O'BRIEN: Okay.

And can we bring up the next document, then, please, P-00870. And it's similar, but we can – Madam Clerk, could you just please enlarge that? And it is tab 51. Sorry, it should be tab 50 – tab 50.

And it's very similar, but here, just up here we see: Post May 17, 2012 (Phase 2) Adjustments. So this is a shorter document, Mr. Kean, but obviously similar. And it comes down here and it seems to be that there's some further adjustments.

Can you explain, please, what's going on here?

MR. KEAN: I – this would've been a continuation of the further review and validation that resulted in a number of gives and takes. As to why there's two sheets, as I recall, I think at the 17th of May, just before that, the estimate had to be given to the team doing the escalation modelling. So we did a logical cut-off of – at that point in time, gave all the output to the team doing the escalation cost allowance estimate, because that had to be all cash-flowed over time, and then we tracked changes from that so we could get a true up at the end.

MS. O'BRIEN: Okay, so does this document here show further adjustments to it?

MR. KEAN: Yes, it does.

MS. O'BRIEN: Okay.

MR. KEAN: It shows a negative \$6.6 million.

MS. O'BRIEN: So a further reduction of \$6 million.

MR. KEAN: That's correct.

MS. O'BRIEN: Okay.

And now you say SNC prepared only 70 per cent of the base estimate. I understand they didn't do the estimate for the SOBI. Is that right?

MR. KEAN: SNC were not involved in preparing the estimate for the SOBI, the owner's management team, the – you know, the detailed EPCM services cost estimate, some of the, you know, numbers associated with the environmental assessment, maybe commitments associated with the Impact and Benefits Agreements with the Innu Nation, for instance. And there was a long list. There's a segregation of responsibilities in the basis of estimate that describes that.

MS. O'BRIEN: Okay.

And so when you – it's those – when you remove those things, that's how you get to the 70 per cent.

MR. KEAN: That – yes, approximately, from a –

MS. O'BRIEN: Sure.

MR. KEAN: – value, I think.

MS. O'BRIEN: Well, let's look, then, at the basis of estimate. Now, we have – can we bring up P-00861, please? This one's at tab 7 of your book, Mr. Kean.

So this is just a draft document. We did – it's –

MR. KEAN: Yes, I'm sorry.

MS. O'BRIEN: It's a draft document. It's branded with the trademark of both SNC-Lavalin and Nalcor. It is not complete, but it does say: "DG3 Capital Cost Estimate BASIS

OF ESTIMATE.” It has not yet been signed off, but we recognize some of the names here. These are all SNC-Lavalin names that are on the first page here.

Are you familiar with this draft?

MR. KEAN: Yes, I am.

MS. O’BRIEN: Can you please explain to us what it is generally and why we only have it in a draft form?

MR. KEAN: Sure.

The – this is a working document that reflects – that was being prepared by Jean-Daniel Tremblay during the estimate itself. That was one of the reasons Jean-Daniel was mobilized. So it’s a reflection of, as the estimate is coming together, to try to document some of the assumptions for that portion of the estimate that SNC is preparing.

It went through several reviews and I helped with the restructuring. What we did because – the basis of estimate is one of the key project control documents that we use for managing change or measuring change against post-sanction. We wanted to ensure everything was integrated into one fashion and provided all that front-end context and clarity on the estimate review process and so on.

So what I asked – which we decided not to issue this document, expend any more effort on this, bring it into – take this and bring it all into the back portion of the overall estimate itself, basis of estimate document, which is divided into a number of parts: one part might be owner’s cost, another part might be SOBI.

MS. O’BRIEN: So I may be able to bring that up, I hope. Can we bring up P-00094, please? This is not in your book, Mr. Kean.

So here is – this is a Nalcor revision control document here that we can see called: “Decision Gate 3 Basis of Estimate.” It is – was first implemented for use December 3, 2012, and we see it was reissued. You’ve signed off on this, as has Mr. Harrington. Is this the document you’re referring to?

MR. KEAN: Yes, it is.

So the table of contents describes that breakdown of – Part A has a general focus that provides overall context for the entire estimate itself. Then at Part – it goes down through. That Part A gives clarity on all of the initial inputs, then at Part B gives the owner project management costs. Part C would give the, I think, EPCM services. Part D is specifically related to component one. So this is where the input from the SLI basis of estimate would form a large part of what’s in this Part D and Part E and Part F, I think.

And then E, so that’s component three. Part F is the SLI component four and then there’s a G and H, I think. G would have been the Strait of Belle Isle crossing and H would have been Island system upgrades and then there’s the various attachments.

So we just wanted to integrate it because what was very important is that these documents capture history and were – after DG3 were freezing history and we have to manage change, so the documents are issued to the team so they can measure and manage change off it. So you’ll see this document referenced heavily in our project management and change forms.

MS. O’BRIEN: And why was it reissued for use in May of 2013?

MR. KEAN: I don’t recall, to be honest.

MS. O’BRIEN: Now, some of the – one of the pieces of evidence that we heard from Mr. Lemay was that he came to the project after DG2 had been passed. We know, obviously, there was an estimate that ultimately came to \$5 billion at DG2. He says that when he was involved in doing the base estimate for DG3, he essentially – it’s not – he didn’t start with the DG2 estimate, he kind of went back to, you know, the design, first principles, that sort of thing and built it up from there, is how I understood his evidence at least. Who would have prepared the DG2 estimate?

MR. KEAN: Sure.

So the DG2 estimate was prepared by the Nalcor team, particularly leveraging consultants like

Paul. We had a gentleman by the name of Paul Hewitt who is a, I guess, a counterpart of Paul Lemay that would have been involved in a lot of hydro projects. And Paul was engaged with us maybe over two to three years on a part-time basis and worked with the team to prepare the Muskrat Falls estimate that's used in DG2. And that's documented in a DG2 basis of estimate report.

MS. O'BRIEN: Okay.

And we have seen and we'll probably see more of in the future, but there was a number of presentations done, slide decks and such, that really explained and – more detailed documentation that explained the changes in the estimate from DG2 to DG3 because, of course, the estimate grew between those two gates.

Mr. Lemay said he wasn't involved in doing any of that analysis. Do you know who was?

MR. KEAN: So that analysis would have been primarily done by the owner's engineering – or estimating lead, Mr. Mark Turpin. You know, with –

MS. O'BRIEN: Okay, he was your right hand you described yesterday.

MR. KEAN: Yes, yeah.

MS. O'BRIEN: The same (inaudible).

MR. KEAN: And in support with my project controls lead Dave Parady.

MS. O'BRIEN: Okay.

MR. KEAN: And, you know, the big thing – Mr. Lemay – one thing, I guess, that wasn't mentioned is that when – I interviewed Mr. Lemay and we – he's a great add to team, but in order to aid with the transition we did bring in Mr. Paul Hewitt to go through all the DG2 estimates to ensure Mr. Lemay was aware of what was in that DG2 estimate for Muskrat Falls.

And concurrently, throughout the development of the DG3 estimate, Mr. Paul Hewitt prepared a check estimate to check and compare. And I think Mr. Lemay mentioned Mr. John Mulcahy

who also prepared another check estimate for the Muskrat Falls generation facility.

MS. O'BRIEN: Okay so were – Mr. Hewitt and Mr. Mulcahy, were they – they were consultants to Nalcor?

MR. KEAN: Yes. Mr. Mulcahy was full time, pretty much in-house, and Mr. Hewitt was called upon as required.

MS. O'BRIEN: Okay.

And did they have their own consulting companies or were they associated with a larger entity?

MR. KEAN: They were both independent consultants.

MS. O'BRIEN: Did you have any involvement in the estimating for the capital costs for the Isolated Island?

MR. KEAN: No, I – no, no estimating for the DG3. Prior to DG2 I did provide a benchmarking study through Hatch on the costing for – unit costs for combined-cycle gas turbines. So I led a study with Hatch for that to provide that piece of data to Newfoundland and Labrador Hydro. And the reason for that was Hatch were on – we did that work under the Nalcor – or Lower Churchill Project contract at that point in time.

MS. O'BRIEN: Okay but that was for DG2, not DG3?

MR. KEAN: Yes.

MS. O'BRIEN: Okay.

And do you know who was doing the capital cost estimates for the Isolated Island for DG3?

MR. KEAN: My recollection was it was done by the Newfoundland and Labrador Hydro systems group with support from the Project Execution and Technical Services group.

MS. O'BRIEN: And who was that group? That last one?

MR. KEAN: So that would have been, I guess, Paul Humphries, Rob Henderson and – I guess from the Project Execution and Technical Services would have been Mr. John MacIsaac.

MS. O'BRIEN: Okay, all right.

And you did not work with them on any of those aspects?

MR. KEAN: No, I did not.

MS. O'BRIEN: And did anyone under you, like Mr. Turpin or Mr. Parry, people in your group, did they work with them?

MR. KEAN: I recall Mr. Goulding, Steve Goulding, was asked to provide some escalation modelling support in that exercise so they could sort of adopt a similar robust approach that we were utilizing in the project. But I wasn't close to that, it was just a resource that was – sort of provided part-time support.

MS. O'BRIEN: And that was for escalation?

MR. KEAN: As I recall, yes.

MS. O'BRIEN: Okay, all right.

I just want to ask you a few questions around the work effort that you put in with your years on the Lower Churchill Project. Can you please describe for the Commissioner while you were working on this project, what would – in terms of work hours and how much you were putting into it, what would your average week look like?

MR. KEAN: My average week would have reflected my passion and my interest, but I would normally arrive at 6:45, 6:30 and, you know, work throughout the day, leave at 6 or so in the evening. Probably have a little bit of time in the evening to follow up on some things an hour or so after that, and that would be five days a week.

And then, usually, Sunday was reserved for catch-up day, you might say, or crafting some of these documents and so on that might need to be written or some presentations put together. So maybe a half day on Sunday, two-thirds of a day, yeah, in that regard.

MS. O'BRIEN: And in terms of annual vacation, what types of vacations were you taking?

MR. KEAN: I always took my vacation. My wife certainly prompted me there and planned that so we did have vacation. And, thankfully, I think we had enough capacity in the team to be able to do that.

We were focused on bringing through two ICs you might say, but I always had, I would say, at least one two-week break and two other short breaks per year; when I say short, maybe one week. So in – you know, I would have had my – still my four weeks' vacation a year.

MS. O'BRIEN: Okay.

And when you – so you're describing very long days if you're saying you arrived at, you know, 6:30, quarter to seven, left at 6 or thereafter, plus did an extra hour or so at night. I mean that's coming in at over 12 hours a day, you know, five days a week. That's – and then, again, you're saying you worked on Sunday as well for a half to two-thirds of the day, so that is an intense effort.

You said what your day rate was. Were you paid overtime as well?

MR. KEAN: No, I was paid on a professional day rate. If I worked 15 hours, I was paid the same if I worked eight hours.

MS. O'BRIEN: Okay. And would you have been paid for your work on Sunday?

MR. KEAN: Yes, I would have been.

MS. O'BRIEN: Okay.

MR. KEAN: That's the principle with all managers.

MS. O'BRIEN: Okay.

And, I mean, it is a very heavy workload. Did you ever feel like you were reaching a point of burnout or near burnout, or was that a workload that you were able to manage?

MR. KEAN: No, I've got a pretty good work ethic. And I guess my personal life supported that, I guess; it's just my wife and I. She's a working professional, so I guess we didn't have other constraints and challenges that other people may have.

MS. O'BRIEN: Now just with respect to that, the evidence that you just gave a few minutes ago on your vacations, so you're saying now that you had a two-week and then two one-weeks, so you were getting four weeks a year. It's not quite consistent with what you told me in your interview.

I just wanted – I'm looking at page 23 of your interview. You said – I said: When you went away, when you got away, how long would you get away for, typically? And you said: I've had vacation for two weeks but it was typically a week.

MR. KEAN: Yeah. I guess it depends on each year. Sometimes we would – for instance, in 2014 I did take a two-week vacation; 15 days I went to Europe, as an example. And a lot of times 10 was the magic number. You know, you take a week and maybe the weekends. And Christmas was always a time that – one thing about projects, things typically shut down during Christmas. So everyone is away, so there's no emails coming in.

MS. O'BRIEN: Okay, thank you.

Now, we – I'm just going to address your leaving of the Lower Churchill Project briefly because we know you left. Now that – I understand that you gave one month's notice on January 4, 2017. Is that right?

MR. KEAN: Yes, it is.

MS. O'BRIEN: Okay, and then you gave your notice that you were terminating your position with the project?

MR. KEAN: Yes.

MS. O'BRIEN: Okay, so the Commissioner – and this is not a significant area of inquiry for us, but just for completion of your evidence, I just – you know, and I am recognizing here we're – at that point we're well into phase 2, but

could you give the Commissioner at least some detail on why you decided to leave the project?

MR. KEAN: Sure.

Those that know me know that I'm a very values-focused individual. I guess, I – throughout the year of 2017 I was assessing where things were, where I was myself. I tell people I made a values-based decision to move on.

The ideology in the organization was changing, particularly by those that were in leadership positions. I didn't see that I was aligning with some of that ideology. Some of the values that were being promoted weren't values that I subscribed to.

So I guess I made the decision that it wasn't a place that was right for me as an individual. If you can't – if you don't believe in the way things are being operated, you need to move on and that's what I did. It's for the best interests of the project and me as an individual.

MS. O'BRIEN: And did you – and in your interview you mentioned you felt there was a change in atmosphere. Can you just, again, briefly say what – I understand this is your perspective, but what was your perspective on the change in atmosphere?

MR. KEAN: Well, in – with the integration of SNC and some of the functionality work that we did, we put a lot of effort into making one team, a lot of emphasis on shared values, respect, open communication and team work and respect and dignity. And I saw those values not being upheld, to be quite frank, and, you know, I had decided that wasn't right.

So I was – in my role, I had been a big proponent of values, had sent a lot of emails, had pocket-sized value cards printed for everyone and stickers on people's logbooks. So, you know, you can't very well stand by and see that eroded. How can you look people in the face? So – and I decided to resign.

MS. O'BRIEN: Okay, thank you.

And I said at the beginning of your testimony that I would return to your most updated CV, so P-00884.

THE COMMISSIONER: Tab 2.

MS. O'BRIEN: Oh yes, thank you.

So here – so since you left – so in 2017 you left. And, here, I understand that you're now working as a consultant for Westney Consulting?

MR. KEAN: Presently I'm providing part-time support to Westney. After leaving Lower Churchill I reached out to a lot of firms. And through my own firm I provided some part-time consulting for support on a number of projects as a consultant would.

Towards the end of last year, I was engaged by Westney to provide a support to an LNG project based in Houston. And I continue to provide part-time support to that project, particularly in the areas of project governance and decision-making and insurance frameworks.

MS. O'BRIEN: Okay.

And here on your résumé it says – under the Westney Consulting Group work it says that your projects include this 20-billion international LNG project and a 10-billion North American power generation project. Is that the Muskrat Falls Project you're referring to there?

MR. KEAN: Yes. In the months of March of 2017 and through May of 2017, through a different arm of Westney – they have different divisions, you might say – I was requested to provide some support to complete the preparation of the 2017 QRA for Muskrat Falls generation. And I provided that support through Westney Consulting Canada which is a subdivision, I guess, of Westney Consulting Group.

That work ended and, really, I had no further work with Westney until that December of – last December, wherein I started to participate in this LNG project.

MS. O'BRIEN: Okay. Thank you.

All right, those are my questions for you, Mr. Kean. Thank you.

THE COMMISSIONER: All right, Province of Newfoundland and Labrador?

MR. RALPH: No questions, Commissioner.

THE COMMISSIONER: Concerned Citizens Coalition?

MR. BUDDEN: Good day, Mr. Kean. My name is Geoff Budden. I'm the lawyer for the Concerned Citizens Coalition, as you probably know.

And the coalition – as again you probably know if you've been following the Inquiry – is a group of individuals who, for many years, have been critics of the Muskrat Falls Project.

I don't have a whole lot for you but I do have some questions. The first one: In your evidence you spoke of the full-time risk manager who left the job in about 2010 and I believe you referred to that person in the interview as well. Who was that individual?

MR. KEAN: The role that it was – the gentleman's name was Steve Lethbridge. He – the title was strategic planning lead, which was – you know, his role was risk coordinator, risk manager and that. So – and then we were joined by a full-time risk manager underneath the SNC umbrella in 2011.

MR. BUDDEN: Okay.

Was that disruptive to the development of the estimates in any significant way?

MR. KEAN: No, it wasn't.

MR. BUDDEN: Okay.

With respect to yesterday, of course, you testified to the switch from a P75 to a P50, which, as I understand correctly, occurred in August of 2010. And you testified as well that you can't recall from whom you received the direction or instruction to make that change.

And I was sort of jotting this down so I may not have got it quite correctly, but I think if I

understood you correctly, you said that it wasn't within your authority to make the decision, someone with a higher authority than me would have given that instruction. Do you recall saying that?

MR. KEAN: Yes, I do.

MR. BUDDEN: Okay.

So looking at your earlier evidence, as I understand the project correctly, above you was Mr. Ron Power.

MR. KEAN: Yes.

MR. BUDDEN: Above him was Mr. Paul Harrington.

MR. KEAN: Yes.

MR. BUDDEN: Above him was Mr. Gilbert Bennett.

MR. KEAN: Yes.

MR. BUDDEN: And above him – and really at the apex of Nalcor – would have been Mr. Ed Martin.

MR. KEAN: Yes.

MR. BUDDEN: So if I follow from that, or correct me if I'm wrong, but it would have, I assume, had to have been one of those four individuals who gave you the instruction to make that quite significant change.

MR. KEAN: No, while they may have been the decision-maker from an instruction perspective, I suspect that it came through Nalcor Investment Evaluation, because that's where all the requests came from.

MR. BUDDEN: (Inaudible.)

MR. KEAN: And those individuals – Mr. Bennett, Mr. Harrington, Mr. Sturge – would have been – Investment Evaluation reported to Mr. Sturge, for instance. They would have been, you know, giving insight and direction to Investment Evaluation regarding various aspects of economic modelling, so ... But I do know that all of our normal direction regarding all the

cases and scenarios came from Nalcor Investment Evaluation.

MR. BUDDEN: Sure.

But it's much the same mechanism if I, you know, suggest to my office manager to pass a direction along to one of the associate lawyers at my firm, the direction is coming from me, it's just coming somewhat indirectly. I presume it would have been something like that?

MR. KEAN: It could be, but my knowledge of where that would have come from is not necessarily indicated by those provide – or I wouldn't have necessarily known where the – or the direction came from by those passing on the information, I guess, or request.

MR. BUDDEN: Yeah, that makes sense.

MR. KEAN: And, you know, that's generally how things work, I guess.

MR. BUDDEN: And, however, you're not suggesting that Mr. Power, say, would have been unaware of this change or Mr. Harrington or Mr. Bennett or Mr. Martin?

MR. KEAN: Mr. Power I doubt would have been aware of the change because he wasn't heavily involved in the day-to-day activity there. I can't speak for Mr. Harrington.

MR. BUDDEN: Okay.

Do you have any reason to doubt that Mr. Harrington would have been aware of the transition from a P75 to a P50?

MR. KEAN: No, I don't doubt that he was aware because I think, you know, generally he had a good awareness of the scenarios and cases that we were presenting –

MR. BUDDEN: Yes.

MR. KEAN: – at that point in time.

MR. BUDDEN: And this would have been a significant change, obviously. I mean a change with consequences of hundreds of millions of dollars for the sanction estimate.

MR. KEAN: It would have had – it would have changed the risk profile therein. But as I indicated yesterday, I – you know, in looking at, I think, Exhibit 00871 that Mr. Sturge referred to, there was some indication in the fall that they surmised they were working with a P75 and that was a switch from a P75 to a P50. So my question – it begs the question for me whether there was entire clarity on that issue.

MR. BUDDEN: Okay, so are you suggesting that – well, I think I’ve just asked you and you answered that you don’t doubt that Mr. Harrington was aware that a switch had taken place –

MR. KEAN: Mmm.

MR. BUDDEN: – from a P75 to a P50. You’re not doubting that he was aware of that change?

MR. KEAN: No, I’m not doubting that.

MR. BUDDEN: Okay. And you’re not doubting that he would have been unaware of the consequences for the estimate cost of such a change.

MR. KEAN: I don’t know if he would have, you know, known the entire scenario because I don’t know if we did give a scenario for Muskrat Falls with a P75 that one could then say – you know, have received earlier and say, well, as a result, this P50 is at this amount.

So all I know is that previously we had put together a lot of scenarios and they were at a P75. And I guess at the end of that year, as I recall, we’re moving to a Muskrat Falls-first option so ... and I – you know, I really can’t recall any further direction on that, you know.

MR. BUDDEN: Okay, well, I’ll just return to that point. I mean there’s no doubt, I would assume everybody at a certain level in the business would – at Nalcor would’ve known that if you’re working from a P75, your cost – your estimate cost is going to be higher than if you’re working from a P50. That’s not obscure. That would’ve been known, presumably, to the senior management team.

MR. KEAN: Yes.

MR. BUDDEN: Okay.

So it therefore follows that if this change took place, those above you – perhaps not Mr. Power, but those above him, this handful of individuals – would’ve been aware of the significance of the change.

MR. KEAN: But –

MS. HUTCHINGS: I’m objecting to that question –

MR. BUDDEN: You don’t think so?

MS. HUTCHINGS: – because I don’t think the witness is able to be able to say what was in the minds of the other people above him. He’s already given the evidence that everybody knew that it was being changed and – but I don’t think he can speak for what was in the minds of everybody else.

MR. BUDDEN: Yeah, I’ll move on. I think we’ll get to those people in due course, in any event.

Would not the ordinary business procedures of Nalcor required a management change or some similar written documentation of a change to a P75 to a P50.

MR. KEAN: Management change normally occurs when you freeze a baseline. When you’re in Gateway phase 3, which is the period of time between Decision Gate 3 – 2 and 3 – it’s really a scope development and tracking. So you’re looking at various scenarios for – upon which to make the best determination.

So until you actually freeze at Gateway – at Decision Gate 3 – you don’t really trigger that overall process. So from a perspective of providing those various scenarios, that’s part of the evaluation of which scenario would work best. That would have to be undertaken by those evaluating scenarios.

MR. BUDDEN: So are you suggesting – and correct me if I’m wrong – that it would be possible to have a change of this significance with no written direction or even notation the change was being made?

MR. KEAN: I didn't suggest that because –

MR. BUDDEN: Okay.

MR. KEAN: – generally, those changes would be governed by the change management processes for the economic model. You are changing parameters into the economic model. So I would look to those that would be governing that process to give clarity as to what requirements were needed to make those changes. So I really can't answer from that perspective.

MR. BUDDEN: Okay and that clarity, would you expect that to be written clarity? I mean there's nothing clearer than something being written down, you would agree with me there.

MR. KEAN: Yes.

MR. BUDDEN: Okay.

And can you recall any time where it was written down, this specific direction, to change from a P75 to a P50?

MR. KEAN: So I wasn't involved in the economic model or the governance of the economic model, so I can't really comment as to what change or written change mechanisms may or may not exist there.

MR. BUDDEN: Okay. So you're not aware of any?

MR. KEAN: No, I'm not.

MR. BUDDEN: Okay, sure, there'll be other witnesses.

Perhaps we could call up Exhibit P-00999, Madam Clerk? And if you could go to page 8 of that, I would appreciate it.

THE COMMISSIONER: That's tab 45.

MR. BUDDEN: Page 8, Mr. Kean – page 8.

MR. KEAN: See it there.

MR. BUDDEN: Okay.

The page 8 is the definitions page, I believe. That's what I'm interested in.

MR. KEAN: There's no definitions in this document.

MR. BUDDEN: Oh, is this – okay, I may have the wrong exhibit. Okay.

UNIDENTIFIED FEMALE SPEAKER:
(Inaudible.)

MR. BUDDEN: Yeah, it's the one with – contains the – it's the risk – Project Risk Management Plan. Do you happen to know what that is off the top of your head?

UNIDENTIFIED MALE SPEAKER: 00956.

MR. BUDDEN: 00956. I'm sorry.

00956, please, Madam Clerk.

THE COMMISSIONER: Tab 20.

MR. BUDDEN: Yeah, that's it. We can scroll down to where it defines the risk register. Could you perhaps just briefly read that to us, please, Mr. Kean?

MR. KEAN: Risk Register: "A database or register of the identified project risks."

MR. BUDDEN: Okay.

And perhaps you could scroll back two pages to page 6. There's a graphic there. And the notation is there as well, I see: Risk Register: An "Overall listing of project risks including ranking, mitigation strategy and responsible party." Who would have been responsible, to your knowledge, for maintaining this risk register, the one that's referred to here?

MR. KEAN: Well, we had several risk registers that encompass very similar formats. But – and the management of that would have been driven into the responsibility of individuals in the various teams. So when – in the case of the register for the scope within the EPCM services agreement, we had a full-time risk manager there, Yuri Raydugin. For those with –

MR. BUDDEN: Oh, I'm sorry, that person – yeah, that was referred to in your interview, but perhaps you could, as you did there –

MR. KEAN: Sure.

MR. BUDDEN: – spell it for us again.

MR. KEAN: Yuri, Y-U-R-I, Raydugin, R-A-Y-D-U-G-I-N.

For those registers within the – outside of the EPCM services, there were various people that were responsible. So in the Strait of Belle Isle team there was a project engineer that was responsible for maintaining that register. Within the environmental assessment, there was a coordinator that was responsible for maintaining that register.

MR. BUDDEN: Okay.

Where would the Westney report, the one that referenced the strategic risk of 497 million, within which registry would that have been noted?

MR. KEAN: Those risk that you're referring to, that note, the 497 million, were basically noted in several registers, but it filtered up to the overall key project risk status report that's appended in the DG3 QRA document.

MR. BUDDEN: Okay. And who would have been responsible for – within which registry would that have been maintained and who would have been responsible for maintaining it?

MR. KEAN: That would have been maintained by our overall risk coordinator within the Nalcor group as well as supplemented by a senior engineering student.

MR. BUDDEN: The overall risk coordinator being Mr. Meaney?

MR. KEAN: No, no, no, that would have been Mr. Steve Lethbridge.

MR. BUDDEN: Mr. Steve Lethbridge. Okay that's a gentleman –

MR. KEAN: Yes.

MR. BUDDEN: – who left in 2010?

MR. KEAN: Yes, thereabouts. I can't recall exactly.

MR. BUDDEN: Okay.

And after he left who would have been responsible?

MR. KEAN: Now who would have – that register would have been updated on, I think, a quarterly basis and would be done by one of my project engineers under my direction following a risk resolution meeting that we would have had.

MR. BUDDEN: Sure.

Where I'm going with this, as you may be aware if you've been following the Inquiry, you may recall there's – I had some questions for Mr. Sturge about his awareness, or lack of awareness, and his maintenance, or lack of maintenance, of a registry that would encompass things such as the Westney report.

MR. KEAN: Yeah.

MR. BUDDEN: So you are aware of that evidence.

MR. KEAN: And there is a – I failed to mention one very important register, Nalcor's enterprise risk management system, which came on board actually a little bit after our project system, that encompassed a register for each business unit.

And so on those individual registers – and the one for Lower Churchill is appended to the DG3 risk management plan, it was an online portal-type system. So that would be reflective largely of the key risks that we saw for the project to – and they would be assigned to the various senior managers within the Lower Churchill.

And my understanding was at a corporate level that was aggregated to look at the overall risk perspective. But each business unit is responsible for the management of their individual risk –

MR. BUDDEN: Yes.

MR. KEAN: – but there are some risks that transcend like financial risk. It might be a currency-related risk or just a credit-rating risk that maybe go to Mr. Sturge's area as CFO, as an example.

MR. BUDDEN: Okay.

So when you speak of this aggregated risk, I presume that is corporation wide. That's what you're thinking there, what you're referencing.

MR. KEAN: An aggregate but there might be 50 Lower Churchill risk on that register, there might be 40 or 50 CF(L)Co, might be so many Newfoundland and Labrador Hydro, Bull Arm corporation and so on, on that overall register.

MR. BUDDEN: Okay.

MR. KEAN: Almost like tabs in an Excel workbook.

MR. BUDDEN: So I guess I'm asking you – and if you don't think the question is fair then tell me, I'm not trying to put words in your mouth. But is it possible for – under the scheme of risk acknowledgment and management as existed in Nalcor at the time, for a risk such as the Westney \$497 million notation of strategic risk to be maintained solely within the project team and not make it to the overall risk management registry maintained by Nalcor at a corporate level.

MR. KEAN: I'd like to correct something there because the 497 million is an aggregate exposure of a number of these risks.

MR. BUDDEN: Yeah. We saw that, yes.

MR. KEAN: The individual risk elements itself would be captured on our project risk register, and I would expect would have made it to the – our input to the enterprise risk management register that was ...

And, you know, the enterprise risk management program is facilitated or stewarded by the financing group of Nalcor, the CFO group, and, you know, there are various focal points that provide that liaison with the operational group such as the team. So it might be the general

manager of finance, for instance, for Lower Churchill that is that focal point.

MR. BUDDEN: Okay.

So you would expect – and, again, there's no magic to the 497 perhaps, but even the component numbers are large numbers.

MR. KEAN: The number – the register itself would not have quantitative numbers; these registers are qualitative in nature whereby there is a qualitative scoring of exposure or impact, and the probability or likelihood of occurrence to give a cumulative or total ranking. Only through a quantitative modelling process that we do for key decision points are – is cost and time put to them whereby a P50 of 497 in that case was identified. So, on those registers you would not see a number 497.

MR. BUDDEN: Okay. Would you see any numbers at all?

MR. KEAN: In the risk descriptions there may be some descriptors or commentaries that would try to explain or quantify the risk but, again, I think in most business units, risk would not be quantified from a cost and schedule. Only – you know, if you go back to Newfoundland and Labrador Hydro, you wouldn't be undertaking quantitative risk assessments for normal operations (inaudible).

MR. BUDDEN: Yeah.

So I guess what I'm thinking, we have engineers talking to accountants, when – and I'm a lawyer, I'm neither. But when I conceptualize a risk registry, it would suggest I would think, that that registry would, for instance, make note of the fact that there is a potential risk exposure of almost half a billion dollars in terms that obvious. Is that not your understanding?

MR. KEAN: No, I don't think it would, in my experience. It would try to characterize an individual risk, but only through a pure modelling exercise would you actually get a view on what, excuse me, that number would be. And that normally is not fed back to a register, it's used in various information briefs and so on that may be prepared. And each business unit may be conducting their business a little bit

separately. So I don't think it would – you would ever see that number 497 on that register.

MR. BUDDEN: Okay.

So it may be possible for – I mean unless you're fairly deep into the engineering, you might see a notation and not have any sense of all of the scale of the number that that risk represents, is what you're saying?

MR. KEAN: Well, no, the risk itself would have a criticality measurement; it might be very high exposure and very low, it could be high. And that – from that, I guess, that would attract more attention from an enterprise risk management committee to say what's being done in this area?

MR. BUDDEN: It's not explicit but it would be implicit by the criticality measure.

MR. KEAN: Yes, and perhaps it might be best to – you know, those who are a bit more closer to that group to provide a bit more clarity.

MR. BUDDEN: Okay. All right, that's – that was helpful.

The – I'm going to ask you some questions, I guess, so that helps me understand about the – I guess, some of the nuts and bolts of estimating. I won't get too nuts and bolts because I won't understand it anyway, but ...

For instance, am I correct in assuming that basis of estimate documents noting, say, location specific, rates of escalation and other relevant information, tracking the development of specific estimates, would've been maintained.

MR. KEAN: Yes.

MR. BUDDEN: Okay, so if you're looking, say, the placement of concrete in the powerhouse, something – you know, pardon the pun, something fairly concrete like that, you'd have – could you walk us through a little bit about how that estimate would be developed?

MR. KEAN: So on every estimate, as we referred to a figure there with a number of inputs of the estimate, every estimate, because of the unique characteristics of the project, there are

certain inputs to that estimate more important than others.

MR. BUDDEN: Mm-hmm.

MR. KEAN: As you can appreciate.

MR. BUDDEN: Sure, yeah.

MR. KEAN: The Lower Churchill Project or Muskrat Falls Project, it's a very labour-intensive project, so labour rates – hourly labour rates are very important.

MR. BUDDEN: That's about half the total cost, isn't it? Something like that.

MR. KEAN: It's in that magnitude, yes.

MR. BUDDEN: Sure. Okay.

MR. KEAN: And in this case, the project occurs within the boundaries of Newfoundland and Labrador, so it's – from a labour-rate perspective, it's – you put a lot of emphasis on understanding what your labour rates may be.

MR. BUDDEN: Okay.

MR. KEAN: And that's common across – whether it's transmission line, switchyards, powerhouse or reservoir clearing. Or as other key parameters that might be of relevance would be production rates, so it may be concrete placement rates –

MR. BUDDEN: Mm-hmm.

MR. KEAN: – or rock excavation rates or tower assembly rates. So those are principal – very important parameters. So the – in the case of labour you spend a lot of time with your labour team developing and benchmarking labour rates across Canada from all of the existing collective agreements.

MR. BUDDEN: So your hourly rates, productivity standards and so on.

MR. KEAN: Not so much productivity, it would focus on the – what is it – an analogous labour structure, you know, from a work teams concept, building trades unions, you know, and so on; unionized workforce rates, let's say. And

that will be pulled together and well documented, benchmarked and look at the comparable situation locally with agreements that may be done.

In the case of things like, let's say, tower assembly and transmission tower assembly, you would look at the unique considerations for the tower and bring together a group of people with varied experiences that say, well, let's look at the tower. What's our experience with how many person-hours and crew size would take to assemble a transmission tower?

MR. BUDDEN: Yeah.

MR. KEAN: What type equipment, and that might depend on the tower geometry. That would be based upon the expertise of various people that would come together as we would try to frame and understand that and land upon a productivity or a person-hours to assemble a – or complete a unit of work.

MR. BUDDEN: Sure.

MR. KEAN: In the case of concrete placement, a very similar approach. I know that's the one that gets a lot of attention, so where we would have focused there is that you would have had Mr. Lemay and his experience – and he had some other estimators that he drew upon – that brings a lot of Quebec and Washington State experiences.

We would have had Mr. Paul Hewitt who brought the Manitoba and British Columbia experience and Ontario. And then Mr. Mulcahy who brought a lot of the Atlantic Canadian and Ontario experiences. Combine that with some Icelandic knowledge from Landsvirkjun that we had because we had a secondee in-house from them.

We would bring that together and talk about, you know, what are the – what are the placement rates foreseen across these projects? Were these projects done with a similar labour strategy, union, demarcation – labour demarcations –

MR. BUDDEN: Yeah.

MR. KEAN: – and so on to land upon an agreeable and reasonable input to your estimate?

MR. BUDDEN: And there'd be back and forth, I presume. I mean, everybody has knowledge, everybody has opinions. Not everybody is going to start off from exactly the same place.

MR. KEAN: Of course. It's like purchasing a car. If you drive up Kenmount Road, there's all different types of cars, they have different prices and it depends on the attributes of that car or concrete.

MR. BUDDEN: Yes. Though, of course, in this case it's a bunch of individuals who all have the same goal, determining the appropriate estimate but coming from their own unique perspectives.

MR. KEAN: Yes.

MR. BUDDEN: Yours, being one of those perspectives.

MR. KEAN: I wouldn't have been involved in the – in that discussions. That would've been my lead estimator.

MR. BUDDEN: Sure, yeah. Not you, necessarily, on a personal level –

MR. KEAN: Yeah.

MR. BUDDEN: – but you, your team.

MR. KEAN: Yes.

MR. BUDDEN: Okay.

MR. KEAN: We would employ the experts where required in that area to bring together that knowledge. Because with unique – all the diverse attributes of the project, there's no one person that has all the knowledge. You have to bring and leverage specialists in different areas.

MR. BUDDEN: Okay.

Though, ultimately, somebody has to make a decision. If the parties – if Nalcor, or rather, if SNC-Lavalin are saying this is the dollar figure and your Icelandic secondee is suggesting another figure, ultimately somebody has to make a decision.

MR. KEAN: And the estimators would have to rationalize that out with the lead estimator and

so on. And sometimes it might be something such as one estimator – I mentioned doing check estimates. One estimator may wish – view that we’re going to build the plant using tower cranes; another would say I want to build it using track cranes. Well, the main estimate may use tower cranes, but the check estimate may use crawler cranes.

MR. BUDDEN: Yeah.

MR. KEAN: But at the end of the day, it should still work out in general terms with a number that would look like that. So in terms of setting those initial productivities, we would – the estimating teams would work together to – with the various advisors to rationalize their way through that, what do we think is reasonable.

And they would pull in engineering and talk about, you know, unique elements and attributes of the plant. And another key input in this is the planners that actually take all the engineering abstracts and try to develop it into a construction schedule.

MR. BUDDEN: The – I’ll return to that, but just to digress slightly, near the end of your evidence here today you were asked about SNC-Lavalin and some of the challenges in that working relationship. And you went into that in a fair bit of greater detail in your interview.

I mean you talked about: I couldn’t get SNC to put together two words that made sense. That’s one quote that sort of stood out for me. Were you aware that things (inaudible) in SNC, that those we were working with had no clue about them? You referred to a debacle on another occasion. Do you recall this –

MR. KEAN: Mm-hmm.

MR. BUDDEN: – using these words?

MR. KEAN: Yes, I do.

MR. BUDDEN: And so, I take it from that that it wasn’t always smooth, it wasn’t always knowledgeable people getting together and sort of, very quickly arriving at a number.

MR. KEAN: Well, I didn’t necessarily refer to that in the context of those numbers. We had

very competent estimators. Mr. Lemay and the team that he assembled were top-notch and his experience speak for that. It was more – there were some other broader challenges with SNC-Lavalin. And it’s different to put together an estimating plan than to actually prepare an estimate. They’re two different things.

MR. BUDDEN: Well, they’re surely not two different things.

MR. KEAN: Yes.

MR. BUDDEN: I mean the estimate flows out of the plan.

MR. KEAN: Yes, but to acknowledge how to prepare holistically a plan is different than one would have, for instance, to have detailed knowledge on lift heights and concrete production rates, the time to set up and disassemble scaffolding and so on. They’re just – it’s a little bit different knowledge.

MR. BUDDEN: But the impression I took away from your interview in particular was this was a fairly chaotic situation at times.

MR. KEAN: Yes.

MR. BUDDEN: And I guess I’m suggesting to you, how could not such chaos have impacted the estimation process, the reliability of the estimates that were ultimately generated?

MR. KEAN: It did impact, but that’s part of the reason we had an extended estimate review process that took – you know, I think the initial plan was we would have an estimate locked down in – by the end of February. But it took us towards the first part of June before we achieved that because there were a lot of items coming out of the estimate review or deliverables that the estimators really could use to ensure they had the best information to produce that Class 3 estimate. And it could’ve been a final material takeoff or a final piece of – final inputs from procurement on pricing.

So it’s – you know, that’s really what some of the early lack of planning to recognize all the inputs that were required to pull together to get that final submission on the 15th of December didn’t transpire. And as a result, things were late

coming and we ended up taking longer to go through some of those things. Such as – an example: we had expected the major constructability review to be done prior to the 15th of December. It was not done 'til March.

MR. BUDDEN: And, presumably, you were under pressure from your superiors to move this process along.

MR. KEAN: I wouldn't give them a number until it was good, so...

MR. BUDDEN: Okay.

Parking that just for one second, you were – you acknowledge you were under pressure to produce a number; you were working within this chaotic atmosphere. I'm not suggesting that at the time you knowingly went forward with numbers that were flawed. Looking back on it with a bit of perspective of time, do you not acknowledge that surely this must have had some impact on the reliability of the robustness of the estimates that were being generated?

MR. KEAN: I believe it impacted the 15th of December submission, but not the final submission –

MR. BUDDEN: Okay.

MR. KEAN: – the final estimate. And the reason for that, there was a lot of effort put in, in 2012, to build a stronger team. To – you know, we went through some challenges organizationally, but – and, you know, we tried to break down boundaries and ensure that we're all working together as one team. And irrespective if you wore a Nalcor hat or an SNC hat, you know, you respect we're working to achieve this together.

And I believe we – that philosophy helped enable us to remove some of those challenges that we saw impeding the 15th of December submission, and really work through the issues throughout that winter period, through spring, to get a good quality estimate that was consistent.

And, you know – and we, you know, from the work we had done we felt we had the requirements to meet a Class 3 estimate.

MR. BUDDEN: Okay.

So I guess I'll tie it all together in one fairly simple question. You were, at this stage of your career, relatively junior; I mean, you're much more senior now. You were out at this point, practising engineer, not a lot more than 10 years. You were working in this chaotic environment, under pressure to produce a number.

Are you nevertheless saying that you were able to produce a number that you will stand behind with no qualification that any issues with that number are not because of the circumstance you were in?

MR. KEAN: I had – my entire career before that had been spent on megaprojects and a lot of work on estimating. I worked with a lot of senior managers who are actually well-published in this area. And –

MR. BUDDEN: Leaving that inexperience –

MR. KEAN: Yes.

MR. BUDDEN: – aside, just answer.

MR. KEAN: I stand by the base estimate.

MR. BUDDEN: Okay.

MR. KEAN: I felt 100 per cent confident in that number, based upon the conditions and constraints that have – were defined in the basis of estimate.

MR. BUDDEN: So any ultimate failures of that number to accurately estimate what has unfolded since then wasn't because the process – the process itself did not cause an issue with that number.

MR. KEAN: No, nor the lack of information going into that estimate.

MR. BUDDEN: Okay.

Moving to another topic; we heard evidence yesterday – and this was, of course, Exhibits, I think, P-00017 and P-00018 – where a deck had been prepared and a particular slide had been removed from that deck. You remember that evidence, I would assume.

MR. KEAN: Yes, I do.

MR. BUDDEN: Yes, and the slide that was removed contained – and we can review it if you want, but I don't think there's any dispute. It contained information that would have revealed – would have alerted MHI to the existence of the Westney reference to this strategic risk.

Is that your recollection of the – of that slide that was removed?

MR. KEAN: The slide wasn't removed during the presentation is what I indicated. This – I prepared the slide deck.

MR. BUDDEN: Yeah.

MR. KEAN: I held the slide deck; I presented the slide deck, and as I recall from the exhibits, the presentation – or the emails are some weeks after that exchange occurred between Mr. Crawley and Mr. Harrington.

MR. BUDDEN: Okay, well, we'll return to that in just a second but – this is, I believe, a very important point. Are you saying – we've heard MHI, we've had three individuals from MHI – Mr. Snyder, Mr. Kast and Mr. Wilson – they've all sat at that very table and testified they had not been made aware of the Westney strategic risk, \$497-million number. That was their evidence.

Is your evidence that you, in fact, disclosed that information to them?

MR. KEAN: My recollection is that we met with MHI on the 18th and 19th of June, in St. John's. There were three individuals: Tom Moffat, Gerry Proteau and Al Snyder. The deck that I prepared was reviewed and discussed, as was – and which anchored back to the DG2 risk work that had talked about strategic risk exposure and so on. After I presented that, I provided the slide deck to Mr. Crawley and – really, I didn't have much involvement with Manitoba Hydro thereafter. I just had a question or two that I was posed.

MR. BUDDEN: But you did make that presentation in its unedited form.

MR. KEAN: My recollection is that I did.

MR. BUDDEN: Okay. Okay.

Do you recall anything more about that – any comment, any reaction, anything at all that might help us understand what happened here? Because they're saying they were unaware of it; you're saying you made the presentation. Can you explain – and again, you can't – I'm not asking you to speculate on what they know or they don't know – but can you add anything to the process? Anything about that meeting? Anything that might help us figure out what went wrong?

MR. KEAN: No, I recall that – in general – we provided Manitoba Hydro with a lot of documents following that meeting.

MR. BUDDEN: Okay.

MR. KEAN: And you know, generally the feedback was good. They took a deep dive into the schedule. That was an area of interest to them. And you know, I don't recall any specifics from the meeting, per se.

MR. BUDDEN: So do I take it from your evidence that you were surprised to hear that testimony from the MHI officials?

MR. KEAN: Yes.

MR. BUDDEN: Okay, thank you.

Perhaps we could call up Exhibit P-00014, which is the Grant Thornton report. And I'm interested in page 58, Madam Clerk.

And it's – there's a paragraph there beginning at line 10. I'm really only interested in the last part but for context, perhaps you can just read the whole paragraph, beginning at 10, ending at 19.

MR. KEAN: Just – my monitor has gone blank, sorry. I don't know – maybe I can refer to the exhibit.

MR. BUDDEN: It's the Grant Thornton report.

UNIDENTIFIED MALE SPEAKER: Yeah, okay.

MR. KEAN: These common binders, would it be? Maybe I hit the cord or something underneath here. I just (inaudible) – turned it off and on just to see.

UNIDENTIFIED FEMALE SPEAKER:
(Inaudible.)

MR. KEAN: I'm sorry. I don't have it.

MR. BUDDEN: It's not your fault.

Well, why don't I read it? That might save us time and we can focus on the last part, and it reads as follows: "Nalcor engaged SNC as the Engineering, Procurement and Construction Management ('EPCM') contractor" – I might as well wait, 'cause that's obviously distracting.

MR. KEAN: Yeah.

UNIDENTIFIED MALE SPEAKER:
(Inaudible.)

MR. KEAN: No problem.

MR. BUDDEN: So I'll read –

MR. KEAN: I can see this.

MR. BUDDEN: Okay, sure.

MR. KEAN: (Inaudible.)

MR. BUDDEN: Well, I'll read it to you in any event to help, and I'll highlight the part that's of concern to me.

"Nalcor engaged SNC as the" EPCM "contractor specifically for their experience in hydro-electric projects. SNC's engineers were involved in the design of the project and their estimating team completed approximately 70% of the base estimate. SNC engineers determined material quantities required for each work package and provided quantity tables to the SNC estimating team, which was led by SNC's" chief "Estimator."

So far, is there anything you take issue with?

MR. KEAN: No.

MR. BUDDEN: Okay.

"Labour productivity hours were estimated based upon normal working conditions and then they were increased by an additional 20% to account for the lack of skilled labour in 2012 and potential reductions in productivity due to weather and other circumstances."

Is that correct?

MR. KEAN: That's my understanding, yes.

MR. BUDDEN: Yes, Sir.

"According to SNC's Lead Estimator the total labour hours estimated for the project was initially 12.6 million and then an additional 2.5 million hours were added to that which represented the additional 20%."

So that adds up to 15.1 million, my math is correct. Is that your understanding as well?

MR. KEAN: I'm reading that, yes.

MR. BUDDEN: Okay, was that your understanding independently?

MR. KEAN: The estimators had gone through that exercise to rationalize that, working through it with the planners, yes.

MR. BUDDEN: Okay, so, do I take it from this, and correct me if I'm wrong, at the time of sanction the estimate for labour hours would've been 15.1 million hours?

MR. KEAN: I can't confirm that, because I think, in this case, this would've been only the scope within SNC's estimating, so when you add on the owner's team, the SOBI hours, the EPCM consultant's hours themselves and so on, it would've been much higher than that, I would expect.

MR. BUDDEN: Of course, that's not what it says, though. It says: "According to SNC's Lead Estimator the total labour hours estimated for the project was initially 12.6 million and then an additional 2.5 million hours were added to that which represented the additional 20%."

MR. KEAN: But SNC's – as I indicated earlier – SNC's lead estimator was not responsible for preparing the estimate for the Strait of Belle Isle

crossing, the owner's project management team, or the EPCM services, which would've been in – you know, accumulatively several million hours.

MR. BUDDEN: Sure, so –

MR. KEAN: So you're probably over 20 million.

MR. BUDDEN: Okay, so for the generating aspect of the project – so when he says project there, do we take that to be the actual Muskrat Falls generating station or –

MR. KEAN: No, it would encompass the Muskrat Falls generation facility itself, the HVDC transmission lines, the DC converter stations, the switchyards and so on and reservoir clearing, which would've been encompassed in those, but not any of the engineering or owner's team that may provide oversight of that.

MR. BUDDEN: Okay, so for those elements of the project – of the broader Muskrat Falls Project. When he says project, he's – if I understand you correctly – referring to certain components of the total project?

MR. KEAN: He would be referring to what he's – within his estimating umbrella, yes.

MR. BUDDEN: Yes, and the number he has there is 15.1 million hours, does that sound right to you?

MR. KEAN: I can't recollect the exact person hours, to be honest.

MR. BUDDEN: Okay. Then it goes: "We understand that Nalcor developed mitigation plans to address labour productivity."

Firstly, before I ask that question, are you able to tell us where – for the components of the project that we're all agreed that SNC is speaking to – where did that number end up? If it was 15.1 million at the time of sanction, where did it end up? Are you able to tell us?

MR. KEAN: No, I'm not, sorry.

MR. BUDDEN: Okay, would it have doubled?

MR. KEAN: No.

MR. BUDDEN: Okay, half as much again?

MR. KEAN: I don't know for certain.

MR. BUDDEN: Okay, well we –

MR. KEAN: I know some numbers holistically, but that would be including the owner's team, the EPCM services and so on.

MR. BUDDEN: Okay.

MR. KEAN: So I don't have an apples-to-apples comparison.

MR. BUDDEN: Okay, well, we'll get to that in phase 2, in any event. So you may be back here in a few months and we'll get into it again.

That last sentence there: "We understand that Nalcor developed mitigation plans to address labour productivity." Can you speak to that?

MR. KEAN: I – yes.

MR. BUDDEN: And just elaborate a little more on the nature of those plans?

MR. KEAN: Sure, so labour productivity was identified as a significant strategic risk in 2008 encompassing – and labour productivity is – why is labour productivity a risk? Well, productivity can be driven by a number of elements. It could be driven by late engineering. It could be driven by lack of availability of experienced workers –

MR. BUDDEN: Sure.

MR. KEAN: – weather constraints and, you know, it could be constructability considerations. So there's a whole list of things. In 2008 we initiated a productivity action plan. We brought in a productivity consultant from the University of Calgary who specialized in this area, Dr. Janaka Ruwanpura. We conducted some productivity workshops from which a – the detailed productivity action plan was prepared. That plan encompassed 15 focus areas – key themes, you might say; one might be the availability of labour, another might be winter construction.

And underneath that, there were numerous listing of tasks that needed to be complete in order to enhance and reduce the risk of productivity, as well as our residual efforts. So some of that would have influenced in terms of focusing on getting approved for construction drawings complete before they awarded the contract. Another could be the training of unskilled – training of workers for semi-skilled jobs. Providing – making sure there's good training programs for local residents of Labrador such as the Labrador Aboriginal Training Partnership that came out of that.

So there's a whole spectrum of items that were done in order to reduce that risk exposure over time and that was basically a five year work plan that involved multi-facets of the organization and it was really driven underneath the umbrella of the productivity action plan. So we were focused on all elements of productivity, just not the individual worker because, you know –

MR. BUDDEN: So there's no –

MR. KEAN: – there's a lot of things that contribute to productivity. It's not just the individual worker.

MR. BUDDEN: So there's no specific labour productivity plan, it would have been an element of broader plans?

MR. KEAN: No, there was a specific –

MR. BUDDEN: Okay.

MR. KEAN: – labour productivity plan. Productivity action plan.

MR. BUDDEN: Okay.

MR. KEAN: That was prepared and there's various – that was presented to Grant Thornton during the Grant Thornton phase 1 review.

MR. BUDDEN: Okay.

Okay, for now I'm going to move on to – you made some comments about DarkNL and if I understand you correctly – not about DarkNL as such, but about how the impact – I guess the perceived crisis of DarkNL and the Liberty report and everything that followed led to an

expansion in the – or change in the scope of work of the project. Do you remember giving that evidence?

MR. KEAN: I gave that evidence in the context of the hindsight review that these volumes are presented as; I look back as to things that precipitated potential change.

MR. BUDDEN: Sure.

I guess the – so if I understand correctly the – or perhaps you can tell me what the impact of the – or what was the response to the DarkNL crisis and, particularly, in terms of any cost impacts it might have had for the project cost above what was estimated.

MR. KEAN: So, DarkNL was not a Lower Churchill Project situation. I guess. It was a Newfoundland and Labrador Hydro – operator of the island electrical grid – they were focused on that perspective. Throughout the development of the Lower Churchill, Muskrat Falls Project, there's been a lot of discussion regarding the overall design reliability of the transmission grid.

MR. BUDDEN: And that obviously would have been a pre-sanction discussion as well.

MR. KEAN: Yes, it was featured in both MHI reviews.

MR. BUDDEN: Yes.

MR. KEAN: As well.

MR. BUDDEN: Carry on.

MR. KEAN: Course, reliability is a function of two things: mean time between failure, which is basically the failure of the individual line itself – if the tower falls down, for instance, during some icing event. So there's a lot of focus on design knowledge, design intelligence, to ensure that we've got the most representative icing loads, we're using the latest standards, or if there's a lack of standards for this area, how do we compensate for that?

It's also – the other side of that equation is the mean time to repair. So it's always acknowledged that things will fail. That's why

the designs have dead-end structures to – for anti-cascading logic and so on. So the other aspect is the mean time to repair, which gets into when a failure occurs how do we enact a repair? How do you access the line? How do you – what materials might you need?

So as we – you know, from a DarkNL perspective – it's, you know, I don't think it was necessarily a – you know, it's – throughout that evolution of the design of the HVDC line – the overhead system – there was a lot of optimization, I guess, to ensure that the line was built as robustly as possible. And they're – and a fairly conservative approach, which transcended and worked its way even into the construction phase, you know, we're ensuring that foundation selection was very robust, very conservative, in the – based upon the (inaudible) geotechnical conditions.

MR. BUDDEN: So, I guess I would perhaps put it this way – the original estimate made a – made certain assumptions about the robustness of what was necessary to transfer power from Muskrat Falls to Soldiers Pond. So certain assumptions were made about how robust the system needed to be – obviously, right?

MR. KEAN: Yes.

MR. BUDDEN: Okay. And in the light of DarkNL, those assumptions were revisited and it was determined that they were not robust enough and that a more robust transmission system was necessary.

MR. KEAN: I don't know –

MR. BUDDEN: (Inaudible) correct as well, isn't it?

MR. KEAN: Partially. And I say partially because I don't know if DarkNL was the pivoting event.

MR. BUDDEN: (Inaudible.)

MR. KEAN: But throughout those review – optimization – throughout the observations that came from MHI and some of the questions that came – as I understand it – there was a lot of small optimizations being taken, some revisiting of design criteria and so on to ensure that we

would have a system that would be as robust as needed.

MR. BUDDEN: Does it not follow that the original estimate did not estimate for a robust-enough system?

MR. KEAN: The estimate was aligned with the design criteria that was available at that point in time.

MR. BUDDEN: Which turned out within three or four years to be determined not robust enough.

MR. KEAN: From a system reliability standard there was certain expectations that were changing regarding the requirements therein. So that was –

MR. BUDDEN: That's all that matters for a transmission system –

MR. KEAN: Yes.

MR. BUDDEN: – system reliability, right?

MR. KEAN: And there was no wholesale fundamental change – we're gonna do this. But it's a matter of optimizations and areas, you might say, in order to give us a level – an increased level of confidence and perhaps increase that reliability period to an even higher amount.

MR. BUDDEN: Sure.

MR. KEAN: Return – reliability return period.

MR. BUDDEN: What would be the impact in terms of cost of that scope of change?

MR. KEAN: I don't know.

MR. BUDDEN: Okay. Would it be 10 million, 100 million, 500 million? Can you give us any idea?

MR. KEAN: The – one of the exhibits that's been entered refers to post-sanction events, and there is a diagram there, a fishbone diagram, that contains seven causal factors that really influenced the overall increase of costs on the transmission system as a whole. And I can't say

that any isolation of individual events such as the one you're pointing out to has been done to ring-fence the actual cost associated with pure reliability.

MR. BUDDEN: Okay. The cost cleared would be significant, but you just can't quantify it?

MR. KEAN: Personally I can't quantify – I have not quantified it, no.

MR. BUDDEN: Okay.

I've only got a couple of areas left, but the – when you were discussing – you had a fairly extensive discussion – which I won't revisit – about your use of the Hollmann draft report. However, one thing that does sort of occur to me – and at one point you were asked by Ms. O'Brien why you didn't follow Mr. Hollmann's advice. And your response was, I followed industry standards. Do you recall that evidence?

MR. KEAN: I don't recall specifically but...

MR. BUDDEN: Okay. Well I'm suggesting to you that's what transpired.

MR. KEAN: Okay.

MR. BUDDEN: And I'm sure your lawyer will correct me if I'm getting it wrong. I guess a couple of questions flow from that. Firstly, I've, you know, looked up Mr. Hollmann – it's not hard to do – he seems to be a person of deep knowledge and experience. You would agree with me there?

MR. KEAN: I would agree completely.

MR. BUDDEN: He's actually literally written the text on project risk assessment, I believe, it's called *Project Risk Quantification*, so –

MR. KEAN: Yes, I have a copy on my desk at home.

MR. BUDDEN: Sure, a copy you refer to, a copy you regard as determinative?

MR. KEAN: It's one of the several references –

MR. BUDDEN: Okay, sure.

MR. KEAN: – that I have there.

MR. BUDDEN: So he clearly had world-class knowledge when it came to risk assessment.

MR. KEAN: He has great knowledge.

MR. BUDDEN: A world-class knowledge. If not him, who?

MR. KEAN: Sure.

MR. BUDDEN: Okay.

Was your knowledge a match for his at this point in your career, as to what industry standards were?

MR. KEAN: No.

MR. BUDDEN: Okay.

Where then is the logic in saying you followed industry standards, when one of the gentlemen who set those standards has recommended otherwise?

MR. KEAN: Well, our overall risk program was being guided by Westney; Richard Westney is probably of equivalent pedigree as Mr. Hollmann in the context. He's written – you know, he's one of the – he's the father of total cost management from AACE. So we felt quite comfortable with their approaches.

And from a perspective of the recommended practices – there's no standards, I would like to point out. It's very difficult to get industry to agree on what is a standard. So that's why AACE publishes recommended practices. And those – we endeavor to follow those recommended practices and the particular observations of Mr. Hollmann.

Mr. Hollmann acknowledged in his report, I think it's page 10, he talked about the assessment –

MR. BUDDEN: (Inaudible) draft – his draft report.

MR. KEAN: – (inaudible) – yes. The report that still stands. That he did not have access to the Decision Gate 3 QRA because at that – nor the

escalation – escalation analysis because at that point in time it had not been completed.

While our risk management plan was very active and, you know, as I mentioned about productivity, it's an ongoing thing. We had not concluded our DG3 QRA nor had it been documented in the DG3 QRA report, so it was not quite prudent for Mr. Hollmann to provide such comments therein. And really –

MR. BUDDEN: Mr. Hollmann is being imprudent?

MR. KEAN: No, in the scope of his work that he was tasked to do for us.

MR. BUDDEN: Okay. So –

MR. KEAN: Mr. Hollmann is very knowledgeable.

MR. BUDDEN: Oh, he's knowledgeable but you still felt comfortable on a project of this scale in substituting your opinion for his?

MR. KEAN: I didn't – I'm not sure I follow you.

MR. BUDDEN: Okay.

In response to the question about following his advice you answered: you followed industry standards. So I'm suggesting to you, you in effect substituted your understanding of industry standards for his.

MR. KEAN: No, Mr. Hollmann – if you go back to the report, there's quite a list of standards that Mr. Hollmann references there. He provides general findings and observations regarding, you know, where we could improve in various areas and our plan was to ensure we worked through those. Mr. Hollmann –

MR. BUDDEN: Was that entirely your decision or were you pressured to come to that decision?

MR. KEAN: Entirely mine –

MS. HUTCHINGS: I wonder – excuse me.

I wonder if Mr. Budden would let the witness finish the sentence instead of cutting him off, because it seems like a very important area.

MR. BUDDEN: If I did cut you off, I apologize, and perhaps you can go back to what you were saying.

MR. KEAN: An – you know, so I met Mr. Hollmann on several occasions. You know, I was aware of a lot of the great work he does. It came up yesterday about Mr. Hollmann's writing, and he's been a great proponent of AACE – written lots of technical papers. Very knowledgeable individual; contributed a lot to the profession.

Mr. Hollmann was engaged to provide a review for us. He provided (inaudible) services in terms of escalation modelling support, to give us guidance on doing that, which continued through DG3. We had – we didn't look to Westney in that regard, we looked – for risk analysis – or for escalation – we looked to Mr. Hollmann for risk – for escalation, 'cause he had some (inaudible) practices in that area.

We – so Mr. Hollmann became engaged by myself in this estimate review process as a peer review, and it's a very much a qualitative review. Were we following, generally, the standards? Did we have an estimate plan? What's our intention to put together a basis of estimate? You know, what's our approach to defining pricing and so on?

So, you know, from a perspective of that, Mr. Hollmann was providing that cold eyes check of that and bringing together his deep knowledge of the industry standards and experiences from doing similar reviews with a multitude of owners.

And so that provided us with, you know, insights and observations of where we could – may need to improve. He had some observations regarding our risk process; he did not have the benefit of our final DG3 QRA because it had not been done. However, you know, from a perspective of his observations on risk management versus Mr. Westney's view on certain things in risk management, we were working with Westney – Mr. Westney is very well-known in that area all – as well. You know,

different experts sometimes have different views.

MR. BUDDEN: So you're saying that you – okay, (inaudible) and that different experts have different views. Are you saying that you took the views of Mr. Westney in opposition to those of Mr. Hollmann?

MR. KEAN: No, I didn't say that –

MR. BUDDEN: That is what –

MR. KEAN: – we stuck with the –

MR. BUDDEN: – you said, but carry on.

MR. KEAN: Well, we tried to anchor to the industry-recommended practices.

MR. BUDDEN: Okay.

Okay, well, I've made my point.

Perhaps we can pretty much end this – we can call up Exhibit P-00014 – I believe, is Dr. – P-00004, Dr. Flyvbjerg's report. I believe it's P-00004. Yes. And we could scroll down to page 4, please.

I'd like to walk you through – sort of, end this while walking you some of this – through some of this. You're familiar with this report I assume, Mr. Kean?

MR. KEAN: I saw it on the Exhibits.

MR. BUDDEN: Okay.

MR. KEAN: So I guess.

MR. BUDDEN: Have you read it?

MR. KEAN: I read – I worked my way through it, yes.

MR. BUDDEN: Sure, okay. Well, let's do it again for a little bit anyway.

That second paragraph: "Hydro-electric dam projects are high-risk projects, with an average cost overrun of 96% (median 32%) and an average schedule overrun of 42% (median 27%). Cost and schedule overruns of hydro-electric

dam projects have remained constant in the last" – 50 [sp 60] years.

Were you aware of this, in a general sense at least, while you were working in this pre-sanctioned period on these cost estimates?

MR. KEAN: Not – I'm quite aware of Mr. Flyvbjerg's research in general.

MR. BUDDEN: Were you at the time, back in 2011, 2012?

MR. KEAN: I wasn't aware of the particular studies referencing – regarding hydro projects.

MR. BUDDEN: Okay.

And again, I'm not asking whether you knew it was 32 per cent or something else, but did you have a general awareness that hydroelectric dam projects were high-risk projects and typically had significant cost and scheduling overruns? Is that knowledge you would've had at that time?

MR. KEAN: Yes.

MR. BUDDEN: Okay.

Perhaps we can scroll down a little tiny more. And perhaps you can read the "Often cost and schedule overruns" paragraph.

MR. KEAN: Sorry, I don't have –

MR. BUDDEN: Oh, you're not able to? Okay.

"Often cost and schedule overruns are explained by unforeseen conditions and adverse" – effects – "... unforeseen geology, project complexity, scope changes, bad weather. However, these are not root causes. The root causes of cost overruns and schedule delays can be found in optimism and political bias in estimates of geology, complexity, scope, weather, etc., which translate into underestimates of cost and schedule, which later turn into cost and schedule overruns."

You're the first member of the project team we've had here, so I'm interested in your views on this – having lived this. The – what is your view, I guess – do you find that paragraph to be generally correct? Is it generally in accordance with what you believe to be true?

MR. KEAN: I'm aware of the challenges that it is to get a good quality viewpoint and perspective. The aspect of bias – creeping bias and those concepts are within my vocabulary, yes.

MR. BUDDEN: Were they within your vocabulary back in –

MR. KEAN: Yes.

MR. BUDDEN: – 2011, 2012?

MR. KEAN: Yes.

MR. BUDDEN: So you were aware of the inherent risk of optimism, quote – well, this says, “The root causes of cost overruns and schedule delays can be found in optimism ...” da, da, da, “... which translate into underestimates of cost and schedule overruns.”

Were you aware of that risk back in 2012?

MR. KEAN: Yes, it's actually featured on a paper I wrote in 2011 –

MR. BUDDEN: Okay.

MR. KEAN: – and published.

MR. BUDDEN: To what degree did you incorporate into your own practices, I guess, an awareness of this optimism bias?

MR. KEAN: Very much so. That's a key aspect of assurance, using third parties, and third parties who aren't necessarily engaged in the day-to-day aspects of the project, to provide cold eye perspectives, inputs on the aspects in the case of – to give you an example – the Strait of Belle Isle cable, a very unique piece for this project, of course. Completed very successfully, a lot of good work by the team, but they would've engaged experts such as Statnett out of Norway, the grid operator that had completed, you know, the NorNed cable quite recently between the Netherlands and Norway, as input into thoughts and process and learnings to ensure that that assurance check was there.

So we had – you could build on from their experiences, how much time, downtime you might experience and so on during the

installation, or if you had to do re-terminations and so on. So, through that process, as an example, one entity of engaging others to ensure you get good quality input into that.

And as we talked about yesterday, and it's been pointed out about the probability of a schedule being low from a probabilistic perspective, when you consider certain risk events, well that's an indication of, in my view, not having optimism bias creep in, otherwise we wouldn't have produced a schedule with such exposure ranges.

MR. BUDDEN: Do you not believe that moving from P75 to a P50 is a manifestation of optimism bias?

MR. KEAN: I don't know the circumstances surrounding that move, and that's probably a question best answered by those that understand that more than I do.

MR. BUDDEN: Well, I'll ask you –

MR. KEAN: The decision makers.

MR. BUDDEN: I'll ask you anyway: Do you believe that it is a manifestation of optimism bias? You were in the middle of this project, it moved from P75 to a P50, do you not believe that is a manifestation of optimism bias?

MR. KEAN: No, I don't, I believe that's a view on it, as I mentioned earlier, a risk appetite approach.

MR. BUDDEN: Okay.

MR. KEAN: Optimism bias really is an aspect of how the inputs go into the estimate itself and the ranging to come up with the viewpoint on perspectives on what that estimate and schedule would look like. The actually changing from one probabilistic value to another is more, you know, a viewpoint of risk appetite, is what my –

MR. BUDDEN: But does not that circle back, a viewpoint of risk appetite is not an appetite for risk also, 'cause obviously nobody does something that they think is gonna fail. You would agree with me there? No rational person says: I have an appetite for risk and I don't care if I fail or if I win, you know, I just like risk. So

nobody really has an appetite for risk in the abstract. You would agree with me there?

MR. KEAN: We all have different risk appetites.

MR. BUDDEN: Okay, and I'd suggest to you that the risk appetite of the project team driven by optimism was perhaps excessive for the circumstances. Would you agree with that?

MR. KEAN: No.

MR. BUDDEN: Okay. You feel that the risk appetite was nuanced and appropriate?

MR. KEAN: Well, from a project team perspective, we are not the decision makers when it came to the P-values, as I indicated earlier. Our analysis and the work that we did demonstrated quality input. We used tools and techniques as Mr. Flyvbjerg mentioned. Reference class forecasting at a detailed level, to give us a level of assurance of the individual inputs to the estimate.

MR. BUDDEN: Were you uneasy with the move from a P75 to a P50? It wasn't your decision, we've established that. Did it leave you uneasy?

MR. KEAN: No, I've indicated previously that my understanding of – from a – while I wasn't involved in the CPW modelling, I provided inputs. My understanding of CPW modelling is that if you're comparing options, you use an expected guide to ensure a like-for-like comparison. So, in that regard, P50 for me wasn't expected.

In the context of beyond that, I've always been a proponent that there is risk exposure beyond that. And my job is to try our best to quantify what that risk exposure would be, and provide that information to those that would be in the position to make the decision of how that exposure would best be covered.

MR. BUDDEN: In retrospect, do you believe you've failed at that job to properly quantify it?

MR. KEAN: No.

MR. BUDDEN: Okay.

You know why we're here? I mean, we're here because this project is in fact years behind schedule and billions of dollars beyond the estimate that you were one of the authors of?

MR. KEAN: Yes.

MR. BUDDEN: That's why we're here, right? And you're saying that there's no optimism bias at play here that may have caused that risk – that cost estimate to be lower than it should've been?

MR. KEAN: From a perspective of the – what I said was there's no optimism bias with regards to the base schedule – or sorry, the base estimate. There's no optimism bias from the range of rejections that were produced.

MR. BUDDEN: Okay. Well, we're gonna be talking about this for months this winter, and you will no doubt have a chance to come back and explain. But just as a bit of a preview: What went wrong? How did we get from an estimate – ?

THE COMMISSIONER: I think we will wait for that.

MR. BUDDEN: Okay.

THE COMMISSIONER: Right now, I'm trying to focus on –

MR. BUDDEN: No preview? No –

THE COMMISSIONER: No preview, let's keep everybody in suspense.

MR. BUDDEN: Okay.

THE COMMISSIONER: And actually, you have a – you likely have an exhibit where the project management team has indicated what their reviews are, or potentially what their views are untested. But I don't think I want to get into, at this stage –

MR. BUDDEN: Okay.

THE COMMISSIONER: – what happened. Let's try to keep things as confined as we can.

MR. BUDDEN: Okay, I'm done then.

Thank you.

MR. KEAN: You're welcome.

THE COMMISSIONER: All right. Edmund Martin?

MR. SMITH: Good morning.

MR. KEAN: Good morning to you.

MR. SMITH: Harold Smith for Edmund Martin.

MR. KEAN: Mr. Smith.

MR. SMITH: I have a – not very many questions, a few. And I'm asking the Clerk to put up – Madam Clerk, 00808, page 26.

THE COMMISSIONER: Tab 39.

Your screen is still off, is it, Mr. Kean?

MR. KEAN: Yes, it is. I got the binder here, so ...

Actually, I've just got one page.

THE COMMISSIONER: Tab 39 and it's not the whole report. What's the problem with the – so let's just wait. We're gonna see if we can fix this now.

MR. SMITH: I'm – are you okay?

MR. KEAN: I was just looking to see if I kicked the cord off.

MR. SMITH: Oh.

THE COMMISSIONER: We're just gonna see – there might just – the last time that this happened, there was a cord that actually was kicked off and we'll just try to get gentlemen in here to fix it right quick.

MR. SMITH: Okay.

MR. KEAN: Turned off and on a couple of times.

I did note yesterday it used to blink some times.

UNIDENTIFIED MALE SPEAKER: Yeah.

MR. KEAN: I didn't know if my feet hit the cord or something.

UNIDENTIFIED MALE SPEAKER: It's possible.

MR. KEAN: Okay, (inaudible).

MS. O'BRIEN: This is actually in the (inaudible) exhibits at tab 17 (inaudible).

MR. KEAN: It's on. My screen is live again, so ...

MS. O'BRIEN: Oh, okay.

MR. SMITH: It's been fixed.

MR. KEAN: Yes, it has. Didn't foresee that risk today.

MR. SMITH: Okay.

THE COMMISSIONER: So is it up yet?

MR. KEAN: Yes, is it.

MR. SMITH: Yes.

THE COMMISSIONER: Okay, perfect.

MR. SMITH: I'm focusing on the note that was – your attention was drawn to by Commission counsel. And I'm – you've been further focusing on the – essentially the last few lines where it says six – it says that "in order to address Emera's concern regarding its ability to sell the Strategic Risk concept to its ... Nova Scotia regulator" and "the Nova Scotia Utility ... Review board."

And the reason I focus on that is, is concept is considerably different than selling the strategic risk amount or strategic risk quantification. It's a concept of strategic risk that was addressed by your note.

And I was wondering whether you were on the Emera negotiating team.

MR. KEAN: I was not.

MR. SMITH: Okay. And you stated that, you know, you had second thoughts to go back and look as to where that may have come from. Did you find any support documentation or support information upon which you based that statement?

MR. KEAN: I think what I indicated yesterday was that I couldn't find any statement regarding the last part about selling the strategic risk concept. I found reference of removal of the 6 per cent, but I couldn't confirm that statement, no.

MR. SMITH: Okay. So if there are – essentially from your perspective, no information at your command to identify that reference to concept, the sale – selling of strategic risk concepts to the Nova Scotia UARB.

MR. KEAN: No. The document was written in June 2011, so –

MR. SMITH: Yeah.

MR. KEAN: – I think – as I said yesterday – if I had written it down at that point in time, I must have had some knowledge of that. Whether that knowledge was inaccurate, that's another question I guess. But I guess I didn't – you know, it came from somewhere.

MR. SMITH: I'm going to suggest to you it might have been inaccurate. And I point you to P-00245 and ask you – I don't think that's in your book. It's –

THE COMMISSIONER: Just coming up on the screen there now.

MR. KEAN: Yes, I have it.

MR. SMITH: I was wondering if you could go to page 90 and 91. No – particularly 91, 91. Okay.

Now, this is the decision of the Nova Scotia UARB, and in the evidence before the UARB, there is a reference to the Enerco review of the Maritime Link project and particularly bullet three. The concerns expressed by Enerco included strategic risk. "Although tactical and strategic risk were identified, NSPML's register of 275 risks was not fully quantified. Also,

Enerco noted that NSPML attributed an overly optimistic low value to the worst delay risks associated with marine work in a narrow marine weather window."

It would appear that that concept of strategic risk was something the Nova Scotia UARB would be live to, because it appears, from that expert report that they have, it was before them. In other words, it's a concept that the UARB do not distinguish or denigrate. So it sort of looks like you may have been in error.

MR. KEAN: Okay. I'm not familiar with the UARB. I didn't follow the process or –

MR. SMITH: No.

But that seems to be contradicted. On the one side, the concept of strategic risk before the UARB, which is what your note references, and the fact that strategic risk was contemplated by the UARB –

MR. KEAN: Sure.

MR. SMITH: – makes it seem like the concept issue is not valid.

MR. KEAN: Okay.

MR. SMITH: Do you accept that?

MR. KEAN: Yes, this exhibit references both types of risk. It's –

MR. SMITH: Right.

MR. KEAN: – recognizing that ...

MR. SMITH: So in that circumstance and looking, you know, if you will, forward to the CE-52, which I believe now is 1000 – I'll have to find it quickly. I believe it was Exhibit – sorry, 01003 – P-01003.

THE COMMISSIONER: That's tab 30.

MR. SMITH: 30, okay.

You testified yesterday that you were requested, I think, to align what was said in P-01003 with this report, and you redid the report taking out references to your note, et cetera.

MR. KEAN: Yes.

MR. SMITH: Okay. Could that be characterized as a correction?

MR. KEAN: Well, it was changed to ensure that the document aligned with the philosophy that existed.

MR. SMITH: Yes.

MR. KEAN: I don't recall any aspect of specific correction being pointed out in that regard.

MR. SMITH: No.

MR. KEAN: As this, you know – I don't think there's been any – I recall that from many presentations they gave and several exhibits that are here that the aspect of the 6 per cent coming out was referenced quite a bit. The latter part about the UARB piece wasn't in those statements. It was only in the risk report and featured its way into the, I guess, the infamous five-volume set that we have today.

MR. SMITH: Right. But I put it to you that the confidential exhibit, which turns into P-01003, makes – again, makes no reference of the 6 per cent being removed for that reason, and I'm wondering whether or not the change in the document, which is changed from – which was done a little bit later in – 808 was I think changed in – excuse me –

MR. KEAN: October.

MR. SMITH: Yes, September or October. I'm trying to remember the date, but I can't.

Yeah, so is that – is it reasonable to have that removed if it's unsupported in the material that existed at that time?

MR. KEAN: If it was an incorrect error, and it was pointed out, it would not be unreasonable for it to be removed.

MR. SMITH: Okay.

MR. KEAN: I just don't recall the specifics.

MR. SMITH: Okay.

Do you recall whether the strategic risk analysis was done in relation to the Isolated Island project?

MR. KEAN: I'm not aware – I wasn't aware of the – any risk work on that, on the Isolated Island. I wasn't involved, as I indicated earlier, on any of the estimating work there.

MR. SMITH: And would you expect, if you're doing the comparison between the two, that if you're going to put strategic risk in one, you have to put it in the other one?

MR. KEAN: You need to have what – you need to understand your risk exposure and either – if you're doing any option analysis, yes, so ...

MR. SMITH: Now, you gave Mr. Budden a couple of examples – or an example at least – of steps taken to modify or mitigate against labour – I think it was labour availability risk, if I'm not mistaken?

MR. KEAN: Yes.

MR. SMITH: Okay.

What steps, if any, were taken to deal with a schedule? And I think you touched upon one or two of them yesterday, but I'd like you to elaborate if you could.

MR. KEAN: Okay.

The overall schedule, I indicated yesterday, was a detailed piece of work for Muskrat Falls generation and transmission system completed by SNC's lead planner, Mr. Stanton. That provided the basis for us to do our schedule risk analysis. That schedule risk analysis – we talk a lot about Ps, but the most important piece of data that the schedule risk analysis identifies is which tasks are critical.

When you do these modelling, some tasks have a higher degree of criticality than others. So that process – you know, it's a bit of a stressing, the – you're throwing various scenarios at it to try to see how it will behave. If you're late starting one activity, what does that mean to another?

So that stress testing revealed that we have a lot of exposure for the front-end activities,

particularly if project sanction were to slide, or we wouldn't – or if we didn't have good progress on the early infrastructure works, so for timeline context we were doing the schedule analysis in early June, which was about the same time we were starting the access road at Muskrat Falls, which was the first piece of work starting in construction power.

The schedule demonstrated that in order to achieve first power in 2017, it had – you had to achieve your river diversion in 2015. In order to achieve river diversion in 2015, you needed to start spillway construction in – at the end of 2013. In order to start spillway construction, you needed to have a riverside cofferdam. Likewise, you needed to do your bulk excavation, which meant you had to get your road to site.

So the time analysis revealed certain activities have a high degree of criticality. The bulk excavation had a high degree of criticality. The access road getting into site and getting the vegetation cleared from the site had a high degree of criticality.

So we do this – I tried to caution yesterday that these – this is not black and white, we try to work through this to get insights in this analysis, but what it did reveal is those activities in schedule at a risk index of very high – at-risk criticality index. And we wanted to ensure – we were concerned about the progress of the access road from the perspective of its progress would delay the site clearing. So what we decided to do was invest in a tolt road construction ahead of the main road that would be constructed by the clearing contractor to allow him to advance his work front and get the site cleared.

We also made a decision – because after receiving the bids for the main accommodations complex, prices were a bit higher than anticipated, the delivery times were out. We knew we needed to have beds to support the bulk excavation contractor, so we secured – made the decision, based upon the risk analysis showing the main camp would not be available, we acquired Manitoba Hydro's Wuskwatim camp for 300 persons. We brought that in and that final decision was made in the first week of September.

MR. SMITH: Of what year?

MR. KEAN: 2012.

MR. SMITH: So this is before sanction.

MR. KEAN: Yes.

The other critical thing in our schedule demonstrated is that we were not awarding mass excavation contract until sanction had been approved. We highlighted that to say sanction, we knew, was slipping. It was initially September. It was – we didn't really know – as a project team we knew it was going to be a bit later. So – but we knew in order – what we needed to achieve the 2017 power timeline – the July 2017 schedule, so everything had a schedule sequence in the detailed schedule.

So the – awarding the bulk excavation contract, it was a condition precedent in the time schedule analysis that you had to have project sanction. So project sanction delayed what would show not being able to award the bulk excavation contract. Bulk excavation was a critical path to a July 2017 first power.

So what we did get is we got approval to award the contract to – and we introduced several milestones there. We could allow the contractor to mobilize; however, we wouldn't allow the contractor to do – and we'd allow him to set up a site, but not start physical rock removal. Because in the event sanction wouldn't occur, of course, you can't replace the rock, unlike some trees and overburden.

So that was some changes that resulted in, as I indicated yesterday, a reduction on a P50 basis by about two months in that perspective. And so I guess why I say that is from – we do the analysis, we stress the schedule –

MR. SMITH: Can I stop you just for a second? When you say reduce by a couple of months, what does that mean to those of us who don't know your job very well?

MR. KEAN: Sorry. The risk analysis showed at a P50 basis there's a probabilistic distribution there. At a P50 basis, first power would be in July of 2018 versus the as scheduled July of 2017. The changes that we had made, the risk mitigation measures that we had taken, demonstrated that when implemented they could

reduce that exposure by two months. So we would potentially bring back that July 18, P50 to a couple of months before that.

MR. SMITH: Okay, can you – what else was done to reduce that scheduling risk or mitigate the scheduling risk?

MR. KEAN: There was a lot of focus on concrete pour optimization, as well as – because concrete placement rates was very important, as was the redundancy and batch plant configuration. And that was highlighted by Mr. Lemay in his review of the schedule for me that had been put together by the planners – and the production rates is that batch plant capability is very important.

So our requirement of the contractor for the CH7 was that supplemental batch plant capacity. We were looking at the optimization of the concrete pour sizes because a concrete – in order to achieve the production and placement rates that underpin the schedule, which I think was about 12,000 cubic metres a month, it's really driven by a lot of individual concrete pours.

So how can – once you form up a pour, you know, play – do the concrete – after all the rebar and the placing of the concrete, there's a time that has to be before you can remove the form. So we're trying to optimize the pour size so we could get the overall (inaudible) sustainable.

So that was underway, so there was a lot of different things and perhaps – you know, the job we recognize was driven by weather, some heavy constrained weather seasonality of when we could do the river diversion for instance. Because you have to wait until the ice comes out of the river and the big spring freshet or flood water pass before you're going to actually try to close that river.

So trying to stockpile, we looked at the optimization of the cofferdam arrangement for actually closing that river so we could reduce the risk of not closing. So I guess the modelling is what I – it's a lot of focus on the P, but it's important to recognize the model gives information. It helps identify your stress points and that, as a project team, we try to focus on the stress points so we can deliver that July 2017 power to the greatest extent possible, but there –

while recognizing there are, you know, things out that may serve us that we aren't aware of.

MR. SMITH: You mentioned yesterday, as well, a little bit of leeway in the number of days in the schedule that were work days, recognizing that there are downtimes, I think, is the way you put it.

MR. KEAN: We – the schedule's very complex. It's 10,000 line items of data. We simplify that into a model to give a – undertake time analysis, risk analysis.

The detailed schedule included – was predicated upon six working days a week; however, our assumptions have always been we would be working seven days a week. That was built in as an allowance for non-productive time, site, you know, site changing, change out, shift turnovers, you know, some weather downtime, weather day here and there. So that's how the planners incorporated that in their allowance, just like I think it was indicated in the exhibit a little while ago.

Mr. Lemay and team looked at a 20 per cent allowance on the hours, so it wasn't, you know, to try to accommodate – recognize that there's certain risks. Let's try to accommodate for some of that now. So that was included in – that's what underpinned the July 2017 schedule.

MR. SMITH: Okay.

And would it – would that, if you will, six days in the schedule work instead of seven, would that have moved the, I think, now the May '17 or May '18 back further?

MR. KEAN: When we did the initial analysis, I indicated yesterday, I was not aware of that.

The – what – it's built into – in Primavera there are working calendars. There's many different working calendars in that tool, and the planners had agreed that's what they would work with.

So after we did their risk analysis, and we started to look at the de-risking throughout the summer, the planners acknowledged that it does exist. I wasn't totally – it might have been informed at one point in time, but it wasn't an item that we were talking about when we were

building out our time-risk model or holding workshops. So, you know, if we would've given consideration to that in the, you know, in the risk analysis, because risk is opportunity and threats, we should've given some consideration to that.

What that would've been – there would've been some benefit for that that would've brought your – you know, would've demonstrated that on a probabilistic basis, you would've had a higher degree of probability of achieving a 2017 first power. I can't say what that probability would be.

MR. SMITH: Yeah. What month that would've happened, but you believe it would bring it back to 2017?

MR. KEAN: No, I don't – well, from a probabilistic basis, I can't say that it would've demonstrated 2017 first power because of a lot of the different things.

MR. SMITH: Yeah.

MR. KEAN: But it would've increased the probability – the P50 probability would have demonstrated that, in all likelihood, the P50 would have been much earlier. However, on the extremes, it still might have been the full extremes.

MR. SMITH: Okay. Thank you.

Now, I understand that there was a risk analysis done for DG3?

MR. KEAN: Yes.

MR. SMITH: And the things that you've described, whether it be the roadworks, the bulk excavation, et cetera, were all these things done after the risk analysis of Westney in, I think it's June, July, I believe, of 2012?

MR. KEAN: The original time-modelling exercise didn't include those. Those were things, as I indicated, that were spurred from the analysis. They revealed that these activities had a lot of risk – lot of criticality. So that helped drive the work plan, if you would.

MR. SMITH: Okay.

MR. KEAN: Our focus areas. And that's what I tried to articulate in that next review that we did in early September.

MR. SMITH: Now, I understand that there are allowances, or buffers, added into the base costs from time to time. Do you know what I'm referring to?

MR. KEAN: There are allowances – allowances are used for, basically, recognized items that may be a little bit difficult to quantify. And they're often used as a – you know, you may recognize that you're going to provide a safety-incentive program. You don't know what that incentive program would be, but you know you're going to have to fund something. So you make a provisional allowance for that, as an example.

MR. SMITH: And that would be considered, in your world, an allowance or a buffer?

MR. KEAN: That would be considered an allowance.

MR. SMITH: Allowance. Okay.

And do you recall any – other than that one, any other allowances or buffers that were included in your cost estimating?

MR. KEAN: I guess the Grant Thornton report pointed out there, the allowance that Mr. Lemay and team came forward with from a labour-productivity performance therein. There would have been, you know – there were some allowances for some things that weren't necessarily quantified to the greatest extent, such as the safety-incentive program, X-number cents per every hour that we expected to undertake.

There were some allowances associated with, you know, things that were a little bit uncertain, where we put some amounts in for fire – for rescue boats in the river. You know, we put some allowances in there for certain PPE and training and things of these type, you know.

MR. SMITH: And do you recall completing a cost estimate at P75 for the Muskrat Falls operation?

MR. KEAN: Pardon me?

MR. SMITH: Do you recall using P75 to complete your capital cost estimates for Muskrat Falls – ever doing it? 'Cause there's some suggestion here that you went from P75 to P50. Now, the evidence seems to suggest that that was from Gull Island to Muskrat Falls. I'm just wondering if –

MR. KEAN: (Inaudible.)

MR. SMITH: – at Muskrat Falls you ever did an estimate at P75.

MR. KEAN: Well, I would like to clarify to say that the estimate, technically, the estimate is not prepared at a particular probability. The estimate is prepared on a probabilistic distribution curve; it's prepared. I don't recall being asked to provide a P75 viewpoint on what – for Muskrat Falls.

MR. SMITH: At any time?

MR. KEAN: At any point in time.

MR. SMITH: Thank you, Sir. That's all the questions I have.

THE COMMISSIONER: All right, I think we'll take our break here now for 10 minutes, and then we'll come back and next will be Kathy Dunderdale.

CLERK: All rise.

Recess

CLERK: Please be seated.

THE COMMISSIONER: All right. Kathy Dunderdale?

UNIDENTIFIED MALE SPEAKER: No questions, Commissioner.

THE COMMISSIONER: Former Provincial Government Officials '03-'15?

UNIDENTIFIED MALE SPEAKER: Justice, I was talking to Mr. Williams and he informed me he doesn't have any questions.

THE COMMISSIONER: Okay. Julia Mullaley, Charles Bown?

MR. FITZGERALD: I do have questions.

Mr. Kean, my name is Andrew Fitzgerald. I represent Charles Bown and Julia Mullaley. Good morning.

MR. KEAN: Good morning to you.

MR. FITZGERALD: And you are a professional engineer?

MR. KEAN: Yes, I am.

MR. FITZGERALD: And I guess you're a member of the Professional Engineers Association of Newfoundland and Labrador or whatever that governing body is?

MR. KEAN: I'm a member of Professional Engineers and Geoscientists of Newfoundland and Labrador.

MR. FITZGERALD: Okay. And how long have you been a member of that organization?

MR. KEAN: I've been a member since 1997. I've been a P-En since 2002.

MR. FITZGERALD: And pursuant to that membership, you're governed by their rules and procedures and ethics I take it?

MR. KEAN: Yes, I was.

MR. FITZGERALD: You still are?

MR. KEAN: Yes, I am.

MR. FITZGERALD: And you were part of the project team. Lower Churchill Project team.

MR. KEAN: Yes, I was.

MR. FITZGERALD: Your team appears a lot – I hear it in the testimony, and it's all over the documents that you were part of that team.

MR. KEAN: Yes, I was.

MR. FITZGERALD: Okay.

The organizational chart, P-00999, please.

THE COMMISSIONER: Tab –?

MR. FITZGERALD: Oh, sorry.

THE COMMISSIONER: Just one second now, I got it here – 45.

MR. FITZGERALD: Forty-five, yeah.

Page 9, please. Can we just blow it up a little bit? Just bring it up so everybody can see it.

Okay, according to this chart, Mr. Kean you were the Deputy Project Manager, and you would report to Ron Power?

MR. KEAN: That is correct.

MR. FITZGERALD: So was he your superior?

MR. KEAN: Organizationally, yes.

MR. FITZGERALD: Okay.

So in terms of providing you with direction and advice, would you get that directly from Mr. Power?

MR. KEAN: Not always, no.

MR. FITZGERALD: Okay.

So where else would it come from?

MR. KEAN: It may come from Mr. Paul Harrington, as Project Director.

MR. FITZGERALD: Okay, so Paul Harrington on this chart is on the top here. Lower Churchill Project, Director. So there's time when he would bypass Mr. Power and go to you directly?

MR. KEAN: No, and organization such as Lower Churchill works a lot within the white space on the page.

MR. FITZGERALD: Pardon me?

MR. KEAN: An organization such as Lower Churchill, or any large organization, works within the white space on the page –

MR. FITZGERALD: Works with?

MR. KEAN: The white space.

MR. FITZGERALD: The white space on the page?

MR. KEAN: Yes.

MR. FITZGERALD: Okay.

MR. KEAN: As defined within the project governance plan and all the supporting management plans.

MR. FITZGERALD: Okay.

So when you're operating within the white space on the page, who's in charge?

MR. KEAN: Ultimately, it's the CEO.

MR. FITZGERALD: CEO is not on the page.

MR. KEAN: So, it depends on the matter in point. Every – in an organization, there are people in charge of various things.

MR. FITZGERALD: What were your accountabilities?

MR. KEAN: Sure. My accountabilities, I think, were outlined in my scope description initially, as relates to the project services manager.

MR. FITZGERALD: What were they?

MR. KEAN: My – well, accountabilities or responsibilities?

MR. FITZGERALD: Well, what were you responsible for?

MR. KEAN: I was –

MR. FITZGERALD: If something went wrong, for you, for this project. What would land on your desk and someone would say that was Mr. Kean's responsibility?

MR. KEAN: So it would be such things as: ensuring that we have a – plans in place for various activities; our management and change program; ensuring that we have a risk management program that's functional; ensuring that we have people in the project controls team who are competent to undertake their business.

We have information – monthly reports being provided on a regular basis, and so on.

MR. FITZGERALD: If you had a problem, who would you report to?

MR. KEAN: Depend on the issue.

MR. FITZGERALD: Okay. If you had a serious problem, who would you report to?

MR. KEAN: So what –

MR. FITZGERALD: I'm not talking about not enough paperclips. If you had a serious problem with the Lower Churchill Project, whether it's risk, whether it's money – I'm talking about a serious issue – who do you report to?

MR. KEAN: So I just would like to point out in the organization chart, Mr. Ron Power was the general project manager as it relates to the scope within the EPCM services.

MR. FITZGERALD: Okay.

MR. KEAN: There was a lot of other elements of the project in that regard, where I also had oversight, 'cause I held a – sometimes a dual role as a project services manager. So in that regard, that's part of the reason I would get certain clarity from Mr. Harrington.

MR. FITZGERALD: Okay. So the answer is Mr. Harrington?

MR. KEAN: Depending on the matter in question, I guess.

MR. FITZGERALD: Well, a major financial matter, a major risk issue, who would you go to?

MR. KEAN: Mr. Harrington.

MR. FITZGERALD: Okay. Thank you.

P-00894, please.

THE COMMISSIONER: Tab 15.

MR. FITZGERALD: Just scroll down a little bit on the first page. Okay, thank you.

This says "Muskrat Falls Project, The Sanction Decision. Briefing Note as Requested by Nalcor Legal Counsel McInnes-Cooper. Privileged and Confidential."

How did this document come into existence?

MR. KEAN: I really don't know the aspect of the request from McInnes Cooper. I provided some input into this document.

MR. FITZGERALD: Okay. But who –

MR. KEAN: I didn't format –

MR. FITZGERALD: Okay. Who asked you to prepare the document?

MR. KEAN: Mr. Paul Harrington.

MR. FITZGERALD: Okay. Maybe I'll ask him those questions.

If we scroll down a little bit further. That's fine. I need another exhibit. That's fine. Thank you.

When – do you know, when you prepared this document, if the Inquiry had already been called?

MR. KEAN: I don't recall.

MR. FITZGERALD: Do you know whether or not you were asked by Commission counsel to prepare such a document? Or Nalcor was?

MR. KEAN: No, I don't know.

MR. FITZGERALD: Okay.

You've read the document?

MR. KEAN: I haven't read it – the final product, no.

MR. FITZGERALD: Okay.

So whose work is this?

MR. KEAN: I provided – as I indicated to Commission counsel – I provided a significant amount of feedstock material, a draft material for this document –

MR. FITZGERALD: Okay.

MR. KEAN: – in one large file that was taken and eventually became, I guess, the five binders that you see today.

MR. FITZGERALD: Okay. So you didn't read – you didn't review the final product?

MR. KEAN: I didn't review, I've gone through it in, you know, page flip, but I haven't read all the words.

MR. FITZGERALD: It's conceivable that there might be items in here that the other project team members may take issue with?

MR. KEAN: I don't quite understand –

MR. FITZGERALD: I'm trying to figure out how this document came about. Was this the four or five project team members getting together and saying this is the document we're using; we're providing it to legal counsel so they can use it, or was this done piecemeal by each member? How did this come about?

MR. KEAN: So I thought we had went through that previously, but I guess –

MR. FITZGERALD: Well, maybe I didn't understand. That's why I'm asking the question.

MR. KEAN: Okay. So I was asked to provide Mr. Harrington some support in the same manner that one would in preparing a project close-out report to document some of the history of what occurred on the Lower Churchill Project. That occurred late last fall, in about the time this Commission was being called, I believe.

MR. FITZGERALD: Okay.

Do you know if any other project team members had input into the document?

MR. KEAN: I indicated yesterday that it went to a group. When I sent it to Mr. Harrington, I understand that others would have reviewed it.

MR. FITZGERALD: Okay.

MR. KEAN: I don't know entirely who.

MR. FITZGERALD: Okay, thank you. We'll get a chance to ask that.

P-01008, please. And that is tab 56. And this was entitled: Ottawa Presentation.

Do you have the document?

MR. KEAN: Yes, I do.

MR. FITZGERALD: Okay. The subject matter is: key messages, and it's Ottawa Presentation, and it's from you to Mr. Harrington. "Attached is the final version of the deck. I have 5 copies (2 slides per page) printed and available."

So this was a presentation that was going to be used in Ottawa with respect to the federal government?

MR. KEAN: Yes.

MR. FITZGERALD: And I believe you said also that it was going to be the – you indicated the deck was provided for finance. There was a financing piecing to this?

MR. KEAN: I understood that when we – it was part of the overall federal loan guarantee process.

MR. FITZGERALD: Okay. So you realized, when you were preparing the presentation, that there was people going to be relying on this document?

MR. KEAN: It was being used, yes, for information purposes.

MR. FITZGERALD: Yeah.

And page 37 of the document, please.

This is a quote that Mr. Marshall, former premier Marshall, used yesterday. Well, he didn't use the quote, but he referred to Validation Estimating. And Commission counsel brought you to this. This quote – and there is no indication here that this a draft, correct?

MR. KEAN: There's no indication.

MR. FITZGERALD: Yeah.

So despite this being used in your evidence for the purposes of financing the federal loan guarantee, there's still no indication that this is from a draft report, is there?

MR. KEAN: I just responded and said, no, there's no indication.

MR. FITZGERALD: No, there's no indication. And you knew – but my point is you knew this was gonna be relied upon by Mr. Harrington and Nalcor, and there's still no reference to it being a draft, is there? Despite that reliance?

MR. KEAN: And I stated yesterday I saw – didn't see that being a relevant issue.

MR. FITZGERALD: Okay.

You don't think it would be relevant for the federal government, who's gonna provide a federal loan guarantee in the billions of dollars, to know that that came from a draft report?

MR. KEAN: No, in the context of the statement that was made here, this is extracted from a – like, entire report.

MR. FITZGERALD: So you do think it's relevant?

MR. KEAN: No, what I've said is that there – this statement is extracted from a broader report, and that it needs to be used in that context.

And the discussions I indicated was talking about the checks and balances that were done, and this was one quote that I had used to talk about some of that work.

MR. FITZGERALD: That wasn't my question. My question was, you knew this was gonna be relied upon by Nalcor, and even though you knew that it was gonna be relied upon for the federal loan guarantee, you still did not think it was prudent to put draft in there, did you?

MR. KEAN: The level of reliance on this document, I had no idea.

MR. FITZGERALD: Okay, so this is going to Ottawa for a presentation. It says "key messages," and you had no idea the level of reliance. Certainly – you know, it wasn't going

down to some guy's office in Nalcor, saying, here, read this, what do you think? This is a formal presentation. You didn't realize it was going to be relied upon?

MR. KEAN: So the presentation was prepared to provide an overview of the current status of the project in the context of preparing a cost estimate.

MR. FITZGERALD: Oh, I know that.

Did you have permission from Mr. Hollmann to use his draft report?

MR. KEAN: The material – as I understand, any time a consultant's report is issued to Nalcor, it becomes the property of Nalcor for use as it deems appropriate without infringing upon any copyright requirements in those –

MR. FITZGERALD: That wasn't –

MR. KEAN: – (inaudible).

MR. FITZGERALD: – my question.

I asked if you had permission.

MR. KEAN: Permission isn't required.

MR. FITZGERALD: Okay.

Once again, I'm asking did you ask him for permission?

MR. KEAN: It is not required underneath the agreement.

MR. FITZGERALD: So you didn't?

MR. KEAN: One doesn't seek permission when it's – one isn't – doesn't require such permission.

MR. FITZGERALD: Well, you're not a lawyer, are you?

MS. HUTCHINGS: I take objection to these – that line of questioning.

The witness has answered, and I think that suffice. And the questions, now, are getting – the tenor of the questioning is now getting into –

very argumentative – and I don’t see any point of where the questions are going with this. He’s already answered this. He answered this yesterday, and it’s almost like badgering the witness.

MR. FITZGERALD: Justice, with respect, I don’t believe he was asked the question yesterday: If he had permission from Mr. Hollmann to use the draft report. He’s given answers – he’s given answers that are evasive. I just simply asked a question whether you had permission or not. I’m not looking for a legal opinion; he has a view of that in law, I understand that. I simply wanted a yes or no answer, did he ask for Mr. Hollmann’s permission. That’s all – that’s the only place I’m going with this.

THE COMMISSIONER: Point taken. Go ahead.

MR. FITZGERALD: Did you ask Mr. Hollmann for his permission?

MR. KEAN: When you – as a consultant, when you give a report, the owner has that ability to use it.

MR. FITZGERALD: Okay, you’re obviously not going to answer my question. I’ll let the judge make his own determination on that, given your evidence.

P-01006, please.

THE COMMISSIONER: Tab –

MR. FITZGERALD: Tab –

THE COMMISSIONER: – 55.

MR. FITZGERALD: Fifty-five.

If we can – “Privileged and Confidential in Contemplation of Litigation.”

If we can go to page 1 here: “Lower Churchill Project ... Introduction and Project Components June 2018.” You can scroll down just a little bit further?

What was the purpose of this document, Sir?

MR. KEAN: My understanding was it was meant to be – provide an overview of the project to Grant Thornton.

MR. FITZGERALD: Okay, so this was prepared for Grant Thornton?

MR. KEAN: And then a subsequent presentation was planned to be undertaken with the Commission counsel.

MR. FITZGERALD: Okay. On page 2 of your document – of this document – were you the author of this document?

MR. KEAN: No, I wasn’t.

MR. FITZGERALD: Okay. Were you involved with the creation of this document?

MR. KEAN: No, I wasn’t.

MR. FITZGERALD: Okay. You’ve read this document?

MR. KEAN: I don’t think I read this particular one.

MR. FITZGERALD: Were you there at the time of the presentation to Grant Thornton?

MR. KEAN: Not for this slide deck, no.

MR. FITZGERALD: Okay. You’re familiar with the concept of disclaimers?

MR. KEAN: Yes.

MR. FITZGERALD: Okay.

On page 7 of this document there’s an objective there. It says this is to “Share accurate and relevant information with insights to assist Muskrat Falls Inquiry Counsel.” It’s an objective of this?

MR. KEAN: That’s what’s stated there, yes.

MR. FITZGERALD: Yeah, and as an engineer, and you’re familiar with disclaimers, and I guess you would be very familiar with putting limitations on your work or exceptions. You would be thorough when you’re doing that, as an engineer, wouldn’t you?

MR. KEAN: One would use the information that you have.

MR. FITZGERALD: Yeah, and if you didn't have enough information, you would say this is only based on the information I have or I don't have this information. You'd be very clear on it, generally, wouldn't you?

MR. KEAN: Sure.

MR. FITZGERALD: Yeah.

And it's important, you would agree with me, as an engineer that you provide accurate information, relevant information, when necessary?

MR. KEAN: Yes.

MR. FITZGERALD: Yeah.

Yet you did choose not to indicate that the Hollmann quote was a draft, did you?

MR. KEAN: Hollmann quote is not used in this deck, is it? I didn't – I indicated that wasn't –

MR. FITZGERALD: I understand that, but the Hollmann quote –

MR. KEAN: – (inaudible) –

MR. FITZGERALD: The Hollmann quote did originate from your work and the work you were doing – internal to you, is what you said.

MR. KEAN: Yes.

MR. FITZGERALD: And presumably, if it comes into this and it comes out of your work, wherever it's used, that's where it originated.

MR. KEAN: And your point is?

MR. FITZGERALD: My point is: Because you never indicated it was a draft and you never put any type of disclaimer on it, can't you see how some people would've taken that note to mean that the estimate is fantastic, everything is great, life is good?

MR. KEAN: The base estimate was quite good, and I believe Mr. Hollmann was interviewed by

Grant Thornton and there's a quote in Grant Thornton's report reaffirming the same from 23rd of May this year.

MR. FITZGERALD: Yeah, but you didn't know that at the time, did you?

MR. KEAN: Course not.

MR. FITZGERALD: Exactly.

Exhibit P-00130, please. I don't believe it's on the – yes it is, 41. And if we can go to page 146.

I believe, Ms. O'Brien brought you to this yesterday; it's the Key Risk Status Report.

MR. KEAN: Yes.

MR. FITZGERALD: What is a risk lead?

MR. KEAN: That's the person who is stewarding the risk through resolution, ensuring the actions are identified and the plans are put in place to resolve.

MR. FITZGERALD: Who –

MR. KEAN: It's a focal resource. There's a lot of people involved, but it's a focal person for coordination.

MR. FITZGERALD: Who is B. Cra?

MR. KEAN: It's cut off there because – it's meant to indicate Brian Crawley.

MR. FITZGERALD: Okay. And who is Brian Crawley?

MR. KEAN: Brian is a – or was a manager in the Lower Churchill Project management team, responsible for various aspects of the project. I think his title was corporate integration or corporate interface?

MR. FITZGERALD: What prior experience did he have with risk and managing risk that you're aware of?

MR. KEAN: I can't speak to Mr. Crawley's experience.

MR. FITZGERALD: Okay, so you don't know? That's fine.

Do you know what experience, if any, Mr. Harrington had with respect to managing risk?

MR. KEAN: I'm sure Mr. Harrington can give lots of detail, but I know he had 40 years of megaproject experience.

MR. FITZGERALD: Do you know if he had any megaproject experience in hydroelectricity?

MR. KEAN: I don't know for certain.

MR. FITZGERALD: Prior to working at Nalcor, did you?

MR. KEAN: Yes.

MR. FITZGERALD: Where to?

MR. KEAN: I worked as a student with Newfoundland Power and I had the good fortune of growing up with a small – remnants of a hydro facility in my yard.

MR. FITZGERALD: Student at Newfoundland Power, what year was that, roughly?

MR. KEAN: I think that was 1997.

MR. FITZGERALD: 1997. Any other experience with hydroelectricity before working with Nalcor?

MR. KEAN: I had experience with the elements of hydro, but not as a hydro project itself.

MR. FITZGERALD: You have a lot of oil and gas experience, I note. You're in that industry.

MR. KEAN: Yes.

MR. FITZGERALD: Yeah. Petro-Canada and –

MR. KEAN: Yes.

MR. FITZGERALD: – whatnot. Yeah, I'm not disputing that.

In 1997, when you worked for Newfoundland Power as a summer student, generally speaking, what was your job?

MR. KEAN: I was doing efficiency testing on hydro turbines.

MR. FITZGERALD: Okay.

MR. KEAN: And inspections on turbines.

MR. FITZGERALD: That experience had nothing to do with megaprojects or construction or anything like that?

MR. KEAN: It had a lot to do with the actual dynamics of the turbines itself and the consideration for retrofitting.

MR. FITZGERALD: Nothing for construction.

MR. KEAN: Yes, it actually did. Because –

MR. FITZGERALD: As a summer student in 1997?

MR. KEAN: The relevance of the material itself from the perspective of the assembly of a turbine-generating unit.

MR. FITZGERALD: So – and that was 1997. When did you start at Nalcor?

MR. KEAN: I started in 2007.

MR. FITZGERALD: Ten years later.

Did you do any type of courses or training in the interim 10 years on hydroelectricity?

MR. KEAN: Yes, I did.

MR. FITZGERALD: When – where to?

MR. KEAN: I did courses in fluid mechanics and I was actually preparing to do my masters in fluid mechanics at Memorial.

MR. FITZGERALD: Okay. And you didn't finish the masters?

MR. KEAN: I didn't commence it.

MR. FITZGERALD: Because you started working at Nalcor?

MR. KEAN: But I did do quite a bit of work in the area of large rotating equipment while at Petro-Canada.

MR. FITZGERALD: Okay.

Those are all of my questions.

Thank you very much.

MR. KEAN: You're very welcome.

THE COMMISSIONER: Robert Thompson.

MR. COFFEY: Good day, Mr. Kean.

My name is Bernard Coffey, I represent Robert Thompson.

MR. KEAN: Good morning, Mr. Coffey.

MR. COFFEY: So Mr. Kean, just – I'm gonna try and – because number – because of the nature of an Inquiry like this, numbers get thrown around. Some people implicitly understand or based upon their background understand what they mean, or the significance or non-significance of them; others don't. We have heard a number of times about percentages of engineering (inaudible). You'd be aware of that?

MR. KEAN: Yes.

MR. COFFEY: At DG2, you know, somewhere between five to 10, depending on who you listen to. At DG3 – and I'm gonna explore that a bit more – a higher percentage. How is the percentage of engineering used in that context quantified?

MR. KEAN: How is the percentage of engineering –

MR. COFFEY: Yes.

MR. KEAN: – quantified? It would be –

MR. COFFEY: Calculated, yeah.

MR. KEAN: It would be quantified by the number of – planned number of engineering deliverables to be produced, that could be design documents, drawings and so on, which have an estimated effort to produce those. And then you would look at how many of those are actually produced.

MR. COFFEY: So if I could stop you there. So is it a percentage of the documents based upon the number of documents?

MR. KEAN: No, it would be driven by the effort to create –

MR. COFFEY: So –

MR. KEAN: – the accumulative effort to create.

MR. COFFEY: So the accumulative effort in this context would be the number of person-hours required –

MR. KEAN: Yes.

MR. COFFEY: – in total. Do I have that right?

MR. KEAN: Yes.

MR. COFFEY: So at some point, presumably early on – and I'll explore that with you – there is a determination made by someone as to how many person-hours of engineering-type work is gonna be required to arrive at a DG2, in one context, and a DG3 estimate at another. Correct?

MR. KEAN: Yes.

MR. COFFEY: Okay.

So you were there for DG2 and 3, so I'm gonna ask you about DG2. Who did the estimate of the number of person-hours of engineering-type work required to produce the DG2 estimate, and when was it done?

MR. KEAN: The DG2 estimate is based on feasibility-level engineering.

MR. COFFEY: Okay.

MR. KEAN: So in the context of that, it's based upon a defined list of feasibility studies, engineering philosophies, and the like, that

would be produced in order to under – design the premise plan itself. So those – that would be quantified. I think at DG2 it was quantified from a number of deliverables versus person-hours.

MR. COFFEY: Okay, so only –

MR. KEAN: Of course it's only –

MR. COFFEY: Okay, go ahead.

MR. KEAN: Only at the point of DG3 when SNC-Lavalin were mobilized as an EPCM consultant that there was a lot of focus on the total engineering deliverables and the associated hours to produce those.

MR. COFFEY: Okay.

So if I go back to DG2, we have heard a number of times references to 5 to 10 per cent of the engineering had been done. Now – and this is before, presumably, November 18, 2010. Up to that day, 5 to 10 per cent of the engineering had been done.

Where – do you know where that 5 to 10 per cent estimate came from and what it was based on exactly? Who did the calculation and where can I find it?

MR. KEAN: I can't recollect to be honest.

MR. COFFEY: Would it exist?

MR. KEAN: I would expect that it would. Yes.

MR. COFFEY: Okay, so we should be – the Commission, through its counsel, should be able to – through Nalcor – track back and identify some document or document somewhere that arrive at the final result answer 8 per cent, you know, 6 per cent, 5 per cent, whatever.

MR. KEAN: Yeah.

MR. COFFEY: Or some series of them. There should be those, okay?

MR. KEAN: I would think so.

MR. COFFEY: Okay, I'm just saying – I'm not suggesting there's not, I'm just asking you if

there is? And, if so, is your understanding that there is?

MR. KEAN: I would think that there is. I don't know the pure nature at this point from memory, but I would think that there is.

MR. COFFEY: Okay.

MR. KEAN: And my – may – I just –

MR. COFFEY: Sure.

MR. KEAN: – want to add one further point to that, is that when one references engineering, it's meant to be a collection of not only just pure engineering deliverables –

MR. COFFEY: Oh yes, thank you for reminding me of that because it's engineering, engineering technicians –

MR. KEAN: Planning deliverables, plans, strategies, you know, could be labour relations, you know. That overall encompasses all that.

MR. COFFEY: It's not just people with the designation P. Eng. after their name.

MR. KEAN: That's correct.

MR. COFFEY: But within your world there'd be – if not a precise definition, there'd be kind of a general consensus as to what fell into the –

MR. KEAN: (Inaudible.)

MR. COFFEY: – engineering work.

MR. KEAN: Yeah.

MR. COFFEY: Okay.

And, of course, in that world you're dealing with the world of – the physical world, as in, you know, well, mechanical engineers, civil engineers, electrical engineers, people who actually – you can touch, ultimately, the work product.

MR. KEAN: Hmm.

MR. COFFEY: Steel, concrete.

MR. KEAN: Not necessarily.

MR. COFFEY: Okay. Because there's system engineers too, system engineering and so on. I understand that.

MR. KEAN: And not all engineers – not all engineering deliverables – or what we put in that classification of engineering deliverables are physical things that one would – drawings and plans that would aid the physical construction. They may be fundamental premise-level documents, strategies, philosophies and so on that –

MR. COFFEY: Mm-hmm.

MR. KEAN: – provide the overall guidance of how the detailed engineering is undertaken.

MR. COFFEY: And I appreciate that and they're not all about line drawings. I understand that. But they would be –for example, I'm going to suggest to you what you're talking about there is things like how or the best way to package the contract or contracts.

MR. KEAN: That's correct.

MR. COFFEY: So – now, if we go in relation to the same question about the percentage of engineering done to the DG2 stage – I'm sorry, the DG3 stage, okay? As best I can tell, and correct me if I'm – if you think I'm wrong, the DG3 estimate depends on where you peg it in time. For example – and how you quantify it – Mr. Lemay has told us that he produced a deliverable on behalf of SNC under his direction December 15, 2011. Remember that?

MR. KEAN: Yes.

MR. COFFEY: Was that – was there a cost associated with that, an estimate – a cost estimate?

MR. KEAN: For that portion of the work, yes.

MR. COFFEY: Yes. And that then subsequently, as Ms. O'Brien took you through this morning, there are documents there showing that, you know, that changed afterward, and it was kept track of, the changes. Correct?

MR. KEAN: Correct.

MR. COFFEY: Throughout – as we get into 2012?

MR. KEAN: Yes.

MR. COFFEY: The basis of estimate for the DG3, where would you peg that in time?

MR. KEAN: The end of April 2012.

MR. COFFEY: And would there actually be a spreadsheet kind of capturing that at that moment in time?

MR. KEAN: The basis of estimate speaks to that.

MR. COFFEY: Yes – or no, and there were – because the document we've looked at has – and Ms. O'Brien took you through that this morning. There's one basis of estimate and it's got a whole column dealing with changes –

MR. KEAN: Yeah.

MR. COFFEY: – after a particular point in time.

MR. KEAN: That wasn't the base of estimate. That was a general control sheet. The basis of estimate is –

MR. COFFEY: Okay. I apologize, yes.

MR. KEAN: – the 315-page –

MR. COFFEY: Yes, okay.

MR. KEAN: – report.

MR. COFFEY: So the basis of estimate then, you're talking about of course, yes, it's a longer document and it has the – it was issued on a particular point in time?

MR. KEAN: Yes, it was.

MS. O'BRIEN: It's P-00094.

MR. COFFEY: Oh, thank you, Ms. O'Brien. If I could bring it up, please, P-00094.

THE COMMISSIONER: Tab 36.

MR. COFFEY: I apologize, Commissioner. I got to get used to this.

If you could just scroll down a little bit. Stop right there, thank you.

So if we look at the cover page – and then go up a little bit, please? Okay, so DG3 Basis of Estimate. And go down again.

Thank you, Madam Clerk.

We have here B1, version B1, 3 December, 2012, Issued for Use/Implementation. And then B2, 22 May, 2013, Re-Issued for Use. So you're telling us this – your memory – that although this was only issued on 3 December, 2012, that you would have pegged the basis of estimate actually being sort of in its final form in late April of 2012?

MR. KEAN: That's not the question you asked me.

MR. COFFEY: Okay, oh (inaudible) well –

MR. KEAN: You were asking about the status of engineering.

MR. COFFEY: Okay. Oh, okay, status of engineering for the basis of estimate.

MR. KEAN: That's correct.

MR. COFFEY: Okay. Okay, I – that wasn't what I meant to convey, but thanks for clarifying that.

Okay, so the degree of engineering that went into what we're looking at here on the screen and was issued – well, this is not the B1 version, but the B1 version of this, 3 December, 2012, the costs in that basis of estimate are based on engineering as it existed in late April of 2012? That's your –?

MR. KEAN: Yes.

MR. COFFEY: Okay. And –

MR. KEAN: Which is different than the quoted degree of engineering at DG3 because of course there's a lot more engineering –

MR. COFFEY: (Inaudible.)

MR. KEAN: – than what went into the estimate.

MR. COFFEY: And that's where I'm going, okay? Thank you.

Do you know how much engineering had been done as of late April of 2012 as a percentage?

MR. KEAN: All the premise-level documents had been done. I don't know the per cent, but final quantities had been achieved. It was more after that, more detailing-type work.

And particularly Muskrat Falls generation was – from a generation facility was the most advanced of all the components. Whereas the DC converter side, which was going to be done by the EPC contractor, would have been the most – the lesser because we were working through system studies and so on.

MR. COFFEY: Now, you just a moment ago referred to the engineering estimate, or percentage of engineering done – estimates for quantities that were referred to publicly, I think.

In relation to DG3, what are you thinking of there? Are you thinking of the 40 per cent?

MR. KEAN: It's probably noted in the decision support package what that is. It was much – I thought over 50 per cent.

MR. COFFEY: 50 per cent, okay.

And that would have been as of what time, do you know?

MR. KEAN: In the fall period. Fall of 2012 period.

MR. COFFEY: Okay.

So sometime in the fall someone would have gone and looked at some database somewhere and done a calculation – an arithmetic calculation to arrive at a 50 or whatever percentage it was.

MR. KEAN: Those are normally – that’s done monthly or bi-weekly.

MR. COFFEY: Who does that?

MR. KEAN: Project controls teams.

MR. COFFEY: So there’d be a kind of running set of documents showing that over time?

MR. KEAN: Oh, yes.

MR. COFFEY: Okay.

And so we’d be able to if somebody wanted to look and see if you’d be able to track that throughout 2012?

MR. KEAN: Yes.

MR. COFFEY: And for each aspect of the project?

MR. KEAN: Yes.

MR. COFFEY: Okay.

So then in preparing the basis of estimate that was issued 3 December, 2012 as B1 – the B1 version of it – did you think to check as to what percentage of engineering was done in late-April, 2012?

What am I – I’m initialing, I’m responsible – your name is on this, well, presumably it was on the B1 one as well. This basis of estimate is going out over your signature. You’re a professional engineer, correct?

MR. KEAN: Yes.

MR. COFFEY: Is Mr. Harrington a professional engineer?

MR. KEAN: I believe so.

MR. COFFEY: Okay.

So you’re issuing it, you know an awful lot is riding on this. The basis of estimate is an important document, crucial document you say.

Correct?

MR. KEAN: Yes.

MR. COFFEY: Did you think to check as to how much engineering was done to support what I am issuing in 3 December, 2012?

MR. KEAN: I looked at the status of engineering every second week.

MR. COFFEY: Oh?

MR. KEAN: I knew the status of engineering throughout this.

MR. COFFEY: I appreciate it. I’m asking you –

MR. KEAN: Yes, the answer would be yes.

MR. COFFEY: Do you know what it was?

MR. KEAN: It would have been in that – towards that 50 per cent mark.

MR. COFFEY: In April of 2012, it was –?

MR. KEAN: No, no. In the fall of 2012.

MR. COFFEY: I understand that. What I’m asking you is: this is based, you told us, on the engineering done as of late April 2012. This document – or the B1 version of it.

MR. KEAN: Yes.

MR. COFFEY: See what I’m getting at here? This document was based on the engineering done, you’ve told me, as of late-April, 2012 was used to produce the B1 version.

MR. KEAN: Yes.

MR. COFFEY: What percentage of engineering had been done as of late April 2012?

MR. KEAN: I can’t recollect.

MR. COFFEY: Is it possible – but someone, you’re suggesting, would be able to locate that and provide that to Commission counsel, presumably someone at Nalcor?

MR. KEAN: I assume, yeah.

MR. COFFEY: Okay, thank you.

And as you started to tell me earlier, I believe, throughout 2012 there was an awful lot of engineering work being done, wasn't there?

MR. KEAN: A lot of – some of the detail.

MR. COFFEY: Yeah.

MR. KEAN: The premise level engineering had been done. So, for instance, I would say that the 3D model had been complete, with all the quantities of concrete, the lifts of concrete. That was all complete to build into the schedule before the estimate.

What some of the detail was: where are the penetrations in the concrete for some of the cable routing, some of the piping and so on? That's the type – next level of detail that went into – which didn't fundamentally change the quantities that an estimator was using; are more design details.

MR. COFFEY: Now, you have been asked by other counsel about – of the basis of the cost estimate, the preparation of the estimates by your group and you were primarily responsible, you've indicated –

MR. KEAN: Yes.

MR. COFFEY: – for the base estimate. And you've indicated, I believe, that the final work product, you were satisfied with.

MR. KEAN: Yes.

MR. COFFEY: And that it would be the B1 version of P-00094.

MR. KEAN: That is part of the estimate.

MR. COFFEY: Yes.

MR. KEAN: It's only one of several volumes.

MR. COFFEY: And my point being that – and just so the Commission is clear – as an individual, as a professional engineer, you were satisfied to issue it; you thought it was realistic?

MR. KEAN: So, I anchor back to the project – our Class 3 estimate – it met the requirements of a Class 3 estimate, so from that perspective I felt comfortable. That's our objective and that's what I felt comfortable with.

MR. COFFEY: And so – and just while we're on that – so whatever the total figure was – now do you recall off the top of your head what the total figure was?

MR. KEAN: 6.2 billion, I guess.

MR. COFFEY: 6.2 –

MR. KEAN: But that's not the base estimate, that's the all-in.

MR. COFFEY: The all-in, right. But the base estimate that you had prepared, do you recall what that was?

MR. KEAN: 5472.

MR. COFFEY: Okay good, 5,472 billion.

And is it easier to describe for me what it included or did not include?

MR. KEAN: That number excludes escalation.

MR. COFFEY: Okay.

MR. KEAN: It excludes estimate contingency. It excludes any management reserves or financing cost.

MR. COFFEY: Yeah.

MR. KEAN: Foreign exchange. Carrying costs if the project were delayed.

MR. COFFEY: Yeah.

MR. KEAN: Some of those things we went through yesterday, I think Ms. O'Brien –

MR. COFFEY: Okay.

MR. KEAN: – asked.

MR. COFFEY: Yes, thank you.

Now – and you refer to that as being within a certain class, and the class was 5.472 billion – class what?

MR. KEAN: It's a class – we were targeting a Class 3 estimate.

MR. COFFEY: And the percentages were?

MR. KEAN: Pardon me?

MR. COFFEY: The percentages? The range? Because class is within a certain range so what was the Class 3 estimate?

MR. KEAN: Yeah. Are you asking me what ours finally ended up being or what the requirements are?

MR. COFFEY: The requirements are.

MR. KEAN: I think it's minus 15 to plus 20 after the application of contingency.

MR. COFFEY: So you would add to the 5.472 billion the estimate contingency, which you've just told me was not included in the 5.472 – you'd add that and get another figure, correct?

MR. KEAN: Okay.

MR. COFFEY: And then having done that, the estimate – the suggested accuracy for the estimate then is it should – the final cost should come in somewhere between – in relation to this part of it – should come in somewhere between 15 per cent lower than that number and 20 per cent higher.

MR. KEAN: That's not what that indicates. That indicates that base estimate –

MR. COFFEY: Yes.

MR. KEAN: – in consideration of tactical risk, should come in within that accuracy. And that's measured from a P50 perspective.

MR. COFFEY: While I'm at it, what would happen if it was measured from a P75 or a P90 perspective?

MR. KEAN: The – all the estimate accuracy standards are always measured from an expected or P50, so I –

MR. COFFEY: Oh, okay, the classes?

MR. KEAN: Yes.

MR. COFFEY: You've explained that – in this aspect of your professional world – that, you know, there are different views of different experts. For example, you know, Mr. Westney, Mr. Hollmann, in approaches to dealing with risk or risk assessment.

MR. KEAN: No, I don't necessarily think the approach is; it's more sometimes they have a different 'lexonomy' or taxonomy used; risk taxonomy.

MR. COFFEY: Okay, and what is that?

MR. KEAN: It could be aspect of what would fit into a category of project-specific versus systemic risk, or what might fit in to the aspect of a tactical versus strategic.

MR. COFFEY: Okay. And that's a good point.

Do you recall ever explaining that? That there are different approaches to your management?

MR. KEAN: No, I don't – I don't think – so it's not fundamental approaches in the way you actually manage risk; there's no –

MR. COFFEY: Oh, no –

MR. KEAN: – or actually model risk. There's various recommended practices that exist.

MR. COFFEY: (Inaudible.)

MR. KEAN: And they're all centred around the aspect of risk events, in understanding what the impact of that event could be.

MR. COFFEY: So what's the difference between Mr. Hollmann's approach and Mr. Westney's approach? Give me a concrete example, please.

MR. KEAN: I don't know if there's – if I can point anything – one thing out. Mr. Hollmann

has some modelling that he does regarding systemic risk in projects and some practises therein. Mr. Westney and his practitioners have some similar approaches in their own – I think it's called PRIMS modelling techniques.

So I guess in that regard, different ways of expressing uncertainty. But at the end of the day, both are aligned in a context of – and uncertainty your risk event is – exists we must do our best to understand what exposure that risk event may be on the project's objectives.

MR. COFFEY: So you've explained how Mr. Westney ended up being retained by Nalcor, back in the early days of the Lower Churchill Project. Remember that?

MR. KEAN: Yes.

MR. COFFEY: And he's carried on, I'm gonna suggest, up until the time you departed from Nalcor, he was still involved – his company was still involved, one way or the other, at times.

MR. KEAN: At times, yes.

MR. COFFEY: Mr. Hollmann provided the same sort of service or services, correct?

MR. KEAN: Yes.

MR. COFFEY: Was any consideration given to using both of them?

MR. KEAN: We did use both of them.

MR. COFFEY: No I – for the same thing, to do the same thing. Parallel to each other.

MR. KEAN: Not for the overall risk assessment, no.

MR. COFFEY: That's what I was – that's what I'm asking, about the overall risk assessment.

Again, so the Commissioner understands, what kind of order of magnitude of money are we talking about to do such a risk assessment, for example, the DG3? Overall risk assessment. I mean, Westney did it, so you have some idea of what they were paid. How much were they paid?

MR. KEAN: I mean, I made it in estimate yesterday of I think 150 to 200 but –

MR. COFFEY: \$150,000 to \$200,000?

MR. KEAN: Yes.

MR. COFFEY: Okay.

MR. KEAN: That's for just the final modelling workshops and follow-up presentations and so on. Not, you know – it's a multi-year program where you're engaged with a client to understand on a part-time basis, I guess, what that client's risk profile is and the project risk itself and providing some guidance and feedback.

MR. COFFEY: Okay, so – but the DG3 part that Westney's company did for Nalcor, you would estimate the cost associated with that part of it between \$150,000 to \$200,000. Am I correct?

MR. KEAN: Yes.

MR. COFFEY: So, do you have any idea what it might have cost to – Nalcor to have hired Mr. Hollmann to do the same thing? Considering what was at stake? I'm just – this is why I'm asking you the question.

MR. KEAN: Well – no, I don't know that. But Westney had great hydro data available.

MR. COFFEY: So, it didn't occur to you to also utilize Mr. Hollmann.

MR. KEAN: We leveraged a number of consultants for various support –

MR. COFFEY: I ask you, did it occur to you to utilize Mr. Hollmann for an overall risk assessment, yes or no?

MR. KEAN: No.

MR. COFFEY: Thank you.

Now, you've been asked about that – I think it's P-00957, please?

THE COMMISSIONER: 00957.

MR. COFFEY: Oh, yes, I'll get that ...

THE COMMISSIONER: Tab 29.

MR. COFFEY: Tab 29.

THE COMMISSIONER: Yes.

MR. COFFEY: Now, if we could go toward the bottom of page 1, please.

This is an email of April 9, 2012 at 10:46 a.m. from Mr. Hollmann to yourself. And he writes: "Please find attached my Draft report of the LCP Gate 3 estimate review including findings and recommendations. After receiving comments (or after a possible follow-up review and/or metrics validation) I will issue a Final." And the F in the final is capitalized F.

Best Regards, John Hollmann.

When was Mr. Hollmann retained to do this report?

MR. KEAN: It would have been, I think, early winter of 2012, for that particular report. He had been retained over the last couple years on a couple bureaucratic assignments.

MR. COFFEY: But in relation to this report, is there a scope of work for that?

MR. KEAN: Yes.

MR. COFFEY: And do we know where that is? I – you know, I'm not – I just raise it. But how was it that you came to utilizing Mr. Hollmann for this?

MR. KEAN: How – perhaps –

MR. COFFEY: Why Hollmann?

MR. KEAN: I guess you have – you know, in looking at consultants and firms that we were utilizing in various supports, Mr. Hollmann had been engaged on a couple of prior engagements for the escalation work –

MR. COFFEY: Mm-hmm.

MR. KEAN: – that he had provided some guidance where he had drafted and was lead

author in some recommended practices for AACE. And it probably came followed up from a conversation I had had maybe with another firm about their utilization of him. And, then, I gave him a call I would expect and –

MR. COFFEY: Yeah.

MR. KEAN: – talked about the – you know, could he do such a review?

MR. COFFEY: And – but this review was not of escalation itself?

MR. KEAN: No, this – as I indicated yesterday I was using this as a bit of a validation or peer review on the process of putting the estimate together.

MR. COFFEY: Okay, so how much did it cost?

MR. KEAN: I don't recollect. It was a week's effort, so probably in the 30 to 40 K.

MR. COFFEY: \$30,000 to \$40,000? Would there be a purchase order in existence for it?

MR. KEAN: Yes.

MR. COFFEY: Who had authority to sign off on that purchase order?

MR. KEAN: It would've been the supply chain and the – whoever had financial authority of that value, I guess.

MR. COFFEY: Did you?

MR. KEAN: I don't know if I had the financial authority at that point in time.

MR. COFFEY: So who then – if it – in that line of reporting that you've been taken to, you know, you to Mr. Power, Mr. Power to Mr. Harrington, Mr. Harrington to Mr. Martin, of that – I'm sorry, I think I skipped Mr. Bennett in between Mr. Harrington and Mr. Martin. But in that line, who had the authority –

MR. KEAN: Well, if I didn't –

MR. COFFEY: If you didn't –

MR. KEAN: – it would've been Mr. Power.

MR. COFFEY: Mr. Power.

And within Nalcor, in relation to this type of contract, who was keeping track of where the deliverable on the contract was?

MR. KEAN: The scope owner with support from supply chain.

MR. COFFEY: Was it you?

MR. KEAN: Yes.

MR. COFFEY: How about anybody above you?

MR. KEAN: I think I'm – I would've made people aware that this review was being undertaken. Mr. Hollmann actually was in our office for a period of time.

MR. COFFEY: Yes, I was going to ask you about that. So Mr. Hollmann came in.

MR. KEAN: Yes.

MR. COFFEY: How long was he in St. John's in your offices?

MR. KEAN: I think, for this particular review, he was there for a week.

MR. COFFEY: And he would've had access to a certain amount of documentation?

MR. KEAN: Yes.

MR. COFFEY: Kind of, source documents, where he – where he wanted to see them, correct?

MR. KEAN: Yes, his interviews – his report speaks of that.

MR. COFFEY: So John Hollmann, who – and I don't want to overstate it or trivialize it, but in that world John Hollmann is – I'll use the phrase that immediately comes to mind – is a rock star, isn't he? If there are rock stars in that world – him, Morell, Westney: they're it.

MR. KEAN: They would be peers, I guess, yeah.

MR. COFFEY: Peers, yes. And he –

MR. KEAN: I think that's where –

MR. COFFEY: And they're playing not in the Canadian – on the Canadian stage, they're playing in the American stage, too, aren't they?

MR. KEAN: They're all in the international stage, yes.

MR. COFFEY: Yes, so John Hollmann shows up for a week. Presumably, people on your staff, others in the office, would've known why he was there. Correct?

MR. KEAN: Yes.

MR. COFFEY: He's being paid probably somewhere in the vicinity of \$30,000 to \$40,000. And I haven't had you quantify whether that's American or Canadian, but would that be American money?

MR. KEAN: Oh, no, I don't recollect.

MR. COFFEY: You don't know. Okay.

So, anyway, he's being, you know, paid in the vicinity of that amount of money to provide a report. Do you recall when it was he was in St. John's?

MR. KEAN: I don't recall specifically, but it would've been before the draft report was received, so it would've been in that March period, I think.

MR. COFFEY: Okay.

So he comes in to St. John's for a week, does what he has to do. Presumably, reviews documents, data, talks to people, presumably. Am I correct? Would I be correct in that?

MR. KEAN: Yes (inaudible).

MR. COFFEY: And then goes away, and then in early April – he's pretty prompt – he provides a report. Correct?

MR. KEAN: Yes.

MR. COFFEY: And it's a draft report, and he says he'll issue a final after receiving comments and/or a possible follow-up review and/or metrics validation.

Now, did you ever – after you received that email on the morning of April 9, 2012, at – well, you would've received it after 10:46 a.m. Did you ever contact Mr. Hollmann to respond to this?

MR. KEAN: Yes.

MR. COFFEY: What did you tell him?

MR. KEAN: I don't recall.

MR. COFFEY: When –

MR. KEAN: No, I don't recall.

MR. COFFEY: Okay.

MR. KEAN: I guess my emails would've communicated that or ...

MR. COFFEY: Emails – well, I'll ask Commission counsel if they, ultimately, can find them. I'd like to see them. I'm not suggesting there are.

MS. O'BRIEN: My knowledge to date is we haven't found any, but I'll confirm that over the lunch break.

MR. COFFEY: Yeah.

And, I believe, in Mr. Hollmann's interview at one point, perhaps addresses that too, but ...

So what did you tell Mr. Hollmann?

MR. KEAN: I don't recall specifically what I told him.

MR. COFFEY: If not, 'unspecifically.' Mr. Kean, what did you tell Mr. Hollmann?

MR. KEAN: I indicated yesterday that Mr. Hollmann –

MR. COFFEY: I asked you what you told Mr. Hollmann.

MR. HUTCHINGS: I think the witness is trying to answer the question.

MR. COFFEY: No, he said yesterday, I'm asking him now – right now.

MR. HUTCHINGS: Well, I think –

MR. COFFEY: I don't care – Ms. – I don't care about yesterday, I care about now. What did you tell Mr. Hollmann?

THE COMMISSIONER: So just a minute, just a minute.

MR. COFFEY: I'm sorry.

THE COMMISSIONER: First of all, when people are objecting, don't talk to each other. You look to me and you talk to me, right?

MR. COFFEY: Sure. Sure.

THE COMMISSIONER: So I'll hear Mr. Hutchings first and then I'll hear from you.

Ms. Hutchings.

MS. HUTCHINGS: Yes, the witness is trying to answer the question. While he said the word "yesterday," it may relate to evidence that he gave yesterday that could answer this question.

THE COMMISSIONER: Right.

MS. HUTCHINGS: So I think it's unfair for counsel to interrupt the witness when he's trying to answer a question before he even got any more than just one or two words out.

THE COMMISSIONER: Right.

MS. HUTCHINGS: That's all I'm saying.

THE COMMISSIONER: Okay.

MS. HUTCHINGS: If he can let him proceed.

THE COMMISSIONER: Go ahead and answer him.

MR. COFFEY: Thank you.

Go ahead.

MR. KEAN: What I indicated yesterday, which I recollect from this, is that upon receiving the report, John had made a lot of observations for areas outside of his scope of review. We were – for instance, he had made some observations regarding the risk analysis. We had not undertaken our DG3 risk analysis so I thought it was very imprudent for him to provide observations regarding the risk analysis when such risk analysis was: one, had not been undertaken; two, was outside of his scope of review.

So that with other – you know, with that he also made certain comments about the escalation not being finalized. Well, we were still in the process of finalizing that. So I thought, you know, from my perspective, he had reached out and expanded his purview beyond what was the scope of his work, and made observations that I didn't think were prudent as he didn't have access to all the documentation and so on in support of those areas.

MR. COFFEY: Okay. I still don't hear an answer to my question. What did you tell Mr. Hollmann after you got that email?

MR. KEAN: I suspect I would have told him that.

MR. COFFEY: You suspect you told him what you just said?

MR. KEAN: Yes.

MR. COFFEY: What was his reaction?

MR. KEAN: I don't recall. It's a number of years.

MR. COFFEY: You didn't tell him in writing?

MR. KEAN: I don't think so.

MR. COFFEY: Did you pay him for his work?

MR. KEAN: We paid him for the draft deliverable. It was reimbursable, so up to that point.

MR. COFFEY: So you paid him \$30,000 to \$40,000 for a draft report that you thought went

outside the bounds of the scope of work he was requested to do?

MR. KEAN: We paid him for services rendered.

MR. COFFEY: Now, these services rendered – if we could – these services rendered – well, you received them on April 9, 2012, at – well, presumably – as I said, sometime after 10:46 a.m. We go to the top of the page please, Madam Clerk?

In just over an hour later, 10:53 a.m., you sent his – Mr. Hollmann's – draft report to Mr. Turpin with the message for – "FYI" – for your information – "Do not circulate or leave lying around."

Now, this is electronic. He – Mr. Hollmann didn't deliver you a paper copy. He sent it electronically, right?

MR. KEAN: He sent electronic copies.

MR. COFFEY: Yes. So "Do not circulate or leave lying around" would mean lying around, presumably, paper-copy lying around?

MR. KEAN: Correct.

MR. COFFEY: Do not circulate would mean either circulate a paper copy or an electronic copy?

MR. KEAN: Yes.

MR. COFFEY: Okay. Now, can you explain why you were concerned that, you know, others might – (inaudible) if you were concerned that others might see it, other than yourself and Mr. Turpin, why did you send it to Mr. Turpin?

MR. KEAN: Because Mr. Turpin and myself were two of John's primary interface points during the review that he was undertaking.

MR. COFFEY: What was Mr. Turpin's reaction to Mr. Hollmann's report?

MR. KEAN: I don't recall.

MR. COFFEY: He did have one though, didn't he? You must have discussed it.

MR. KEAN: I don't recall.

MR. COFFEY: You don't recall whether you ever discussed Mr. Hollmann's report?

MR. KEAN: It's a long time ago.

MR. COFFEY: Okay.

Now, you sent it to Mr. Turpin at Nalcor Energy dot com. And you sent it from your own Nalcor Energy dot com email. Where was this then-draft report stored electronically? It's obviously stored as an attachment on your – both of your email accounts at Nalcor Energy. Do you know where it was stored otherwise?

MR. KEAN: It would have been stored in the project working folders for all the estimate material.

MR. COFFEY: So as an – the attachment would have been taken and put in that folder?

MR. KEAN: Yeah.

MR. COFFEY: Do you recall who did that?

MR. KEAN: Might've been me; might've been Mark; might've been a student. I don't know.

MR. COFFEY: And – I'm sorry, and was stored in – what did you call it? The name –

MR. KEAN: Working files for development of the estimate.

MR. COFFEY: Who has access to the working files? Those working files? At that time, who had access to them?

MR. KEAN: The project controls team.

MR. COFFEY: Who is that?

MR. KEAN: Well, there's an assortment of individuals within the team that reported to me, as well as some people that had access to all drives and network drives regardless of what organization they were into. So ...

MR. COFFEY: So that – and again, just so the Commissioner understands – the email – the draft report shows up. I suggest you reviewed it

before you sent it to Mr. Turpin. Otherwise you can – hardly likely to have said not circulate it. Correct?

MR. KEAN: Not necessarily.

MR. COFFEY: Okay, so okay, fine. So you don't – you can't even tell the Commissioner whether you – when you reviewed it?

MR. KEAN: Well, it's over eight – over six years ago, so I just can't remember.

MR. COFFEY: Okay. You sent it on to Mr. Turpin with the message you did. Somehow it gets stored in a work folder, the actual report, to which others have access.

MR. KEAN: Yes.

MR. COFFEY: Would the others who had access, would they include people like Mr. Harrington?

MR. KEAN: I don't know. I don't know if he had access to that network drive.

MR. COFFEY: Did anyone ever ask you to see a copy of Mr. Hollmann's report?

MR. KEAN: Oh, I'm – as a – I'm sure it was reviewed with my management team, yes, and talked about.

MR. COFFEY: So wait now, your management is your subordinates, I take it?

MR. KEAN: No, my superiors.

MR. COFFEY: Your superiors? Oh, okay. So who is that then? Name them please.

MR. KEAN: I guess it would be – probably go back to that point in time in the org chart. You know –

MR. COFFEY: So it would be – would Mr. Power be involved?

MR. KEAN: Yes.

MR. COFFEY: Mr. Harrington?

MR. KEAN: Yes.

MR. COFFEY: Mr. Bennett?

MR. KEAN: No.

MR. COFFEY: Okay, so it will go up as far – Mr. Harrington, Mr. Power and yourself.

MR. KEAN: There were others, lateral people in the organization.

MR. COFFEY: Yes, further over. So you would have reviewed Mr. Hollmann's report with them – be giving them copies presumably, made it available –

MR. KEAN: Not necessarily, no. They would have been aware of the report in general that the report had been done. They would have met Mr. Hollmann. They would have been seeing – you know, made aware of the general findings, but the specifics of it, I can't recall what – to what level of detail or discussion did occur on that or –

MR. COFFEY: Well, why wouldn't you just distribute it, then, to them?

MR. KEAN: Maybe I did. I just don't remember.

MR. COFFEY: Would there be an electronic record if you did?

MR. KEAN: Not necessarily. It may have been taken in hard copy to a meeting as you would delivering a presentation.

MR. COFFEY: But other than the management team, who may or may not have received a copy of it – electronic or paper – did anyone else ever ask you for a copy of Mr. Hollmann's report? Like, anybody above Mr. Harrington's pay grade?

MR. KEAN: Not that I recall.

MR. COFFEY: So Mr. Bennett never asked you for it, nor Mr. Martin?

MR. KEAN: I don't recall any specific request.

MR. COFFEY: Okay.

Now, you were asked about – by Ms. O'Brien yesterday – about the request, I think, by Mr. Bradbury to do some alignment of the DG2, you know, risk report with what was in the CE-52 filing at the PUB – recall that?

MR. KEAN: Yes.

MR. COFFEY: And so Mr. Bradbury is whom?

MR. KEAN: He's a former member of – former employee of Nalcor – and I'm not exactly certain of his role. At that point in time, it would've been general manager of finance or controller for LCP – one of those.

MR. COFFEY: Okay – roles. So he asked you to do what? What did Mr. Bradbury actually ask you to do?

MR. KEAN: I don't recall all of the specifics. I do recall that there was requests to ensure preparation for a data room for a – for the indicative credit ratings. And as a result, there are a number of documents that need to be placed in the data room, and those documents were being reviewed by – I recall, the financial advisors. So –

MR. COFFEY: Well – I'm sorry – who? Do you recall?

MR. KEAN: PWSC [sp PwC, PricewaterhouseCoopers], I think.

MR. COFFEY: Okay.

MR. KEAN: And there may have been others. And of course, just doing quality checks on the documents, did we have the latest revision? And that was identified as an observation in the risk report.

MR. COFFEY: And the B1 version of the report –

MR. KEAN: Yes.

MR. COFFEY: – was not consistent with the observation in CE-52?

MR. KEAN: Correct.

MR. COFFEY: And the observation in CE-52 – and actually technically, it's CE-52 R – that observation was publicly available, wasn't it?

MR. KEAN: Yes.

MR. COFFEY: And the data room – could you explain to the Commissioner what the data room is?

MR. KEAN: As I was –

MR. COFFEY: As you understand it to be anyway.

MR. KEAN: As I understand, the data room is an electronic repository of documents that someone would have access to for viewing, or printing or reviewing documents.

MR. COFFEY: And you have to get certain clearance to do that, don't you?

MR. KEAN: I –

MR. COFFEY: Or authorization

MR. KEAN: Yes, of course –

MR. COFFEY: Certain levels of authorization.

MR. KEAN: – they're usually secure data rooms for certain –

MR. COFFEY: Okay.

MR. KEAN: – users to access.

MR. COFFEY: And so these, you understood – understanding from Mr. Bradbury was, was some (inaudible) or people outside of Nalcor were going to be accessing in this data room, your DG – your B1 version of the DG2 risk report and – well presumably – I don't know if they would have had access to CE-52 or CE-52R, but if they were a member of the public, they had access to CE-52R. And Mr. Bradbury was – communication was, was they are not consistent with each other – there's an inconsistency – and he asked you to remove the inconsistency.

MR. KEAN: He asked me to ensure they were consistent.

MR. COFFEY: Just remove – okay.

And you chose to go in one direction as opposed to the other. Correct?

MR. KEAN: I'm not sure I –

MR. COFFEY: Well let's put it this way – and we can bring 'em up on the screens – but you took out the reference to the UARB and Emera.

MR. KEAN: Yes, and replaced them with –

MR. COFFEY: To make them consistent.

MR. KEAN: – with the CE-52.

MR. COFFEY: Yes. So you had a choice. You could have done the reverse. I don't know how you changed CE-52, if you actually – well you could have issued a correction to it. But –

MR. KEAN: I wasn't the author of CE-52.

MR. COFFEY: No.

So did you understand from Mr. Bradbury that in bringing – in making them align with each other that you were being asked to change the risk report – DG2 risk report that you had prepared and issued – to accord with CE-52R? Is that your understanding?

MR. KEAN: Yes.

MR. COFFEY: Okay.

Do you know whether or not Mr. Hollmann's draft April 9, 2012 report ever ended up in the data room?

MR. KEAN: No, I have no idea what's in the data room.

MR. COFFEY: Okay. So the data room in this context would have been populated by the Mr. Bradburys of the world.

MR. KEAN: Finance team, yes (inaudible).

MR. COFFEY: Now in your CV – P-00884 please.

THE COMMISSIONER: 000884. Tab 2.

MR. COFFEY: I apologize, Mr. Commissioner.

Can you just scroll down please? (Inaudible) keep going, keep going. Yes, experience. You were taken to that with Westney's, 2017 to the present, and then Project Solutions Inc., St. John's, NL. Who were they?

MR. KEAN: That's a firm based in Newfoundland and Labrador, which I'm the, I guess, the principal of.

MR. COFFEY: Okay.

And between 2017 – 2007 and 2017, there are a number of different organizations that your firm did work for. The first of them is, "Emera Inc.: Development of corporate-wide H&S standards for the growing energy company." When did that work occur?

MR. KEAN: October 2017.

MR. COFFEY: Okay, so it was after you had the – okay. I wasn't – I just wanted to check that, thank you.

You'd been asked about these – a particular slide deck – in particular slide 12, in a particular slide deck. I believe it's P – the decks are, I think, located at P-00817 and 00818. Do you recall being asked about that?

MR. KEAN: Is that the slide deck for –?

MR. COFFEY: Yes. It's the slide deck – well, just bring it up, please. P-00817.

MR. KEAN: The MHI slide deck?

MR. COFFEY: Yes. And it'll have to be on your screen, because it's not listed here, I don't think.

Just keep going, please. Okay, thank you. Right there. Yeah.

And I believe this morning, in answering questions, you said that it's your recollection that it was in the deck that you presented to MHI during – or you showed MHI during your presentation – slide 12.

MR. KEAN: No, it wasn't this particular slide. It was a slide that talked about these three big strategic risks.

MR. COFFEY: Okay, it's the next one. I apologize. Yes.

(Inaudible) it's – actually, it's further down. It's page 14 of this ... yup.

That's the one?

MR. KEAN: Yes.

MR. COFFEY: Okay – "Beyond Estimate Contingency."

Did you give a copy of the deck, at the time, to MHI?

MR. KEAN: I don't recall paper copies were distributed. I didn't have any electronic communication with MHI during that period. That was all, I guess, coordinated through an individual.

MR. COFFEY: So you're meeting with the MHI personnel; you're being interviewed by them and giving a presentation to them. Correct?

MR. KEAN: Yes.

MR. COFFEY: That's the presentation you gave.

MR. KEAN: As I recall, yes.

MR. COFFEY: Isn't it common enough – well – you don't remember sending them an electronic version of it, 'cause you had no electronic communication with them at the time?

MR. KEAN: No.

MR. COFFEY: If you passed them a paper copy, presumably they'd still – they would have had it?

MR. KEAN: Presumably.

MR. COFFEY: Yeah.

If you didn't pass them a paper copy, and weren't providing it electronically to them, that

would suggest that they had no means of accessing it. Correct?

MR. KEAN: Sorry, can you repeat that?

MR. COFFEY: I said if you didn't give them a paper copy –

MR. KEAN: Yes.

MR. COFFEY: – and didn't send them an electronic copy, do you know how they might have gotten your version with slide 12?

MR. KEAN: Would have been presented on the screen, I guess, during –

MR. COFFEY: Okay, on the screen, in passing.

MR. KEAN: No, no. Deep discussions on the – these couple-day meetings that we had with these guys.

MR. COFFEY: Just scroll down a little bit, please?

Now, there is, in the – I believe in – if you go up to the beginning, please? Page 1?

This is Mr. Crawley delivering a message to Mr. Harrington on August 7, 2012. The message is: "Paul ... are you ok with this going to Charles? It is what we provided to MHI. We should also bring Gilbert into the loop. Brian."

Charles would be Charles Bown in this context. You can take that as a given. Do you know who Charles Bown is?

MR. KEAN: I've met Charles several times, yes.

MR. COFFEY: You understood Charles's – you would have understood Charles's role, generally, in terms of his – he was a pretty primary contact with Natural Resources – for Nalcor.

MR. KEAN: I knew he was the principal contact, but as to his role, I didn't know.

MR. COFFEY: Okay. Well, it's principal contact – well, role – whatever else it was, it was principal contact, correct?

MR. KEAN: Yes.

MR. COFFEY: I'm gonna ask you as – because you dealt with Mr. Harrington a fair amount – can you think of any reason why the deck as you created it, couldn't go to Mr. Bown with slide 12? Yourself, can you think of any reason why?

MR. KEAN: No.

MR. COFFEY: Can you think of any reason why there'd be any reluctance to send the deck to Charles, period?

MR. KEAN: No.

MR. COFFEY: When Westney was in doing its risk assessment – I believe for DG3 – and I believe that was May into June 2012?

MR. KEAN: Yes.

MR. COFFEY: Did you show Mr. Westney John Hollmann's April 9, 2012, report?

MR. KEAN: Mr. Westney wasn't part of that review.

MR. COFFEY: Okay, well the Westney people – if not Mr. Westney himself, in person, the Westney people, okay?

MR. KEAN: No, I don't recall showing that to them.

MR. COFFEY: Is there any reason you didn't?

MR. KEAN: No. It wasn't within the scope of our focus for that period of time.

MR. COFFEY: Well – now, Sir, it's been pointed out to you that – albeit without the introductory caveat in the sentence that you quoted in your Ottawa – for your Ottawa presentation, okay? That Mr. Hollmann was certainly – his opinion in terms of the base estimate was relied upon by you in doing your work?

MR. KEAN: I indicated that my – so not from a quantitative perspective, no.

MR. COFFEY: No. But from a qualitative?

MR. KEAN: From a qualitative consideration of inputs into a base estimate, yes.

MR. COFFEY: And you didn't think –

MR. KEAN: One of several considerations.

MR. COFFEY: Yes. You didn't think it worthwhile or valuable or useful to provide Mr. Hollmann's report – including that complimentary comment about the base estimate – to Westney's, who were doing your risk review?

MR. KEAN: No, because Westney was interviewing the – much more deeper into the estimate itself, meeting with the individual estimators.

MR. COFFEY: And how reliable – Mr. Hollmann had had a comment about how reliable he thought those estimators were, didn't he?

MR. KEAN: I don't recall –

MR. COFFEY: Well, didn't he? He said the base estimate looked good to him.

MR. KEAN: But in the context of reliability of estimators.

MR. COFFEY: Yes, well, an estimate is only good – as good as the people who are preparing it. And you're saying Westney's people were dealing with the estimators themselves, correct?

MR. KEAN: Not certain I follow you, sorry.

MR. COFFEY: Well, look, Westney's people are in being paid to conduct a risk assessment, and in the course of doing that, they're interviewing or talking to estimators, correct?

MR. KEAN: Estimators would have been engaged throughout, yes.

MR. COFFEY: Yes.

Hollmann had looked at the base estimate overall, the approach to it. At times, you've indicated it delved into, you know, particular things, whatever he wanted to, and he had come

to a conclusion, hadn't he, about that base estimate?

MR. KEAN: Sure.

MR. COFFEY: It was a positive conclusion from your perspective, correct?

MR. KEAN: There was some – generally, yes.

MR. COFFEY: Yes.

And you did not think – or it didn't occur to you to provide his report to Westney's people?

MR. KEAN: No.

MR. COFFEY: Okay.

Excuse me.

Thank you very much, Commissioner.

Thank you.

THE COMMISSIONER: Thank you.

MR. KEAN: You're welcome.

THE COMMISSIONER: All right, we'll take our noon break now. Next will be Todd Stanley and Terry Paddon, and we'll return at 2 o'clock.

CLERK: All rise.

Recess

CLERK: All rise.

This Commission of Inquiry is in session.

Please be seated.

THE COMMISSIONER: All right, Todd Stanley, Terry Paddon?

MS. VAN DRIEL: No questions, Commissioner.

THE COMMISSIONER: Okay.

Consumer Advocate? Not here.

Okay, Innu Nation?

Okay, just one second now. I see the Consumer Advocate just arrived. So if you don't mind, Mr. Luk, I'll go back to him and then I'll call you after.

MR. PEDDIGREW: (Inaudible.)

I apologize, Commissioner.

THE COMMISSIONER: No problem.

MR. PEDDIGREW: Mr. Kean, hello. My name is Chris Peddigrew and I represent the Consumer Advocate, so essentially the ratepayers of the province.

I do have some questions for you today. Thankfully, they're paired down a little bit from what was asked this morning.

One of the – I guess the first question I had for you is in relation to some of the answers you gave yesterday and today. You referred to checking your notes. And I guess I just want to make sure – so any notes that you might have that have to do with anything that we're – you've been asked about today or yesterday, have all those been produced and – or is there something else you've been checking that may not have been produced to the Commission counsel?

MR. KEAN: All the notes for the subjects that we've been talking about have been produced.

MR. PEDDIGREW: So any personal notes, any emails from your Project Solutions email address, anything like that would be ...?

MR. KEAN: I provided all emails from Project Solutions under summons, I guess, a couple of months ago. Further to my discovery interviews, there were a couple of areas that I followed up on in correspondence to Commission counsel with some further emails.

MR. PEDDIGREW: Okay. To the best of your knowledge, we have everything.

MR. KEAN: Yes.

MR. PEDDIGREW: Okay, thank you.

Also, there was some questioning during direct examination and cross-examination about the P-factor, and I believe your evidence just to – I'm going to paraphrase now, and certainly correct me if I'm not paraphrasing properly, but I think you said the P-factor, the decision to go with P50 was not your decision. You presented a range of options but ultimately to use that P50 was not your choice or not your decision. Is that correct?

MR. KEAN: As it relates to historically, yes, that's correct.

MR. PEDDIGREW: Okay. So whose decision would that have been?

MR. KEAN: As I indicated, my recollection was we were asked to provide initial model input for what was the Gull Island development in a P75 basis. And my team's focal point for communication of those requirements would have been through Nalcor Investment Evaluation who were responsible for running the economic models.

MR. PEDDIGREW: Right. And who in particular with Nalcor Investment Evaluation?

MR. KEAN: I know the manager changed in a couple of instances. So I think initially it was Mr. Rob Hull was the manager, but I'm not certain that he was the one giving the input at that point in time. Our focal point was often Mr. Steve Goudie who reported to Mr. Hull.

MR. PEDDIGREW: So – and in terms of the timing when that direction came down, I believe it was in 2012. Is that correct?

MR. KEAN: No, we talked about from the perspective of when the initial inputs were being provided which was during the winter of 2010, in the context of the DG2 inputs and the various options.

MR. PEDDIGREW: Okay.

MR. KEAN: Are you referring to ...?

MR. PEDDIGREW: Well, I guess – and I just want to confirm one other thing and maybe now is a good time to ask. But there was no modelling or estimate done on the Muskrat Falls

alone, I'm not counting Gull Island now, but Muskrat Falls alone using a P75 factor?

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

MR. PEDDIGREW: Okay.

All right and so then to – I guess the direction to use P50 for doing the modelling for Muskrat Falls, at any time, I guess, DG2, or any direction that would have come in terms of what P-factor to use would have come from Investment Evaluation at Nalcor?

MR. KEAN: I tried to recollect who would have given that advice, but I couldn't determine who it was. But I would think it would have come from Nalcor Investment Evaluation.

MR. PEDDIGREW: And who would have – in 2010 at Decision Gate 2, who would have been in the position at that time? Would it be Rob Hull?

MR. KEAN: Yes, I believe he was the manager at that point in time.

MR. PEDDIGREW: And do you know when he ceased being the manager, when it would have moved to somebody else?

MR. KEAN: There was a transition period with him to Mr. Auburn Warren, but I don't recall when that exactly was.

MR. PEDDIGREW: Okay. Any ballpark? Could it have been in 2010?

MR. KEAN: It may have been.

MR. PEDDIGREW: Okay. You're just not sure.

MR. KEAN: No, I'm not certain.

MR. PEDDIGREW: Okay. But it – would it have been Mr. Auburn Warren after Mr. Hull?

MR. KEAN: I think it's –

MR. PEDDIGREW: I think you also mentioned Steve Goudie. I'm just trying to figure out –

MR. KEAN: Yeah, I think Mr. Goudie retired around that time. That's why – at around DG2, just shortly thereafter.

MR. PEDDIGREW: Okay.

MR. KEAN: Which was around the same periods of time that Mr. Hull – the managerial role changed also from Mr. Hull to Mr. Warren. In terms of that interface then, I think it was primarily Mr. Warren, you know, that the interface point would be with.

MR. PEDDIGREW: Okay.

MR. KEAN: But there was less inputs, really, at that – after DG2. There was only one further input and that was DG3.

MR. PEDDIGREW: Right. And so is it possible the direction on the P-factor could have come from Mr. Warren, Auburn Warren?

MR. KEAN: Possibly.

MR. PEDDIGREW: And do you know – who did Mr. Warren report to? Do you know?

MR. KEAN: He reported to the CFO, Mr. Sturge.

MR. PEDDIGREW: Directly to Mr. Sturge. Okay.

I just have a few questions for you on the – in relation to John Hollmann. Not a lot. We did cover it earlier today and some of the questions I did have, have been covered.

But if I could take you to P-00957, please, Madam Clerk. And page 3 of that –

THE COMMISSIONER: Tab 29.

MR. KEAN: Thank you.

MR. PEDDIGREW: Thank you, Commissioner, page 3 of that document.

And, Mr. Kean, I just have a question. So this report, sent under this cover letter – and the cover letter is addressed to you at Project Solutions Inc. – is that typical as to how you would solicit reports from consultants? Would

they go to Project Solutions Inc. or would they typically go to Nalcor?

MR. KEAN: They would go to Nalcor.

MR. PEDDIGREW: Okay, so why is this one to Project Solutions Inc.?

MR. KEAN: I don't know. The covering email has gone to Nalcor. The only thing I can surmise would be I met Mr. Hollmann as an independent consultant at previous conferences and would have exchanged my personal business card with him. So I don't know if – maybe my initial email to him would have come from Project Solutions Inc. as I was travelling and not having access to Nalcor email.

MR. PEDDIGREW: Were there any other consultant's reports or other documents that would have come to you at Project Solutions Inc. as opposed to Nalcor?

MR. KEAN: There was one.

MR. PEDDIGREW: (Inaudible) be the only one?

MR. KEAN: Yes, there was one and I think it was one of the exhibits. The DG3 Draft QRA report from Westney on management reserve came to me on the – around the mid-June period to my personal address.

MR. PEDDIGREW: Right.

MR. KEAN: And I believe – you know, I can only surmise that I was either working from home, which I often had to do to produce certain deliverables, or I was travelling and not having access to Nalcor email.

MR. PEDDIGREW: And that would've been mid-June 2012?

MR. KEAN: That's correct.

MR. PEDDIGREW: Okay.

And so other than this Validation Estimating report that was sent to you at Project Solutions and the one you just referred to from Westney, there's no others that you're aware of?

MR. KEAN: None others that I'm aware of.

MR. PEDDIGREW: Right.

And in terms of – I think this morning you were asked about who paid for this Validation Estimating report. Would that have been paid for by Project Solutions and then Project Solutions were reimbursed by Nalcor, or would it have been paid directly by Nalcor?

MR. KEAN: No, it would have been a service order placed between Nalcor – or Lower Churchill Management Corporation and Validation Estimating, so –

MR. PEDDIGREW: Okay.

MR. KEAN: – a PO would exist in our system for that.

MR. PEDDIGREW: Okay. Thank you.

Madam Clerk, if we could call up document P-00264, please?

THE COMMISSIONER: I don't think we have that one.

MR. PEDDIGREW: It's not part of the binder?

THE COMMISSIONER: 00264.

MR. KEAN: Common (inaudible).

THE COMMISSIONER: Oh, yes it is, tab 14.

MR. PEDDIGREW: Okay. Thank you.

THE COMMISSIONER: I'm not sure if the document's there. I think it's just the first page of the document that's there, actually, in the binder that you have, so you'll have to look at the screen.

MR. PEDDIGREW: Okay. Thank you.

So this is a Briefing Note as Requested by Nalcor Legal Counsel McInnes-Cooper, and I think you've been asked a couple questions on this document.

If we could go, Madam Clerk, to page 14, please, and just scroll down a little bit further. That's good there. Thank you.

Mr. Kean, the paragraph that begins with: In February 2009, I just want to ask you a couple questions about this paragraph. Can you see it there on your screen?

MR. KEAN: Yes, I can.

MR. PEDDIGREW: Okay.

So in February 2009 LCP issued an expression of interest to the engineering and procurement "management market to seek interest in participating in the LCP under the Engineering and Project Support Contractor (PSC) model. This market testing activity revealed that there was apprehension by the major engineering companies to this form of project support ... model, while the ongoing internal governance risk highlighted by Westney in its 2008 risk review supported the market's views."

So what is the difference between an engineering and project support contractor and an EPCM, engineering, procurement and construction management engagement?

MR. KEAN: In – as I recollect, the engineering and project support contractor, where it isn't really a contract with an organization to undertake the detailed engineering that's produced in the engineering deliverables and so on, and provide project support in – by way of procurement support, project control support, construction management support, support to various other functions to an owner-integrated team.

MR. PEDDIGREW: Okay.

MR. KEAN: So it would be very similar to an integrated team model that, eventually, did occur.

MR. PEDDIGREW: So the engineering and project support contractor framework is essentially what happened in –

MR. KEAN: Yes.

MR. PEDDIGREW: – early 2012?

MR. KEAN: Yes, it is.

MR. PEDDIGREW: Okay.

And the comment here that says that the "market testing activity revealed that there was apprehension by the major engineering companies to this form of project support contract model." Do you know why that was, why there was apprehension?

MR. KEAN: I can't recall all the details. At this point, it likely was – you know, we were a new organization starting up and so on, and I guess different contractors had different experiences working under the different models. And – but I can't recall all the details, but it would be detailed in the project management contracting strategy document.

MR. PEDDIGREW: Is it a control factor? So if somebody, or a company, in the project support role would have less control?

MR. KEAN: No, it was about, I guess, being – I don't think that was an issue, but I can't recall for certain whether that was a core issue or not. It may have been one of several.

MR. PEDDIGREW: Do you know if SNC were one of these major engineering companies at this time that were not – or not – or, I guess, had expressed apprehension about the engineering project support model?

MR. KEAN: No, I can't state – I know they were one of the consultants that were – by which expression of interests were issued to, but I don't know if they fit in that category or not.

MR. PEDDIGREW: In the last sentence here it says: In addition to the market's acceptance of this model – so now we're talking about the engineering, procurement, and construction management model. So: "In addition to the market's acceptance of this model, it would place the EPCM'S activities at arm's length from GNL" – Government of Newfoundland and Labrador – "and other influencers which were identified as a strategic risk"

Just can you elaborate on what that sentence means?

MR. KEAN: I'm not quite certain. I don't recall writing that particular sentence, to be honest.

MR. PEDDIGREW: Do you have any thoughts on what it might mean?

MR. KEAN: No, only that we identified governance as, you know, a principal risk that we need to work our way through as part of the early phase in 2008, and from that precipitated a very large program that included, of course, the formation of various commercial entities and, eventually, the formation of Nalcor as a separate entity itself. So there are a lot of different things involved, ingrained in that particular risk itself.

MR. PEDDIGREW: And how would having an EPCM contractor at arm's length from government assist governance in an organization like Nalcor, or in regards to this project. Or would it?

MR. KEAN: I don't know.

MR. PEDDIGREW: If we could move down to – or just generally on this page and on the next page there's some discussion about, I guess, aspects of the Muskrat Falls Project that were undertaken before sanction. And I think you discussed that a bit this morning when you talked about the access road and some of the excavation work.

Do you have any idea how much money was spent before project sanction by Nalcor?

MR. KEAN: I think the target was in the range of 4 to 6 per cent of total invested capital. I recall that because that was a good indicator of front-end loading that we were striving to achieve. So that –

MR. PEDDIGREW: And what does that equal in dollars?

MR. KEAN: It's probably in that – before sanction, 250 million.

MR. PEDDIGREW: You think that had any bearing on the decision to ultimately sanction? I mean, it's a lot of money, \$250 million.

MR. KEAN: I can't really comment. I wasn't in the decision-making group.

MR. PEDDIGREW: Was there any sense at Nalcor that that factored into the desire to proceed with the project?

MR. KEAN: Not that I recollect.

MR. PEDDIGREW: Okay.

MR. KEAN: It's very important to spend an amount of effort up front to define the project, conducting key engineering and so on. Which is why we often used that IPA as an indicator for the 6 per cent of total invested capital before a sanction decision.

MR. PEDDIGREW: Right.

But \$250 million is a lot of money, you would agree with that?

MR. KEAN: It's representative of that amount of money that would have to be spent to well define a job.

MR. PEDDIGREW: Right.

Take you now to – or a few times, through yesterday and today, you indicated – and in your interview transcript, as well, you used the term backstop, and, I think, in relation to, I think it was estimate contingency that would be backstopped by the shareholder. Is that – do you recall making those sorts of statements?

MR. KEAN: Not as much estimate contingency. It would be strategic risk exposure – risk exposure beyond the risk that's been characterized as part of the 6.2 billion.

MR. PEDDIGREW: Okay.

And when you said backstop, what do you mean by that?

MR. KEAN: I guess it's a term used to say, at the end of the day, that entity would have to be the – provide the contingent equity to fund any residual risk exposure that may exist.

MR. PEDDIGREW: Okay.

And who did you envision that that contingent equity would be backstopped by?

MR. KEAN: At the end of the day, the shareholder is the people of Newfoundland and Labrador in the case of Nalcor Energy.

MR. PEDDIGREW: So the ratepayers, essentially, as well.

MR. KEAN: Or whatever commercial construct existed, yes (inaudible).

MR. PEDDIGREW: But you're aware of the change in the legislation that took place in 2012 that mandated that the ratepayers of the province pay for Muskrat Falls.

MR. KEAN: Aware generally about it, yes.

MR. PEDDIGREW: Right.

Basically, the ratepayers are on the hook for paying for Muskrat Falls is what it, essentially, boils down to. Would you agree with that?

MR. KEAN: I don't know all the details of the legislation, sorry.

MR. PEDDIGREW: Okay well I'll put it you, that's what it says. And so in that regards then, when you use the phrase backstop and that there would be a backstop for contingent equity – that's going to be funded by the ratepayers, you would agree with that?

MR. KEAN: If your earlier statement is correct, then yes, it would flow there, yes.

MR. PEDDIGREW: So in terms of developing your practices and determining what risk factors and how you would measure risk and assess risk and what would be included in strategic and tactical. Was the possibility that the ratepayers would be on the hook for paying for Muskrat Falls, was that considered, or was that a factor at all in developing your risk strategies?

MR. KEAN: There were risks associated with the aspects of the ratepayers and the commercial construct of this project. I understand those were key risks identified fairly early, that they were managed by others.

MR. PEDDIGREW: All right but I'm asking in terms of what you did? Is it anything that you considered specifically when you were deciding

– when you were doing your modelling, doing your estimates and deciding how risk might impact that.

Did the fact the ratepayers would have to pay for this – not a private shareholder – not like, you know, Suncor or ExxonMobil or anything like that, but I'm – the ratepayers would have to pay for this. Is that something that was considered?

MR. KEAN: I'm not certain how that would be considered, I'm sorry.

MR. PEDDIGREW: Okay. So is that, it wasn't to the best of your knowledge.

MR. KEAN: No, what I indicated was that the risks were identified from the commercial constructs and so on, but risk can impact many things. It can impact many aspects of the project objectives. We just don't focus on cost and schedule in that regard. So those risks would be looking at all aspects of that. It could be reputational risk; it could be stakeholder alignment risk, for instance.

So in that regard, in my scope of responsibility for delivery of the DG3 cost and schedule estimate, they would not have had a pure cost or schedule capital consideration. So from a quantitative perspective would not been factored into that input to provide the \$6.2 billion number that we talked about today.

MR. PEDDIGREW: Okay.

So – and maybe I'll ask the question this way, was there any different or special consideration given to your risk analysis because it was a ratepayer – or the ratepayers that would ultimately be responsible?

MR. KEAN: I guess at the end of the day the risk analysis produced a probabilistic view. And that at the – using that probabilistic information, decision-makers need to decide what – where they wish to be.

MR. PEDDIGREW: Okay.

I'm just going to ask you to look at document P-00955, Madam Clerk, Please.

UNIDENTIFIED MALE SPEAKER: Three – okay.

THE COMMISSIONER: 00995 is –

MR. PEDDIGREW: 00955 is the letter to Ms. O'Brien –

THE COMMISSIONER: – tab 3.

MR. PEDDIGREW: – and Mr. Learmonth from Richard Westney.

THE COMMISSIONER: Yeah.

MR. PEDDIGREW: And on page 3 of that document, please.

If you scroll down just a little bit further towards the bottom. Good, there we go. Thank you.

Mr. Kean, I think your evidence yesterday was that you were not involved in the discussion of the P75 factor here. Is that correct?

If you read the paragraph beginning with: As you know.

MR. KEAN: “As you know from my interview, I did acknowledge that it might well be appropriate to fund a public mega-project, such as LCP, at a P factor greater than 50. My discussions with the Westney team also confirmed that, during discussions with Nalcor, our view was that a P factor of at least P75 would be appropriate, as would a funding strategy for strategic risks. Our discussions of schedule risk were similar.”

MR. PEDDIGREW: Madam Clerk, if we could scroll up a little bit higher, please. There we go. Thank you.

So the first bullet there, Mr. Kean, it says: “As you know from my interview, I do not support the proposition that there is a single, ‘best practice’ for selecting the P factor for a mega-project. Much of that decision depends on the risk appetite, financial situation, strategic priorities, cost of capital etc. of the financial stakeholders. Moreover, the financial strategy for ensuring that strategic risks can be funded will vary. And, of course, these answers may

also vary between public and private ownership.”

So, it seems like Mr. Westney is pointing out or drawing attention to the fact that there may be a different approach depending on whether we're talking about public or private ownership. Do you agree?

MR. KEAN: It does state that.

MR. PEDDIGREW: Again, is that something that you considered?

MR. KEAN: From a perspective of – public or private from the aspect of actually undertaking the risk analysis, it's irrelevant. At the end of the day, the information that we are providing from a capital perspective is provided to the decision-makers to make an assessment in consideration to a myriad of other factors as to where – what their risk appetite is, what amount of risk is acceptable and what isn't. And that's not something that I would've been privy to.

MR. PEDDIGREW: That's not something you would've been privy to?

MR. KEAN: No.

MR. PEDDIGREW: Mr. Kean, there's been – recently in the press there's been some discussion about issues with software and General Electric. Are you familiar with those issues?

MR. KEAN: I've heard about them in the media, yes.

MR. PEDDIGREW: Okay, and what's your understanding of what that issue is?

MR. SIMMONS: Mr. Commissioner, I'm not sure what the relevance of this is, at this point in the sanction discussion. If it has anything to do with post-sanction, commercial matters between General Electric and Nalcor, it's something best deferred for further consideration later.

MR. PEDDIGREW: I don't think it does Commissioner, it does relate to the risk analysis but – it has nothing to do with post-sanction.

THE COMMISSIONER: Okay, let's see what the question is and you can let me know, Mr. Simmons, if you have an objection.

MR. PEDDIGREW: Thank you.

I guess my question is, the issue that's arisen, is that something that would be considered in terms of risk analysis and if so how – like, what category of risk would that fall into? Would that be a tactical risk? A strategic risk?

MR. SIMMONS: Mr. Commissioner, it sounds like it's a question about a current matter in dispute – that's been, it's known publically that there is a dispute, the details of it, I expect, are not as well known perhaps. And the question relates a current dispute to a matter of pre-sanction so I'm a bit worried about where it's going.

THE COMMISSIONER: Let's do it this way. Why don't you ask a hypothetical question, that if there was a software issue or whatever, what impact – I think what you're asking is what impact it could have on the risk analysis. I don't think that would in any way impact what you might be getting at, if I understand it correctly, Mr. Simmons.

MR. SIMMONS: Yes, that's correct Commissioner, and as long as the witness, I expect, understands –

THE COMMISSIONER: Can you stand-up, I'm having a hard time seeing you let alone –

MR. SIMMONS: Okay. Sorry.

As long as – I expect the witness understands that if he has any knowledge about current matters that might be in play between GE and Nalcor that he is not to stray into that area and disclose any information that he might have. I don't know if he knows any or not about it; but as long as we know that there is a boundary there, I think it's probably okay to continue.

THE COMMISSIONER: So just to explain to you, Mr. Kean, we're in a bit of a scenario here now in the Inquiry where I have basically set over to next week a decision about what's going to be so-called commercially sensitive and what isn't; what's going to be public, what is not

going to be public, if anything. So because we've done that, I know Commission counsel have been very careful not to ask questions that would relate to potentially any of these issues that Mr. Simmons might be relating – referring to.

So my understanding of the question, and you can correct me if I'm wrong, is that you are asking him is that, hypothetically speaking, if some – if a supplier had an issue with a certain thing, like the software, or whatever, how would that be characterized in your – or how would that be looked at with regard to your actual risk analysis.

Is that –

MR. PEDDIGREW: That –

THE COMMISSIONER: – what I think you're asking?

MR. PEDDIGREW: – that's a good summary of the question, yes.

THE COMMISSIONER: Okay, so, generally speaking, I don't want you to specifically refer –

MR. KEAN: Sure.

THE COMMISSIONER: – to anything that you might know, and I know you haven't been there for a while, but – so if you could just sort of answer that on a hypothetical basis.

MR. KEAN: Okay. Such a problem would normally be an effect of a risk event.

MR. PEDDIGREW: Okay.

And anticipating a risk like that, would that be...?

MR. KEAN: So the risk itself wouldn't be the software.

MR. PEDDIGREW: Right.

MR. KEAN: Or it would normally be some occurrence or situation that could result in a software problem. It might be something to do with complexity of an integration or interface, it might be, you know, an old – you know, that

could result in challenges of implementing software. It could be many things, but I guess I just – so it's – but the reason I bring that to you, the net result is a software impact in the case you're bringing forward.

So depending on the characteristics of that risk as you would define it, it might be a very simple thing that could be considered a tactical risk or it might be something broader that might hit the realm of being a very strategic situation.

MR. PEDDIGREW: Okay, fair enough. Thank you.

If I can take you now to document P-00808, please?

THE COMMISSIONER: Tab 39.

MR. PEDDIGREW: On page 26 of this document. So this is a page that you were asked about yesterday and this morning.

THE COMMISSIONER: (Inaudible) one page.

MR. PEDDIGREW: And so I believe you said that in relation to removing the note section here on the bottom of the screen that was requested by Steve Goudie. Is that correct?

MR. KEAN: No, I indicated that during the preparation of input to a data room for a credit-rating review there were a number of documents reviewed, some of which it was identified that there was some deficiencies. And I think that was Mark Bradbury indicated that, communicated that to me – Mark and others – the need to bring that document into alignment with CE-52

MR. PEDDIGREW: Right, okay.

And, sorry, yes, my question I guess is more related to the removal of the 6 per cent strategic risk. Was – is that a request that came from Mr. Goudie?

MR. KEAN: Yes.

MR. PEDDIGREW: Okay.

And when that request was made, did you ask him why? Did you discuss with him why he was making that request?

MR. KEAN: I don't recall specifically because the request didn't come to me.

MR. PEDDIGREW: Who did it come to?

MR. KEAN: It came to, I believe – as I recall, it came to my project controls lead, Mr. Pardy.

MR. PEDDIGREW: David Pardy?

MR. KEAN: Yes.

MR. PEDDIGREW: And did David Pardy then pass that along to you?

MR. KEAN: I'm sure I would've been made aware of that.

MR. PEDDIGREW: By Mr. Pardy –

MR. KEAN: Yes.

MR. PEDDIGREW: – or by somebody else on your team?

MR. KEAN: Yes. Yes.

MR. PEDDIGREW: And what was your reaction? Did you feel it had to be challenged or did you agree with it?

MR. KEAN: Well, in – I don't know if I really appreciated the extent of that at that point in time because we were – had been given so many different iterations and scenarios of different cash flows. And, you know, from my perspective, I was focused on ensuring people were aware of strategic risk, strategic risk exposure to the company or the project and making sure that it was understood that there was a residual risk exposure beyond the mitigated value to date. So I don't recall any discussions that I had upward but I would be very surprised if I did not.

MR. PEDDIGREW: Okay.

And you just said a moment ago that your – one of your roles was to ensure people had an understanding of strategic risk and were aware

of strategic risk. And did you feel that by removing it that impacted that understanding or knowledge of it by anybody in the organization?

MR. KEAN: The awareness was certainly there.

MR. PEDDIGREW: By removing it you don't think it had an impact on awareness. Is that your answer?

MR. KEAN: It certainly didn't.

MR. PEDDIGREW: It did not.

MR. KEAN: It did not.

MR. PEDDIGREW: Mr. Smith was asking you earlier today about – I think he directed you to an NSUARB document and asked, I think, if it was possible that there was – if we look at the note here – some possibility that it was a correction.

What I'd like to do now is take you to document P-00264, please, and page 19.

THE COMMISSIONER: Tab 14. You have one page so that's great.

MR. PEDDIGREW: If we scroll down a little bit further there, Madam Clerk – okay, that's good.

Mr. Kean, it says – oh, lost our page there. Right, okay, so the paragraph that begins with: During. So I think it says: During – or it says: "During the negotiations that led to the Term Sheet with Emera, Nalcor Executive made a conscious decision" So I'll finish the sentence, then I'll ask the question.

"... a conscious decision to drop the provisional strategic risk allowance recommended in the DG2 QRA stating that it was required to respond to Emera's concern regarding its ability to sell the strategic risk concept to the Nova Scotia regulator, the Nova Scotia Utility and Review Board"

So would I be correct in saying that this was a conscious decision, it wasn't a correction or ...? It was a conscious decision by Nalcor executive, would you agree with that?

MR. KEAN: It was a conscious decision to remove the strategic risk allowance. As for the underlying drivers, I guess, that's where the confusions come out.

MR. PEDDIGREW: What do you mean by that?

MR. KEAN: Well, what I had indicated was that my initial understanding was, as stated here, regarding the ability to sell, I guess, the concept to the UARB. However, subsequent to that, in that August of 2011 period, Nalcor issued its policy statement or principles on strategic risk about it transcending both options, as well as there were opportunities that could be realized.

MR. PEDDIGREW: And –

MR. KEAN: That's part of confidential Exhibit 52, I guess.

MR. PEDDIGREW: But that's not what's stated here in this paper, is it?

MR. KEAN: No, it's not.

MR. PEDDIGREW: And in the first line there, Nalcor executive, who's your understanding of who would be covered by that term?

MR. KEAN: Those that would've been involved in the term sheet negotiations.

MR. PEDDIGREW: Who would that be? Names is what I'm looking for.

MR. KEAN: It would be Mr. Bennett, Mr. Sturge, Mr. Martin.

MR. PEDDIGREW: Anybody else?

MR. KEAN: That's – I don't know, to be honest, who else might fit in that area.

MR. PEDDIGREW: To the best of your knowledge, those three individuals?

MR. KEAN: I'm sure there were others involved in the term sheet negotiations.

MR. PEDDIGREW: But in terms of – I guess, it's one thing to talk about term sheet negotiations, but I'm – what I'm talking about

here is the conscious decision that's being discussed in this paragraph, and it goes back to Nalcor executive. Your understanding of Nalcor executive in this context would be those three?

MR. KEAN: I guess they're the upper-C suite.

MR. PEDDIGREW: The what, sorry?

MR. KEAN: Sorry, the word C suite, I guess, they're – that's the upper, you know, executive, VP, CFO.

MR. PEDDIGREW: Okay, sorry. I just didn't hear what you said, sorry.

And so nobody else would fall into that category of executive to your knowledge?

MR. KEAN: Well, there are other members of an executive team, yes.

MR. PEDDIGREW: Right.

MR. KEAN: I don't –

MR. PEDDIGREW: But most likely, based on what you know of how Nalcor worked, it would be those three individuals?

MR. KEAN: And there could be others that were involved. I just don't know.

MR. PEDDIGREW: Okay.

Mr. Kean, we've seen a couple different versions of the Gate 2 project risk analysis yesterday and today. There's a version at P-00808 and there's a version at P-00097. The P-00808 was from June 2011 and the P-00097 was from September 2011. Would they both have been stored in this data room that you were talking about this morning, both versions?

MR. KEAN: I don't know, sorry. I would expect the most recent revision, but I would not be able to confirm that.

MR. PEDDIGREW: And so do you know, is there a standard practice that when there is a more recent version put forward that it replaces a previous version, or would all previous versions be kept as well?

MR. KEAN: Everything is kept.

MR. PEDDIGREW: Everything is kept.

So in relation to the request that we talked about a few minutes ago from Mark Bradbury to align P-00808, so the Gate 2 Project Risk Analysis, with the confidential exhibit 52, when that request was made to you, what was your reaction? Did you agree with it?

MR. KEAN: Well, as I recall, it was made before the issue of the revised document and after the issue of exhibit CE-52. CE-52 came in August. So after, you know, Nalcor had – it made logical sense as to the position in CE-52, so I didn't see any – have any objecting reason to that.

MR. PEDDIGREW: But in – well, to make sure that the documents matched each other, I guess, that's one thing. I'm not asking you to have an issue with that. I guess what I'm asking is did you have an issue with what you were asked to remove?

MR. KEAN: No, because I – no, I did not.

MR. PEDDIGREW: And so you didn't challenge Mr. Bradbury or question him as to why?

MR. KEAN: No. As I was aware of the confidential exhibit 52, had seen it. So I had no concern.

MR. PEDDIGREW: A piece of information like that that was removed, do you think it would have been important for the PUB to be aware of that?

MR. KEAN: I really can't comment.

MR. PEDDIGREW: Were you involved at all in terms of gathering documents at Nalcor that would be submitted to the PUB as part of its review?

MR. KEAN: I was – yes, I would expect I would have been, and I actually recall preparing some responses to some early information request.

MR. PEDDIGREW: And do you recall when that would have been?

MR. KEAN: Well, the review occurred in 2011, I recall, so it would have been in that period.

MR. PEDDIGREW: Okay. So the – and there was some evidence at the hearing previously about delays in Nalcor producing some of the documentation, or a great deal of the documentation, that the PUB was seeking. Do you have any comment or knowledge as to why that would have been? What the cause of the delays were?

MR. KEAN: No.

MR. PEDDIGREW: Were you aware that the PUB was waiting on this information?

MR. KEAN: No.

MR. PEDDIGREW: So as far as you knew, you were complying with their requests and that you were providing it in a satisfactory time frame?

MR. KEAN: I had no broader view of what the PUB's requirements were, just I was asked sometimes to respond to an information request or provide a document. So ...

MR. PEDDIGREW: Who would have made those types of requests to you within Nalcor?

MR. KEAN: I can't recall who was coordinating that review to be honest.

MR. PEDDIGREW: Would it have been the same person every time?

MR. KEAN: I think the review got to be – you know, it grew in size, so there was more than one person involved there. But I know there were some support resources allocated in assigning information requests and so on, so I – but I don't recall who that was now.

MR. PEDDIGREW: Who in Nalcor would generally be tasked with something like that? Would it be somebody in the document management department or area?

MR. KEAN: No, they would be support resources to that. It would be normally, you know, some, I guess, groups that would be used to doing that. It's not something the Lower Churchill group. I wasn't part of that group that was used to interfacing with the PUB, I guess, in that regard. So I wouldn't really be able to comment.

MR. PEDDIGREW: Any of the requests come from anybody on your team?

MR. KEAN: To me?

MR. PEDDIGREW: On your – yeah, on the project management team. Would any of the requests for documents for you to gather have come from anybody on the team?

MR. KEAN: There might have been a request to – occasional request from maybe Mr. Harrington or Mr. Bennett, but no that – the – principally, I think it was – because the number of information requests, it was trying to bring it in order and make sure things were being tracked and stewarded.

I actually recall one of my supporting team members, now that I think, a young lady. We sort of seconded her for a few months to help with some of the preparation work in that group.

MR. PEDDIGREW: And do you recall that this work was ongoing for a period of time?

MR. KEAN: Yes.

MR. PEDDIGREW: Mr. Kean, just to bring you back to document P-00264 for a moment, page 20.

If we could scroll down just a little bit and so – just back up a little bit higher to – there we go. Thank you, Madam Clerk.

So this was a paragraph you were asked about yesterday as well, the paragraph that begins with "This step signified a shift in risk appetite." And it goes on to say, "From this point forward, allowance for strategic risk exposure was not carried in capital cost inputs provided for CPW modelling, through to DG3. Rather it was believed to be understood that all such exposure, should it materialize, would be funded by

contingent equity available from the Province. This is reaffirmed in the letter received by Nalcor's CEO from Premier Dunderdale on 18-Oct-2011 wherein it reaffirms Shareholder's intentions regarding implementing the necessary measures to enable to Project ... to *'Provide the base level and contingent equity.'*"

So I guess my question in that regard is that – that assurance from the province is – would that – would it be fair to say that was one of the main reasons that Nalcor decided to take a different approach with respect to strategic risk?

MR. KEAN: I don't know, to be honest. In that regard that would have been – decision that was made up above and –

MR. PEDDIGREW: You were one of the people within Nalcor who was tasked with doing risk modelling and risk assessment?

MR. KEAN: Yes.

MR. PEDDIGREW: Right. So I guess what I'm wondering is was there any discussion between you and anybody on your team about this backstopping by the province and how that might decrease the need or cause you to change your mind regarding whether strategic risk would be –?

MR. KEAN: No, I don't.

MR. PEDDIGREW: You didn't have any discussions like that with anybody?

MR. KEAN: No, the only acknowledgement and knowledge that I had of the aspect of contingency equity is that it would be required under a finance project to have an amount of contingent equity, and that came in early in 2008, particularly with the guidance of our financial advisors: PricewaterhouseCoopers.

You know, it was featured in 2010 when Mr. Bradbury reached out to me for some viewpoints on what that amount might be so he could help frame that up, and – but it did – I recall in presentations that were given for the indicative credit rating that, you know, we were focused on demonstrating how we could mitigate and would be managing risk. But beyond that it was – you now, there were – you know, there was some

statement about irrespective – or beyond these mitigation measures, at the end of the day, you know, there's an assurance from the province regarding contingent equity for residual risk exposure that couldn't be mitigated.

MR. PEDDIGREW: Right, so – but what you're saying is you were not involved in the decision to – from this point forward, allowance for strategic risk exposure was not carried in capital cost inputs. You were not involved in that decision?

MR. KEAN: No, I wasn't.

MR. PEDDIGREW: Mr. Kean, did you have any involvement or did you work on the Hebron project at all?

MR. KEAN: Yes.

MR. PEDDIGREW: Okay. And there was a significant cost overrun on the project as well. Are you aware of that?

MR. KEAN: I didn't work on the Hebron project during that – during the execution phase.

MR. PEDDIGREW: Okay, but I guess just in terms of – you're aware of the fact that it went well over budget?

MR. KEAN: I'm not aware of how much it went over budget, no, sorry.

MR. PEDDIGREW: I think it was budgeted somewhere in the high \$5 billion range, and it went up somewhere around 14. Does that accord with what you may have heard?

MR. KEAN: No, I thought it was approved around 10 billion at sanction.

MR. PEDDIGREW: Either way – I don't know the numbers either, but it went well over, as far as I understand. I guess what I'm wondering, is any – in terms of your involvement with the Hebron project, were there any lessons learned from there that you took to the Lower Churchill Project in terms of risk strategy?

MR. KEAN: Of course the projects have some different characterises, but from a – one of the major cost contributors would be labour and

labour productivity and so on, which factored into a lot of the strategy around the labour models that were developed for the Lower Churchill Project and learnings from that, as well as benchmarking labour rates to ensure that we would be competitive, not only with Hebron, but with Long Harbour. So that would've been one core area of focus.

MR. PEDDIGREW: And so – oh, sorry – were you finished? Okay.

And, then, I guess that leads to my next question – was in terms of labour availability, and the fact that there was the Long Harbour project ongoing; I believe Hebron was still ongoing at the time. Was there any sort of sense that there might be a problem getting labour, given that there were two other major projects on the go at the same time?

MR. KEAN: Of course.

Actually, since 2008 we had looked at the labour demands for all the projects and overlaid them. For Long Harbour on each trade basis, we had knowledge of – we put an extensive amount of effort into the labour – understanding what the labour demand would be from each of these respective projects, as well as our own project, right down to the National Occupational code.

And we had a lot of interface with the Department of Labour, from the province, as well as at a national level. There's an entity whose name escapes me – but to understand the supply level and other competing projects that may occur in the province, which factored into a lot of the labour strategy and identifying what labour we did need – how – what the supply was and then how we would secure that amount of supply. And that would include things such as development of semi-skilled trainings, such as in tower assembly – transmission tower assembly.

So, it was very much in our forefront. And, thankfully, I would say that labour supply was not an issue for Muskrat Falls Project.

MR. PEDDIGREW: Did you ever receive any warning from the building trades council that labour shortages might be an issue?

MR. KEAN: I can't speak to whether Nalcor did themselves, but I'm not aware of any –

MR. PEDDIGREW: You didn't –

MR. KEAN: – personally.

MR. PEDDIGREW: – receive any personally, okay.

Did the fact that there were two other major projects ongoing at the same time, did that impact the wages and benefits that were required to be paid to attract labour to the Lower Churchill Project?

MR. KEAN: The benchmark, really, for labour waging would have been, you know, ensuring we were competitive with alternate projects, yes. But, at the end of the day, with the availability of labour that we thought there would be, we didn't think it would be a major stumbling block.

But, yes, it is a consideration. You have to have a competitive wage package, or, as a result, you will have that strategic risk of not being able to supply the quality labour, which will result in a much longer construction program.

MR. PEDDIGREW: We've heard the project described as a \$6.2 billion project, and, I believe, Mr. Marshall yesterday referred to it as a \$7.4 billion project, which factors in the interest payments.

I'm just wondering, in terms of how it was communicated from Nalcor's point of view to the public when people talked about the project, was there any directive given to refer to it as \$6.2 billion project as opposed to the figure that included the interest cost?

MR. KEAN: I have no insight on that. Sorry.

MR. PEDDIGREW: Not anything you were told.

MR. KEAN: No.

MR. PEDDIGREW: Okay, thanks. Those are all my questions.

MR. KEAN: You're welcome.

THE COMMISSIONER: All right, the Innu Nation?

MR. LUK: Good afternoon, Commissioner.

Good afternoon, Mr. Kean. My name is Senwung Luk, I am counsel for Innu Nation and I'm here to speak to you about something that – a number of topics that I think will be somewhat different than what my friends have spoken to you about for the past couple of days.

Now, I take it that as project services manager, you were familiar with the IBA with the Innu Nation?

MR. KEAN: I was familiar with the general provisions, yes.

MR. LUK: And IBA stands for Impacts and Benefits Agreement.

MR. KEAN: Yes.

MR. LUK: Is that correct? And that's the IBA that was entered into between Nalcor, Innu Nation and the two Innu First Nations, is that accurate?

MR. KEAN: Yes.

MR. LUK: So, I assume you have read the IBA at some point?

MR. KEAN: I have not read the entire document.

MR. LUK: Are you familiar on a high-level basis with the contracting provisions of the IBA?

MR. KEAN: I'm familiar with the certain package being Innu preference – Innu-first packages, yes.

MR. LUK: And you have some familiarity at a high level with the employment provisions of the IBA as well?

MR. KEAN: Yes.

MR. LUK: So, if I could – so you might have had, as project services manager, you would've had oversight over contracting done under the IBA?

MR. KEAN: No, I wouldn't have.

MR. LUK: What was your role with respect to the contracting under the IBA?

MR. KEAN: My – I had no direct responsibility for contracting in general. That responsibility was held by the procurement manager who reported to the commercial manager.

MR. LUK: Was it your responsibility to assess the risks of being a party – for Nalcor being a party in the IBA?

MR. KEAN: No, it wasn't.

MR. LUK: Okay.

So, if I could take you to tab – I'm sorry, document P-00094, and I think you've seen this document a number of times already. That's the Decision Gate 3 Basis of Estimate. And you are familiar with this document, I take it?

MR. KEAN: Yes. I'm the principal author, I guess.

MR. LUK: You had some role in its preparation. And you would agree that part of the function of this document is to identify risks of certain elements of the Lower Churchill Project?

MR. KEAN: No.

MR. LUK: No?

MR. KEAN: It's not meant to identify risk. It's meant to document the basis of assumptions used to form the estimate.

MR. LUK: Okay.

MR. KEAN: Sorry.

MR. LUK: If I could take you to page 100 of this document. And if, Madam Clerk, if you could scroll down to the bottom. Right there.

So it's set out in this document that the Innu Nation IBA will have "IBA Process Agreement up" to "and including 2012 – \$4.4 million." That's spending for, I take it, getting to

agreement for the IBA, is that – are you familiar with this part of –?

MR. KEAN: I'm – well, I'm not familiar with the – all the details of this. This would've been provided by the relevant manager at that point in time, so I can't speak to the particular details, no.

MR. LUK: You were satisfied that this was accurate to the best of your –

MR. KEAN: Yes.

MR. LUK: – knowledge when the document was finalized?

MR. KEAN: Yes.

MR. LUK: So there's – you agree that here it's set out that there's \$4.4 million for the IBA Process Agreement.

MR. KEAN: Yes.

MR. LUK: And that there's "IBA Implementation Payments of \$5 million per year from 2013 through 2017 ..." and – is that accurate?

MR. KEAN: Yes.

MR. LUK: And then there's "Other costs related to Environment Management Committee and various third party supports." And I assume it's not set out because it – those amounts are less than, you know, the 4.4 million or 5 million that's set out above.

MR. KEAN: And it would've been – this – these statements are a bit of a summary, if you would, of details that would be supported in the spreadsheets and so on.

MR. LUK: Right. So this is part of the set of assumptions that go – that went to the DG3 estimate?

MR. KEAN: Yes.

MR. LUK: And these are more or less definite figures of costs associated with the Innu Nation IBA?

MR. KEAN: As I was informed, yes.

MR. LUK: Yes, okay.

Now if I could take – Madam Clerk, if I could take us to page 67 of the same document, and if you could scroll down to the bottom – oh, too far. Right there. Thank you.

And what we have here is also part of this DG3 estimate, and it stated here that "there are selected Muskrat Falls Generation packages which are nominated for Innu Nation partnered companies. The DG3 CCE does not include any overhead premiums to reflect this strategy, rather all such premiums shall be considered a part of the estimate uncertainty review undertaken in order to recommend an appropriate Estimate Contingency."

Is that – that's a fair reading of what's set out in here?

MR. KEAN: That's what's stated there, yes.

MR. LUK: What does CCE stand for?

MR. KEAN: Capital cost estimate.

MR. LUK: Thank you.

So I note that in this document you use the word "premium." Can you explain what you mean – what is meant by premium in this reference?

MR. KEAN: Well, given that these are, I guess, in some cases, new entities that may be forming; there may be additional costs that would factor into their overhead beyond an established firm, for instance. And that would result in some small incremental amounts that need to be captured in the cost – the unit cost – that need to be paid by Nalcor or – at the end of the day. So that – there would be a viewpoint there could be a small premium.

MR. LUK: Okay. And so it's a premium in the sense of saying that an Innu company, an Innu business – their costs might be slightly higher than a non-Innu business. Is that what's meant by –

MR. KEAN: No, it's more about from a development perspective, I guess; we're

establishing capacity in the area, be it Innu or non-Innu. And any time there's an effort to establish capacity, there – you know, there would need to be recognition that the cost base by which to average that over is not as much. So you can expect to probably pay a little bit more.

MR. LUK: So I may be mistaken here but it seems like what you're saying in this document is that there's premiums associated with Innu Nation-partnered companies, but what you're telling me now is that there's premiums associated with non-Innu companies also.

MR. KEAN: Well, this – this statement here is in the context of those packages that were identified for that area –

MR. LUK: Okay.

MR. KEAN: – which were called out in the IBA. We were trying to understand whether we could expect that the cost for those packages would be more. And only from the perspective in that, from an estimating perspective, we're trying to land upon what would be an appropriate contractor's overhead rate.

And, you know, on a bigger scope, there's economies of scale. You know, if a powerhouse contractor, the overhead rate may be one percentage, but if it's a small package, that rate could be – have to be higher as a percentage base. And some of the Innu-first packages were relatively small, you know, relative to some of the big ones.

So it's recognizing from a per cent perspective, not necessarily is it 12 or 15 per cent, it might be 13 or 14 per cent or 16 or 17 per cent. So there might be a couple of incremental per cent there. I don't know what the exact number would have been.

MR. LUK: So, Mr. Kean, did Nalcor try to estimate a premium for non-Innu companies as well as Innu companies, or just for Innu companies?

MR. KEAN: Any of the – what we saw from a small packages where there's – there may have not have been existing capacity in the region, be it on the Island or in Labrador, we would look to say that there's – if – you know, there's – to

establish an amount of services, there could be a cost premium there. There's a fixed cost to set up and establish your infrastructure.

So that's what – you know, that's what we were trying to ensure we were capturing. And in most of the cases for Muskrat Falls generation, in the way the project's contracting strategy worked out, these were primarily Innu Nation packages.

MR. LUK: If I could take – Madam Clerk, if I could take us to P-00130.

THE COMMISSIONER: Tab 41.

MR. LUK: Page 19, please.

So, Mr. Kean, just to get a sense of what we're looking at here, I believe that the table of contents set out here sets out – at B.1 there's an SNC-Lavalin Risk Register. And then at B.5 there's Initial Screening of SNC-Lavalin's Risk Registers for Applicable Cost and Schedule Risks for Probabilistic Analyses.

So what was SNC-Lavalin's role versus Nalcor's role in the preparation of each of these documents, the B.1 and the B.5?

MR. KEAN: I guess SNC's role in both B.1 and B.5 would have been the same in that both were originated from the base data set that was being managed by the SNC risk manager at that point in time. And B.5 is really dealing with a summary or a screening of those complete register to identify those that need to be given consideration during the cost and schedule risk analysis.

MR. LUK: So the risks that are set out in B.1 or B.5 are – if they are set out here, then it's something that Nalcor considered a risk.

MR. KEAN: It would have been considered from – it would have been considered a risk and the effort to – into that risk would have been driven by the exposure.

MR. LUK: Can you explain that? I'm not sure I understood your answer.

MR. KEAN: All risks identified in the project are qualitatively assessed to prioritize for response. Some things are a lot of exposure,

particularly if you got concerns with human health and safety.

MR. LUK: Mm-hmm.

MR. KEAN: Others might have lesser exposure and, of course, the effort to resolve is proportionate.

MR. LUK: So – but if it's on here it's a non-zero risk. I mean, there's some risk. If you set out in a chart in B.1 or B.5, then it's a risk.

MR. KEAN: Okay, yes.

MR. LUK: Is that fair?

MR. KEAN: Yes.

MR. LUK: So, Madam Clerk, could we go to page 49 – at the bottom of 49, please? Could we zoom in to the very last row and a little bit to our left? Could we zoom in to risk number 141?

And part of this text rolls over to page 50, so I don't know if we're able to put both on at the same – yeah, there we go. Thank you.

So this is from the Risk Register identified as B.1 in this document, in that table of contents. And it's stated here risk number 141: Innu Involvement/IBA – and I'll just read out from it. Let me know if there's anything wrong with what I'm reading out.

“Due to intimate involvement of Innu people in delivery of the project (IBA), there might be instances of negative influence on LCP contracting, permitting, labour relations, that leads to narrower choices of contractors, suppliers and labour issues with environmental monitoring and permitting (destruction of land and hunting areas during construction, etc.) leading to extra costs, schedule delays, safety issues, etc.”

Would you say it – like, would you say that – is that consistent with the risks that we looked at earlier in the DG3 document of the idea of premium? Is this talking about the same thing?

MR. KEAN: No. I don't think so. This risk would have predated the – even the execution of the IBA, and it was flagging, I guess, some of

that broader uncertainty, 'cause things – there weren't narrowed down confirmation at that point in time.

MR. LUK: Madam Clerk, could we just slide over so we can see the header of that page?

Would you agree with me that this – oh, I'm sorry we went too far – would you agree with me that this says it's printed on May 8, 2012?

MR. KEAN: Yes.

MR. LUK: And would you agree with me that the IBA was signed in 2011?

MR. KEAN: Yes.

MR. LUK: So in fact this postdates the IBA?

MR. KEAN: This printing does. Yes.

MR. LUK: Yes. And when – Madam Clerk, can we go back to that cell that we were looking at before?

In fact, this document identifies as a risk, the – quote, unquote – the “intimate involvement of Innu people in the delivery of the project (IBA)”

Is it not fair to say that this is talking about the execution of the IBA?

MR. KEAN: I don't think so, because I think it would have been identified prior to the – prior to this time, and this was a risk that was initially identified by – this registered by the SNC team. A lot of uncertainty within that organization as to what this – what the IBA would mean.

MR. LUK: Okay.

MR. KEAN: And how – if or – people were flagging, would there be any concerns in the execution? Because at that point in time, of course, the IBA was being negotiated by a separate, you know, group. There was some communications, of course, but people had, you know, not total clarity.

So people – whoever – I don't know who originated the risk, but it would have been talked about in workshops – would've flagged it as a concern, but of course, after the IBA had been

executed in November, of course, that provided a great deal of clarity as to which packages were Innu first, what the hiring protocol was and so on. So that should have brought the risk exposure and viewpoint down quite a bit.

MR. LUK: Okay.

Madam Clerk, can we pan over to the right side of page 49, where there's a cell which reads 141.1.1, and I'll put it to you that the top of this column is titled "Addressing Action." I think it's the same header on page 50.

And so it's set out as an Addressing Action in this document: "To promote an approach (possibility of waiver) that when an IBA contractor/supplier is not competitive enough, some other non-IBA vendors could be considered."

Was this SNC-Lavalin's suggestion, or was this Nalcor's suggestion?

MR. KEAN: It could've been anyone's in the combined group.

MR. LUK: Okay.

So the idea of an IBA contractor supplier not being competitive enough, that's an issue that has to do with price to some degree, would you agree?

MR. KEAN: I guess there are several variables in that equation. You know, it could be that from a bids and contractor selection, from a timing of delivery, price, quality. Yes.

MR. LUK: And that's related to the idea of the premium that was set out in the DG3 document, is that fair? If there's –

MR. KEAN: Hmm.

MR. LUK: – a price that isn't quite as good as –

MR. KEAN: No –

MR. LUK: – a competitor –

MR. KEAN: No, I wouldn't – no, because a premium is meant to be a small incremental amount –

MR. LUK: Okay.

MR. KEAN: – to cover overhead. This is beyond that there. You know, your premium might be a few percentage points. But what about if there's only, I guess, one provider, and that, just by the pure nature, that the Innu company has partnered with what could be a very expensive provider of that? Well, that could result in a price for that package that's much higher than you would've assumed.

MR. LUK: So I think that's a very interesting observation. If that were the case – if it were the case that the price is high because there's only one provider and that's the provider with whom the Innu partnered with, then is that high price really attributable to the IBA? Isn't that just because there is only one provider of that service?

MR. KEAN: It would be a result of only having one bidder for instance. And if it was, I guess, an Innu-preference package, it would be encouraging plenty of partnerships and hopefully plenty of bidders.

MR. LUK: So this addressing action that's set out in this document that, you know, (inaudible) on its face it says: "some other non-IBA vendors could be considered." That's the approach that is supposed to be promoted, according to this risk register: 14.1.1. [sp 141.1.1]

Do you agree that that's –

MR. KEAN: That's what's –

MR. LUK: – what is –?

MR. KEAN: – stated there, yes.

MR. LUK: Would you agree with me that the – that is, in fact, what is provided under the IBA?

MR. KEAN: Pardon me? That is...?

MR. LUK: That is, in fact, the terms of the IBA, that Nalcor has an absolute right to contract with any contractor it wishes to contract with, that there is no obligation to enter into contracts with Innu contractors.

MR. KEAN: I don't know the particular details, sorry.

MR. LUK: I think you told us earlier that there – that you had some high-level familiarity with the IBA –

MR. KEAN: I know the –

MR. LUK: – and its contracting provisions?

MR. KEAN: I know that there's a list of packages that were Innu-first packages and that, of course, we worked – our procurement group worked with the various Innu companies wishing to understand that, and – but I also understood that, in the case of a bid, if there was – you know, the prices were deemed to be way outside the norm of what could be expected, there was some arrangements there that that could be assessed or, you know, discussed and a process to resolve that from an alternate execution or alternate non-Innu bid or something of that nature.

But I don't think that ever came into question or utilization in the project.

MR. LUK: So you said you had familiarity with those contracting provisions, and I presume you had familiarity with Nalcor's rights under those provisions, as well?

MR. KEAN: Not to any great deal, 'cause it wasn't in my scope of responsibility. We had subject matter expertise in that area that were quite familiar with the procurement requirements under the IBA, maintained those open communications and relationship with various parties there and, really, took care of that side of the business.

MR. LUK: So would it surprise you if, in – there – if there is a provision in the IBA for preferential Innu contracting. You – I think you made reference to that earlier –

THE COMMISSIONER: Just before –

MR. KEAN: (Inaudible.)

MR. LUK: – that you're aware –

THE COMMISSIONER: – we –

MR. LUK: Yes.

THE COMMISSIONER: – go on a little bit farther, and I hate to interject, but I'm trying to figure out exactly how this goes to what we're trying to deal with for phase 1 of the Inquiry. I think this might have something to do with phase 2, perhaps. So, you know, time is a factor here –

MR. LUK: Yes.

THE COMMISSIONER: – so I don't want to do phase 2 twice.

MR. LUK: Absolutely.

THE COMMISSIONER: So if you could get us focused back to where we are, that's – I'd appreciate if you could stick to that.

MR. LUK: Yes, I –

THE COMMISSIONER: Okay.

MR. LUK: – I understand, Mr. Commissioner. I think where we are, where I see us as being is that the DG3 estimate is an estimate of cost, and it is identified as an uncertainty in both the first document I took the witness to, as well as this charge that the IBA contributed an element of uncertainty to the cost estimate and I'm trying to zero down on what exactly the uncertainty was.

THE COMMISSIONER: Right, but how does that – the fact that it's an uncertainty I think is the relevant part. What that uncertainty is, like, I have a sense here that what you're getting into is something beyond the scope of what I'm trying to deal with here. So, you know, again, I have to remind you and the other Indigenous groups the purpose by which that I allowed standing, and I'm going to continue that. I mean, this is not a discovery process for something else, it's not whatever – you know, this has to relate to the Terms of Reference. So –

MR. LUK: Absolutely.

THE COMMISSIONER: So, you know, if you can make your point in the next minute or so, fine; if you can't then leave it for phase 2 and we'll deal with it in phase 2.

MR. LUK: Mr. Commissioner, as much as I'd like to, I don't think I can give evidence, so if you could just indulge this line of questioning for a little bit. I do understand that there is –

THE COMMISSIONER: Well, let's get to it. Because when I sense we're doing something that I'm not supposed to be doing, I'm not going to do it. Okay?

MR. LUK: Okay.

THE COMMISSIONER: Okay, so go ahead and I'll see how far this is going to go.

MR. LUK: So would it surprise you, Mr. Kean, if there is no obligation at all in the IBA for Nalcor to be contracting with any Innu contractors?

MR. KEAN: It would surprise me, yes.

MR. LUK: Okay, and perhaps I can then – I could then take us to the pre-interview transcript –

MS. O'BRIEN: It's not entered as an exhibit.

MR. LUK: Okay.

MS. O'BRIEN: But you can (inaudible) –

MR. LUK: I would like to impeach the witness.

MS. O'BRIEN: Yes, you can just – we can show him (inaudible) – most times we have just been reading out (inaudible) –

MR. LUK: Okay, I will do that.

MS. O'BRIEN: – (inaudible) Mr. Kean (inaudible).

MR. LUK: So in your pre-interview transcript, Ms. O'Brien asked you, on page 141 –

MS. O'BRIEN: (Inaudible.)

MR. KEAN: Thank you.

MR. LUK: – at the bottom, Ms. O'Brien asked you: I mean, did the benefit strategy, the IBA, the Nova Scotia benefits agreement, did – is it – would it be correct to say that those were

requirements to have – to give local benefits, would have added cost – some cost to the project?

And you answered: They would of – I think you meant – I think you said they would have.

MR. KEAN: Have.

MR. LUK: But in the case of the benefits agreement, when it came to engineering, those costs were accounted for in the DG3 base estimate. And this is, Mr. Commissioner, the point that I'm trying to make is Mr. Kean's answer to that question is a yes.

And Ms. O'Brien continued and said: Okay. Mr. Kean said: In the case of the IBA, which gave certain packages first – Innu-first opportunity, those packages were identified as part of the estimate and we endeavoured to, you know, we had our – we put a small provision in there for any new participation factor, but we had no way of knowing, at certain times how many bidders we may have had, right?

Ms. O'Brien: So when you say you put something in there for Innu participation factor, just explain that to me. Mr. Kean: I'm thinking, I think there may have been a percent or two extra profit or something in there. Ms. O'Brien: That you would've upped the base estimate by a percentage or two.

I take it that you're saying here, in this part of the interview, that the fact of contracting with Innu businesses raised your cost by 1 to 2 per cent, as part of your estimate?

MR. KEAN: That was the comment I had made about the aspect over the overhead, that there may be, for those packages, a small premium to represent – you know, not necessarily always that they're – because they're Innu, but also because there may not be the existing capacity for those packages in that region.

MR. LUK: Okay.

MR. KEAN: So it could be some combination of both.

MR. LUK: And –

MR. KEAN: Busing, as an example. Is there an existing busing capacity in the region? I don't think so, so maybe, even though it's an Innu-first package, you know, there's a capacity cost too that needs to be absorbed there.

MR. LUK: Okay. And there's a subsequent part of this interview where you refer to Innu contractors potentially pricing gouging. I think we'll leave that for phase 2, unless the Commissioner believes it might be –

THE COMMISSIONER: Was that – and maybe you can help me here. Was – so are you saying that was part of the estimate?

MR. LUK: I – my reading of it, and I don't wanna put evidence to a witness, but my reading of it suggests that the witness thought that the actuals went over the estimate by a certain amount as a result of what he – and I don't wanna put words in his mouth – but what he called sticker shock and potentially market gouging. So I think that's more properly in phase 2, and with your permission –

THE COMMISSIONER: Well, one thing I'd like to know is, then, was there – was that added into the DG3? Was that added into the estimate?

MR. KEAN: No, Sir.

THE COMMISSIONER: It wasn't? Okay. So it might be better for phase 2.

MR. LUK: Okay. Okay.

But at any given time, the IBA doesn't actually – would you be surprised to learn that the IBA doesn't actually impose any obligations on Nalcor to contract with Innu businesses?

MR. KEAN: I don't know all of the specifics of the document. I know there's packages that were identified as Innu-first, and I understand, should the arrangements not work out, there are alternate ways by which those packages could be contracted.

MR. LUK: And by packages being Innu-first – I just want to unpack that a little, pardon the pun. So certain packages being Innu-first, is it fair to say that not all contracts were subject to the Innu-first arrangement?

MR. KEAN: Correct.

MR. LUK: And there's a certain list of contracts to which it does apply?

MR. KEAN: Correct.

MR. LUK: And just for the record, if we could go to P-00300 redacted. Page 110, please.

And is it fair to say that – can we just scroll down so that 4.3.2 is on the screen? Is it fair to say that there's a qualification process that's set out in the IBA for these Innu businesses?

MR. KEAN: I understood in general there was a qualification process, but I don't know the mechanics of it.

MR. LUK: And is it fair to say that Nalcor makes a decision about whether a business is qualified or not?

MR. KEAN: Yeah.

MR. LUK: That's what it seems to show on ...

MR. KEAN: Yes.

MR. LUK: And so for – no non-qualified businesses would be listed as qualifying for the Innu-first treatment. Is that fair?

MR. KEAN: It's fair.

MR. LUK: And is it fair to say that the Innu-first provision only provides for a right of first bidding?

MR. KEAN: I don't know, sorry.

MR. LUK: Is it fair to say that if an Innu business is identified as qualified and it presents a price with which Nalcor is not happy, that there's no obligation on Nalcor to contract with that business?

MR. KEAN: Again, I'm not totally certain of the mechanics of the agreement, so I know there are some – I understand that there are some general provisions, but I don't know the extent of how they could be used or what – how they could not be used.

MR. LUK: Okay.

So even if a business is chosen as an Innu business qualified and is the first bidder, there's room for negotiation between Nalcor and that business on price?

MR. KEAN: Again, I don't know the –

MR. LUK: You don't know.

MR. KEAN: – details of the agreement.

MR. LUK: Okay.

MR. KEAN: So –

THE COMMISSIONER: Want to just take your mic just for a minute, if you would.

MS. O'BRIEN: No, I do have my mic. I'm sorry to interrupt my friend's cross-examination. I don't do it lightly. But I just want to make sure that we're clear that we will – our plan is to cover procurement, which would include how contracts were awarded, including how Innu contracts were awarded under the IBA, in phase 2 of the Inquiry.

And so we will have a witness, in particular Mr. Pat Hussey, who was on the project management team specifically responsible for procurement, testifying then.

MR. LUK: Thank you, Ms. O'Brien.

Maybe I'll just ask you one or two final questions then. Is it fair to say that there isn't any Innu contractor with whom Nalcor entered into contracts whom Nalcor didn't willingly do so? Considering that –

THE COMMISSIONER: Can we leave that one for phase 2, too, so that we can get the proper person to answer that one?

MR. LUK: Okay.

Is it fair to say that, for the purposes of estimating costs, that it was a fair assumption to make, given the terms of the IBA, that Nalcor could have entered into the lowest priced bidder – entered into a contract with any lowest priced

bidder regardless of whether they were Innu or not?

MR. KEAN: Again, I'm not that familiar with the underlying terms of the IBA. I can only speak to how we put together the estimate in consideration of the IBA.

MR. LUK: So if it is – and I can – if it is fair that it was open to Nalcor to contract with whomever it wants – and maybe you can take it on check – then why is it necessary to set out a 1 or 2 per cent premium, as you said in your pre-interview, for contracts that are entered into as a result of the IBA?

MR. KEAN: Well, from an estimating perspective, we worked under the assumption that these contracts would be awarded to Innu-first companies. So we estimated the assumption consistent with the Impacts and Benefits Agreement, certain packages are Innu preference. We'll work with that understanding, and as a result we'll consider that in our preparation of an estimate – estimated cost for that – regarding the overheads of those packages. That's just a basic assumption that IBA would be upheld.

MR. LUK: Okay.

And that's a – but I think you agreed with me earlier that there was no allegation that you were aware of under the IBA for Nalcor to contract specifically with Innu businesses. So is it fair to say that if you have assigned a premium to those contracts, that's a decision that Nalcor made at its own discretion, not as a result of obligations under the IBA?

MR. KEAN: A decision to add an incremental premium to address the overheads was reflective of our understanding that these packages would be Innu first, and it would likely require some capacity funding therein. Some – whoever would be the proponent would have to develop some further capacity. So just from a prudence, in putting together an estimate of the cost, I consider it to be appropriate.

MR. LUK: Okay. Those are my questions.

Thank you.

THE COMMISSIONER: Okay, Mr. Luk.

We'll take our break now, and then we'll come back with the NunatuKavut Community Council.

CLERK: All rise.

Recess

CLERK: All rise.

Please be seated.

THE COMMISSIONER: Okay. NunatuKavut Community Council?

MR. RYAN: Ulakut, good morning.

My name is Victor Ryan, and I represent NunatuKavut Community Council, which represents Inuit in south and Central Labrador.

I just have a few questions for you. I really want to focus on the beginning of the project and the way that risk was framed from the get-go.

But before I take you to some documents, I just want to put a question to you. Do you agree that the relationship between the Lower Churchill Project and NunatuKavut resulted in excess cost to the project?

MR. KEAN: Not sure I can answer that, because I don't ...

MR. RYAN: Perhaps I'll put it to you this way: Do you agree that the relationship between the project and NunatuKavut, which at one point devolved into a protest and site disruption, resulted in excess costs to the project?

MR. KEAN: Costs were incurred due to site disruptions.

MR. RYAN: Okay. Do you agree that, as a result of site disruptions, that the project was delayed?

MR. KEAN: Yes.

MR. RYAN: Do you agree that a significant portion, if not a majority, of the individuals

taking place in the site disruption were Indigenous?

MR. KEAN: I don't know. I don't have that detail, sorry.

MR. RYAN: Okay.

If we could go to, Madam Clerk, Exhibit P-00896, the Risk Management Policy.

THE COMMISSIONER: Tab 21.

MR. RYAN: So this is a one page document, so just –

THE COMMISSIONER: Oh.

MR. RYAN: – after the – so the last page – okay, this is fine. Thank you, Madam Clerk.

So this is – as I understand it – the highest level of, sort of, just a very brief value statement about the way that the Lower Churchill Project is gonna approach the concept of risk and quantifying risk and mitigating risk. Is that correct?

MR. KEAN: That is correct.

MR. RYAN: And so – just at the very top here, where it says: “We” – meaning the Lower Churchill Project management team – “will serve the needs of all our internal and external customers, stakeholders and our shareholder.” Can you describe to me who the external stakeholders would be?

MR. KEAN: There would've been a broad list of stakeholders for the project as maintained by our stakeholder consultation team and stakeholder management team, but a large group. It could've been the public in general or various subgroups therein.

MR. RYAN: Okay, do you know if Indigenous groups such as NunatuKavut were considered external stakeholders by the Lower Churchill Project management team?

MR. KEAN: I believe so, yes.

MR. RYAN: Madam Clerk, if we could to Exhibit P-00897, and this is, as I understand it,

the Risk Management Philosophy, which is still fairly high level, but sort of drilled down a little bit more than the one-page policy. Is that correct?

MR. KEAN: Yes, it is.

MR. RYAN: If we could go to page 4 of this document, Madam Clerk?

And I'm interested in section 2.0, the scope. It struck me – your testimony yesterday and in response to some questions today – that we've discussed a lot of risk in terms of – I believe, Commission counsel put it – dollars and days as the impact of those risks or the potential impact of those risks.

But as I read this, it seems to me that the Lower Churchill Project was fairly sophisticated enough to understand that risk does not solely concern what may affect your dollar amount or your schedule. Is that correct?

MR. KEAN: That's correct.

MR. RYAN: And so risk can include things like occupational health and safety, environmental, reliability, reputation and image. That's correct?

MR. KEAN: That is correct.

MR. RYAN: So it's correct to say that the Lower Churchill Project management team took a broad enough and a nuanced enough view of risk that it could encompass non-financial, non-scheduling factors?

MR. KEAN: Yes.

MR. RYAN: If – Madam Clerk, could we go to page 8 of this document, please? Specifically Figure 4.3.

And so this document, Mr. Kean, as I understand it, this visual sort of represents the parties that were to assume risk in the creation of the Lower Churchill Project. Is that that an accurate summary?

MR. KEAN: Not entirely. These were – this was a representation, a simplistic representation of the – more of the spectrum of risk, yes. The circle is trying to encapsulate the entire spectrum

of risk and say that, of those risks, some of them will be allocated to these various parties; some might be – have to go elsewhere, maybe not even pre-defined, that need to be defined at a later point in time.

So some of those would be, you know, in theory, allocated to the party best positioned to manage that. It doesn't mean own, but to actually manage that risk. So stakeholder risk may be managed by Nalcor; it may not be managed by the lenders, as an example.

MR. RYAN: Okay.

So, maybe if I can just make sure I have your point right. At the point that this document was created, this is not an exhaustive list but merely perhaps already identified entities that will assume risk.

MR. KEAN: Not – it's not meant in the context of as not only assumption but the actual coordination of the management of that risk. Somewhat so, I guess, in the case of those health and safety related risk or reputational risk, it might be – or stakeholder related concerns. That might be managed and coordinated by Nalcor, or ECNL in this case, somewhat by the province and they would be responsible – they would assume that the risk responsibility and the exposure of managing that risk with the parties.

MR. RYAN: Who created this visual?

MR. KEAN: A colleague of mine created this.

MR. RYAN: So part of the Lower Churchill Project?

MR. KEAN: More – part of the team, yes, project team.

MR. RYAN: Why weren't any of the Indigenous governments in Labrador included in this?

MR. KEAN: I don't know.

MR. RYAN: Would you agree that in constructing the Lower Churchill Project, certainly all three of the Indigenous groups, but for my purposes NunatuKavut, assumed a fairly significant amount of risk moving forward.

MR. KEAN: I can't – I don't know.

MR. RYAN: Okay.

You're not familiar at all with the impacts of the Lower Churchill Project to Indigenous groups, the protests that have arisen, the concerns that –

MR. KEAN: Yes, I am, yes.

MR. RYAN: Okay.

So if you take that as good faith, would you not agree that NunatuKavut assumed a fairly significant risk as this project moved forward from the early stages?

MR. KEAN: I don't know the nature of those risks to be able to agree whether they're significant or not. I don't have that – I don't have the technical knowledge –

MR. RYAN: Okay.

MR. KEAN: – or environmental engineering background –

MR. RYAN: So –

MR. KEAN: – to state any concurrence.

MR. RYAN: So you would agree that there are risks but are uncomfortable with the significant portion, is that correct?

MR. KEAN: I'm aware of the discussions regarding the risk and the discussions that have occurred and, of course, those were prominent during the environmental assessment process. But as to the significance of them on any one party, I can't offer any comment because it would not be an informed comment.

MR. RYAN: Okay. But you agree that there are risks?

MR. KEAN: There are different risks that many stakeholders are assuming on this project.

MR. RYAN: Right. Risks that aren't reflected in the high-level documents that inform how the Lower Churchill Project is going to consider quantifying and mitigating risks as the project moves forward.

MR. KEAN: I don't think I agree with you there because this diagram you were referring to doesn't articulate that this is the only approach to managing risk. As we had said, there's risks that impact stakeholders and it's very important to understand those. There's risks that impact health and safety.

So the effort was to identify risks that may impact any of the core objectives. And – be it – we often focused on cost and schedule, yes, but you're – you know – very true there – it could impact a reputation or concern a relationship it may have with a stakeholder. So that, you know, that goes through a process and could be as equally as important.

MR. RYAN: Yes, I take your point that this is not an exhaustive list, but I suppose my point is that it seems quite clear that from the beginning, the Lower Churchill Project identified the important parties that assumed risk. And I put it to you that this is intended to display who the Lower Churchill Project thought would assume the most risk or separate significant amounts of risk. And my question is: Why aren't Indigenous governments included?

MR. KEAN: So the intention when the diagram was put together was to illustrate how, let's say, purest financial risk on completion of the physical construct – project would be allocated to various entities. Not a – more dollar-and-time-related risk, I guess. And it wasn't meant to be exclusionary in any of those health-and-safety-related risks.

For instance, there is nothing there that – there is nothing there about the individual worker, as an example, or the various other stakeholders that may exist in, let's say, the outfitters in Long Range Mountains aren't listed. You know, they are – the degree of importance, of course, I'm not open to discussion on that, it's about – there are many players out there that would be assuming risk, and the diagram's not meant to be exhaustive, I guess, in that regard. It's more the financial- and time-related risk that we were trying to articulate in this visual.

MR. RYAN: Okay.

Madam Clerk, can we go to the next page? And, actually, my apologies, Madam Clerk, I think

the intro line to these dots are – is on the bottom of page 8.

So, Mr. Kean, at the bottom of page 8 here it says: “Each of these parties will play a significant role in the mitigation efforts where possible as well. Some examples are ...” and then some are listed. And under the Province of Newfoundland and Labrador it says, “Risk to be taken on certain aspects of the LCP (i.e.: Aboriginal and regulatory Issues) will be brought to ECNL executive to bring to the province.”

So I would put to you that Aboriginal issues, as this document frames it, were actually quite relevant to the creation of this visual, and were certainly seen, at this point, to be important enough to be referenced by just purely through the lens of the Province of Newfoundland and Labrador.

Is that an accurate read of this – these bullet points?

MR. KEAN: Stakeholder risk is very important; it has been. That’s why there’s been a stakeholder management plan; a lot of focus on understanding the stakeholders and what their challenges and issues and concerns are, early in the project, as I recall.

In terms of those particular, let’s say, Aboriginal concerns that may be, of course, the – I guess it – you know, my understanding, you know, that individuals, senior individuals within the team had close interaction with the province in those areas. But I don’t know any of the details.

MR. RYAN: Okay. I suppose I’ll put it to you this way. Given that, with the benefit of hindsight, we know that there is significant financial and scheduling disruptions to the project because of, what I would term, the fraying of the relationship between NunatuKavut and the Lower Churchill Project, would you agree that an earlier and a more attentive concept of risk that acknowledged the risk that Indigenous governments would take on in the project, might have gone quite a ways into avoiding the eventual negative impacts of the fraying of that relationship?

MR. KEAN: While this document doesn’t speak to it specifically, I don’t know whether, you know, the consideration of those Aboriginal-related risks and the risks that may have been accepted – how those were considered or not, I would not be able to comment on to that very –

MR. RYAN: I take it that you’ve said, both in your interview and also in your testimony and in response to these questions, that you don’t have subject matter expertise in negotiating with Indigenous groups, you don’t have enough information to form an opinion on certain things, you wouldn’t be able to comment with any accuracy on certain points.

I wonder why is that, as deputy project manager of a massive hydroelectric dam project that took place clearly in a very fraught context that involved multiple Indigenous groups and involved multiple Indigenous-led protests, court proceedings – why don’t you have that subject-matter expertise?

MR. KEAN: Well, a megaproject such as Lower Churchill has to have many subject-matter expertise and many skill sets. You know, there are hundreds of people that work together as part of that coordination effort.

There – in that regard, there are people with that that maintain the relationships with various stakeholders, that understand their needs and meet with them, would understand and deal with the risk and so on and ensure that that’s being addressed. That’s just not my area, underneath that. I would be made generally aware of that such – we would have – I know we have that expertise, and those – but it would have line responsibility up to a separate group within the broader project.

MR. RYAN: Okay.

MR. KEAN: Whereas I would be involved in the bricks and mortar.

MR. RYAN: Okay. Do you know – can you give us some names of those people that do have that subject-matter expertise?

MR. KEAN: We had an environmental assessment and Aboriginal manager, Todd

Burlingame, who was there very early. Steve Pellerin, as an example, was another manager successor for him. We had various people in that group that – both from a consultation perspective as well as a, you know, various ongoing relationships with Aboriginal groups. So there was a – you know, it was a multitude of people there that interfaced there – small team.

MR. RYAN: Right. Can you name any more?

MR. KEAN: I recall Mr. Bennett being fairly active in that area – Mr. Gilbert Bennett; perhaps Mr. Brian Crawley for a period of time when he was there, in particular with the Innu Nation relationships. And there are others in the team. I just can't think of the names right now.

MR. RYAN: Sure. Thank you.

Madam Clerk, if we could go Exhibit P-01007.

THE COMMISSIONER: Twenty-three.

MR. RYAN: Page 19, please. And (inaudible) I think the bottom half of the page.

Thank you, Madam Clerk.

So as I understand it, this is the Lower Churchill Project risk management guidelines. And so, again, sort of further down-drilling but still, you know, not a high-level document. And under the heading Tools and Techniques used in a Quantitative Risk Analysis, there are a number of different tools that are listed for, I guess, proponents of projects such as these and the benefits of using these to quantify and to, I guess, discuss how to mitigate risk.

Is that an accurate summary?

MR. KEAN: That's – yes.

MR. RYAN: Okay. So the first one here is Interviewing and I'll just read it out to you here. It says: "Used to quantify the probability and consequence of risks to project objectives. A risk interview with key project stakeholders and subject-matter experts may be the first step in quantifying risks. *It is important to emphasize that the quality of output from the risk assessment is directly dependant on the quality*

of input received during the interviewing stage" And then it goes on.

Are you in a position to say whether any interviews were done with any members of NunatuKavut to quantify risk?

MR. KEAN: No. This – in this regard, as I was the original author, would be in the context of those internal stakeholders' subject matter, so the manager of Aboriginal relationships and so on that you would be gathering that information from, because this would be an internal Nalcor viewpoint.

MR. RYAN: Okay. So when this says, "A risk interview with key project stakeholders" that is not external stakeholders?

MR. KEAN: That's correct. You would look to those internal stakeholders to provide insight as to the viewpoints and concerns and risk associated with external stakeholders that they would be interfacing with.

MR. RYAN: Okay.

And I just would like to take you to one more document. Madam Clerk it's Exhibit P-00097, the Decision Gate 2 strategic risk. On page 65, please Madam Clerk.

MR. KEAN: (Inaudible.)

MR. RYAN: And so this is – as I understand it, part of the strategic risk analysis was an overview of all of the strategic risks that had been identified. And so this is risk R14 under the category of Environmental Assessment. And so, as I understand it, this is a summary of one of the key risks – the key risk being release from the environmental assessment process.

Is that an accurate summary of this document?

MR. KEAN: This particular risk frame, yes, it would have been.

MR. RYAN: Yes, this – just this specific one?

MR. KEAN: Yes.

MR. RYAN: I'd like to get you to look at the Specifics and Root Causes portion.

CLERK: On what page?

MR. RYAN: Sixty-five.

And so just right here it says: “Target date for release of Generation Project from EA” – environmental assessment – “does not reflect probable schedule risk.” And so I take that to mean that there was an assumption made that the environmental assessment process would take a certain amount of time and that it had taken a little bit longer than anticipated and so there was a need to update the target date for release.

Is that accurate?

MR. KEAN: Yes.

MR. RYAN: And it gives the four principal causes. And so now, are these the four principal causes from the perspective of Nalcor, from the perspective of the Lower Churchill Project management team?

MR. KEAN: Lower Churchill Project management team.

MR. RYAN: Okay.

I’d like to just ask you, maybe, to read out principal cause number four for me, please?

MR. KEAN: “Inaction, indecision and political interference as a result of conflicts between Nalcor and Province’s mandates. We are encumbered.”

MR. RYAN: Can you tell me and the Commissioner what – whose inaction was the principal cause of the delay in the environmental assessment?

MR. KEAN: No, I can’t recall the specifics of that. That would’ve been an update and described in more detail between our risk advisor, at that point in time, and the environmental assessment manager.

MR. RYAN: Okay.

MR. KEAN: So I do apologize.

MR. RYAN: So you – just to be clear, you can’t recall the inaction that took place that caused the

delay or you can’t recall who was the cause of the inaction?

MR. KEAN: No I – what I recall from the environmental assessment process that it took much longer for the generation project than intended. And there was some period of time when there was time to get the consultation agreements in place with various stakeholders and so on. And, you know, it just took longer.

I don’t know all of the – the nature of it, you know, as to the interaction between the province and Nalcor in that regard.

MR. RYAN: Okay. So then am I correct in thinking that you also can’t describe for the Commissioner the indecision that was the principal cause of the delay of the environmental assessment?

MR. KEAN: No, I can’t.

MR. RYAN: And you also cannot describe the political interference that resulted between conflicts between Nalcor and the province that caused a delay in the environmental assessment?

MR. KEAN: No, not with any specifics. I just heard in general.

MR. RYAN: What did you hear?

MR. KEAN: Things were going slower than intended, getting the guidelines for the joint panel – review panel took much longer than anticipated and so on.

MR. RYAN: Okay.

MR. KEAN: So – and perhaps Mr. Bennett or Mr. – Mr. Bennett could give more insight. Mr. Harrington may have more insight.

MR. RYAN: Perhaps so, yes. I’ll just try maybe one more question.

The last sentence: We are encumbered. I would suggest to you that that is illustrative of the view that it’s not Nalcor’s inaction, indecision and political interference that is contributing to the delays and that from the perspective of this document – which is from the Lower Churchill Project management team – the province was

encumbering Nalcor through its inaction, indecision and political interference. Is that a fair assessment of this portion of that document?

MR. KEAN: I wouldn't have the contextual knowledge to be able to affirm that.

MR. RYAN: Okay.

MR. KEAN: I wasn't that close to the subject. This would have been an update that was given as part of a risk workshop and by the originator in the team. So that may have been provided by Mr. Burlingame at that point in time.

MR. RYAN: Perhaps I'll just ask this then. The, we, the subject of that sentence – we are encumbered – who's we?

MR. KEAN: That would be LCP.

MR. RYAN: Okay. Thank you.

I just have one more question, Mr. Kean, and that's – I understand that from the documents and from your interview that between DG2 and DG3, the strategic risk assessment of the lack of support from Indigenous groups for the project was set at zero dollars. Is that an accurate reflection of, sort of, the trend from DG2 to DG3, as there was an amount of money, I believe it was \$100 million, set for DG2. But by the DG3 analysis, the amount was set for zero dollars.

MR. KEAN: I don't know the value in that regard for DG2. I can't think, but I just had the binder open. Key risk R18 talks about the support from other Aboriginal groups such as the group you would represent, of course. And, as I understand, there was a lot of work done to bring a level of confidence that we were in good shape from a project perspective and that the – you know, from a representational and stakeholder relationship things had improved.

And it was not necessarily a large financial exposure; it was more of an ongoing relationship. And given some of the investments in Labrador Aboriginal Training Partnership and the participation of groups, it helped, you know. It was helping bring that residual risk value down much lower.

MR. RYAN: And just my last question is: Given all that we know now with the site disruptions, the protests, the injunctions, was it reasonable to assume that that risk had entirely subsided or substantially subsided?

MR. KEAN: In looking backwards from a – you know, I'm looking with a hindsight basis, of course not.

There's been some materialization in the context of, you know, of site disruptions, which have, like, you know, resulted in lost time, cost and so on, there's no doubt. And – but, you know, from a – it's a – and, you know, as to – so, yes, it's very fair to say looking backwards.

MR. RYAN: So can you offer your analysis of why that was missed?

MR. KEAN: No, I can't.

MR. RYAN: Okay.

I'll suggest to you that a review of the policies and philosophies that the Lower Churchill Project used to set up how it viewed risk necessarily hobbled its ability to properly quantify the risk that came from lack of support from Indigenous groups.

Would you agree?

MR. KEAN: No, I don't agree. Otherwise, it wouldn't have been flagged as a strategic risk in 2008 and have gotten a lot of attention and focus. So it was – and even in 2011 it still scored as a medium, I see, in the report.

So it was acknowledged as a very important – of concern. It's a matter of a viewpoint at the time of DG3 of what the exposure was at that point. So it's not a process viewpoint, I don't believe. I believe it's a perspective of – you know, it's a perspective of the risk exposure at that point in time given by the individuals based upon the knowledge that they had.

MR. RYAN: Okay, thank you. Those are my questions.

THE COMMISSIONER: Thank you.

MR. RYAN: You're welcome.

THE COMMISSIONER: Grand Riverkeeper Labrador/Labrador Land Protectors?

MR. SMYTH: Mr. Kean, my name is Jim Smyth and I'm representing the Grand Riverkeepers and the Labrador Land Protectors.

So our clients have concerns – many concerns – including, you know, damage to the river itself, environmental concerns and, you know, safety of users of the river.

So in these – in this hearing I want to address, the question is: What protocol did you follow to, you know, assign a risk – as you said, a risk event – to anything like that? And what methodology would you use?

MR. KEAN: So from a perspective of the aspects of the river, I guess it's multi-phase. Well, you know, you talk – one aspect is, I guess, the environmental concern.

MR. SMYTH: Yes.

MR. KEAN: There is the aspect of safety for users.

MR. SMYTH: Yes.

MR. KEAN: I guess a bit – a little bit – so, you know, there were different considerations. So if I could address the safety aspect, we would be looking at the aspects of the river changes that would've occurred from a design perspective and the implementation of the reservoir (inaudible).

MR. SMYTH: Mm-hmm.

Exactly.

MR. KEAN: And what provisions would have to be put in place to accommodate the public.

MR. SMYTH: Mm-hmm.

MR. KEAN: And what risk that would have in terms of – for individuals that would be using the river. And that's some of the aspects that resulted in the design of, you know, warning the boom system, the signage and so on.

MR. SMYTH: Mm-hmm.

MR. KEAN: I understand the portage route around the Muskrat, around the knoll itself –

MR. SMYTH: Mm-hmm.

MR. KEAN: – those were considerations that would've been – some of the considerations that would've been considered during the design phase.

From an environmental perspective, I understand some of the – as I recall, some of the design in environmental monitoring would ensure that the appropriate data was available, you know, checking the temperatures of the river and so on.

MR. SMYTH: Mm-hmm.

MR. KEAN: And the collection of baseline data and further plans to collect ongoing surveys, so to monitor overall healthiness of the river itself.

MR. SMYTH: Okay.

MR. KEAN: So from a purist perspective of the scope, those would've been the things that would've been considered. In the context of, I guess the risk itself of, you know, various entities or any concerns of local citizens or groups having concerns, that would've been flagged as concerns from other NGOs or other groups that would've had concerns regarding the plans and attentions with the river.

MR. SMYTH: Mm-hmm.

And what about methylmercury?

MR. KEAN: I can't recall – well, I understand, I recollect that methylmercury was a concern that was being addressed during the Joint Review Panel of the environmental assessment when we were doing baseline surveys –

MR. SMYTH: Mm-hmm.

MR. KEAN: – and so on. Of course, once the Joint Review Panel had concluded theirs and environmental reset occurred, that was predicated upon certain conditions being implemented.

MR. SMYTH: Mm-hmm.

MR. KEAN: The cost of those conditions would've been considered in parting – putting together the DG3 baseline budget and any risk beyond that would've been evaluated.

MR. SMYTH: Well, you know, you spoke earlier on of something being a risk event.

MR. KEAN: Yes.

MR. SMYTH: And then that would be entered in, I think, those lines –

MR. KEAN: Yes.

MR. SMYTH: – you indicated and then they would be saying what the risk is, what's the outcome, how to treat it – and at the end of the day. So I believe you said that there's many lines like that, as many as ten thousand in some document.

MR. KEAN: No, that was the schedule when I was referring to those lines, sorry. There would be several hundred risk events.

MR. SMYTH: Okay. So if that's entered as a risk event –

MR. KEAN: Yes.

MR. SMYTH: – you know, what happened with that? I mean, at the end of the day, when you're making your conclusion as to the cost and the scheduling for this huge project –

MR. KEAN: Yes.

MR. SMYTH: – what importance or significance was assigned to that particular thing, like methylmercury?

MR. KEAN: So I can't recall – I can't speak with certainty that there's a risk in the register on methylmercury, for one.

MR. SMYTH: Okay.

MR. KEAN: But in – hypothetically, if there is a risk event associated with reservoir impounding increasing the risk of methylmercury –

MR. SMYTH: Mm-hmm.

MR. KEAN: – in fish and into persons, I guess, it would be a risk that would be looked at. Well, what are we planning to do? What precautions are being taken? Are there, you know, and I – you know, are there advisories – public advisories?

MR. SMYTH: Mmm.

MR. KEAN: Do we understand the baseline situation that exists today? Do, you know – and what measures are being taken? Are they in accordance to standard practices?

And so it would've been looked at from the perspective of do we think we got this mitigated appropriately to a value that's, you know, manageable.

MR. SMYTH: Okay, so the word "value," at the end of the day you're working towards coming to a number. And, you know, you indicated earlier that these risk events can be positive or negative.

So if you take that particular one, methylmercury, did you at the end of the day – I mean, I'm not sure what the process you do it – at the end of the day, do you assign a number to that and add that on to cost?

MR. KEAN: No, Sir. What we do is we go through all the risk events; all the risk events are, first, what we call – undergo a qualitative assessment –

MR. SMYTH: Mm-hmm.

MR. KEAN: – based upon a scoring of potential exposure. Could be –

MR. SMYTH: (Inaudible.)

MR. KEAN: – is it low or is it very high? The probability of that exposure occurring –

MR. SMYTH: Yes.

MR. KEAN: – low, medium, high. That gives a cumulative ranking – if you would. So if you could imagine you had 100 items on that register, you may have 10 that are noted as very high.

MR. SMYTH: Mm-hmm.

MR. KEAN: Then you would look at and say: Well, that's before we respond to that. So we would look at identifying how are we going to respond to that concern regarding methylmercury and we would identify the measures that I mentioned a moment ago. And those measures, of course, would have a cost to do public advisories or to ensure baseline studies done now and ongoing studies in the future. And that would be a part of the, either, capital or operating budgets.

MR. SMYTH: Mmm.

MR. KEAN: Would – the team would then ask themselves do we feel that by undertaking this – these measures we've reduced the exposure level to as low as reasonably practical.

MR. SMYTH: Yes.

MR. KEAN: And that would've been – judgment would've been done by those with the subject-matter knowledge in that area, using that basic process. And so if a risk was reduced to that, as low as reasonably practical, there would not be any identified dollars and cents – or dollars and time residual exposure factored into the DG3 base – or DG3 numbers for the contingency, but it would then be an ongoing – focused on actions that would need to be taken to be able to ensure that risk remains low. So that might be ongoing community discussions, consultation discussion, notifications, different things of that non – perhaps you might say, perhaps non-monetary type –

MR. SMYTH: Okay.

MR. KEAN: – things. That's how we would've considered that.

MR. SMYTH: Okay, so –

MR. KEAN: So no – I guess, just to summarize, there was no big dollar item to say the methylmercury concern, we followed that and equated it was \$10 million or \$20 million –

MR. SMYTH: Yes.

MR. KEAN: – or 5, there is nothing in the numbers, in the contingency, or the base estimate. The only thing that would be in the base estimate would be prudent activities such as, you know, baseline surveys, notifications, collecting data, ongoing stakeholder consultation type of things.

MR. SMYTH: Mmm.

But if you come to the conclusion that it's gonna cost the owner of the project, you know, X amount of dollars every year to deal with that project for the next 40 years, or the – something like methylmercury, is that factored in?

MR. KEAN: There would be a cost associated with, let's say it might be methylmercury, I guess it's – maybe it's hair samples or fish surveys –

MR. SMYTH: Mm-hmm.

MR. KEAN: – or things like that that would be factored into the plan, part of Nalcor's submission to the Joint Review Panel and eventually factor its way into the operating and maintenance cost as an item.

MR. SMYTH: Okay, operating and maintenance, okay.

Okay, just a couple of more. When the Joint Review Panel report was given to Nalcor, you reviewed that?

MR. KEAN: I wouldn't have that it, no, Sir.

MR. SMYTH: Okay.

Were you there when that was presented?

MR. KEAN: I was part of the team at that point in time.

MR. SMYTH: Okay.

That contains a lot of comments about environmental concerns. You know, the government filed a response to that. Did, you know, did anyone in Nalcor prepare a response to that document, and was that information given to you?

MR. KEAN: I don't recall specifically if a response was given. I would expect it would've been, but I don't recall specifically being included in a distribution of that.

MR. SMYTH: Okay.

MR. KEAN: My concern would've been when we prepared the estimate, did the environmental – did the cost estimate reflect the environmental assessment commitments as well as conditions of release, from an estimate perspective?

MR. SMYTH: Yes. But that report suggested a lot of things, so did they factor in to you when you were doing your report – at any time when you were doing separate reports?

MR. KEAN: Well, the – in the case of the base estimate, there is a long list of commitments and conditions coming from the – excuse me – the generation EA that were costed out by the environmental assessment team.

MR. SMYTH: Okay.

MR. KEAN: Costs were associated with those. Those eventually worked their way into the DG3 base estimate, and are, I think, appended to one of the multitude of volumes there as a spreadsheet.

MR. SMYTH: Okay.

MR. KEAN: And the detail of what the particular item would be, as an example.

MR. SMYTH: So last question I have for you: When you go through all your work and all your assessments and come out with a number, and that number is issued on a certain day, is that number then open to constant revision? I mean, you know, if – as events occur, can you plug that into the formula you use to calculate it and then recalculate it?

MR. KEAN: Well, once project sanction occurs, of course, and there's a public announcement of a cost, that constitutes our project baseline.

MR. SMYTH: Right.

MR. KEAN: We – that's built around a scope of work, and that's reflected in our estimate.

MR. SMYTH: Mm-hmm.

MR. KEAN: Every month, there is a review of that done, an overall cost performance, to identify things such as cost trends, potential changes and so on that are factored into a final forecast cost that's issued monthly.

MR. SMYTH: Okay.

MR. KEAN: So that would reflect expected events, and those would occur – and those aren't necessarily always done using a quantitative modelling, but it would be based upon a bit more qualitative. We've identified – for instance, we've identified this issue; it could cost from X to X.

MR. SMYTH: Mm-hmm.

MR. KEAN: And that would be flagged in our cost reporting.

MR. SMYTH: So there's a report issued every month, internally or externally, indicating if we started with 6.2 billion or 7.4 billion, then the next month there would be another report adjusting those numbers?

MR. KEAN: Well –

MR. SMYTH: And every month thereafter?

MR. KEAN: In every – the 6.2 becomes frozen, and in that there's an amount of contingency of 368 million –

MR. SMYTH: Mm-hmm.

MR. KEAN: – so you're focused for the number. Of course, our desire is to get to the end of the job with the 368 million using a drawdown curve to represent changes. But that – those reports that are produced monthly show the drawdown of that contingency or, when it became a point that the 6.2 billion had been exceeded, it would give the future viewpoint of what that would look like, based upon known events and the established criteria for cost reporting.

MR. SMYTH: Okay, thank you.

MR. KEAN: You're welcome.

THE COMMISSIONER: Thank you.

MR. SMYTH: Thank you, Mr. Commissioner.

THE COMMISSIONER: Emera Inc.?

MR. O'KEEFE: No questions, Commissioner.

THE COMMISSIONER: Former Nalcor Board Members?

MS. MORRIS: No questions, thank you.

THE COMMISSIONER: Manitoba Hydro International?

MS. VAN IDERSTINE: Good afternoon, Mr. Kean. My name is Helga Van Iderstine. I'm counsel for Manitoba Hydro International.

MR. KEAN: Good afternoon.

MS. VAN IDERSTINE: Can I have – Madam Clerk, can I have document P-01020, please?

THE COMMISSIONER: 01020. Tab 69.

MS. VAN IDERSTINE: Yes, I think that's it.

Mr. Kean, this is an email, and if we scroll down to page 3 of that document – and scroll down a little further so we can read the text. There we go.

So this is an email from Mr. Bali at Manitoba Hydro in 2008, and he was asking you about how Nalcor looked at contingencies. Do you see that?

MR. KEAN: Yes, I do.

MS. VAN IDERSTINE: And, obviously, he'd met you at a meeting recently and seen how you had – and you had presented on this topic?

MR. KEAN: I know we had met around this time, yes.

MS. VAN IDERSTINE: Yeah. So if we look – go down now to page 5 – sorry, page 4, excuse me.

So on page 4, this is the questions he was asking you, and he put in red, sort of, the areas that he needed answers to. And then if we go down to page 5, this is you providing the answers to those questions.

And so, first of all, what it appears to be, if I understand this right, is a response to him asking you what the contingencies were being used at Nalcor. And you responded with respect: the Lower Churchill Project. Is that correct?

MR. KEAN: Yes.

MS. VAN IDERSTINE: And so if you look under "Business Proposals," you say they are based on a P50.

MR. KEAN: That's what it states there, yes.

MS. VAN IDERSTINE: So estimate – then you say: "Estimate Contingency and Financial Exposure equals" an "amount to get to" a "P50."

And then if we go a little further down on that, you talk about what – the "Management Reserve is to account for Scope Change and to provide a higher level of confidence to account for unknowns including Force Majeure."

MR. KEAN: Yes.

MS. VAN IDERSTINE: Is that the same definitions that you were using in 2012?

MR. KEAN: I think the current definitions are even – the definition from 2008 was more fulsome than that.

MS. VAN IDERSTINE: And then further down you have – if you'd scroll right down to the very bottom, and it's gonna be a little bit hard to see, you've done a little diagram there of "Investment Value = Base Estimate + ... Contingency + Financial Exposure," and I think it says plus management reserve. Is that right?

MR. KEAN: Yes.

MS. VAN IDERSTINE: And so the management reserve, as I understand from that slide, was to be controlled by the Gatekeeper.

MR. KEAN: Yes.

MS. VAN IDERSTINE: And again, is that similar to what the policy was for Muskrat Falls in 2012?

MR. KEAN: No.

MS. VAN IDERSTINE: And what's different in 2012?

MR. KEAN: I guess in the case of the – the project cost estimates in 2012 were comprised of a base estimate, plus the estimate contingency, plus escalation. And the strategic risk was used to quantify management reserve beyond that – beyond the P50 amount.

MS. VAN IDERSTINE: Right.

So if we look now – just reflecting back, you were aware that MHI was hired by the PUB in 2011 to do a CPW analysis comparing the Isolated Island Option and the integrated option?

MR. KEAN: Yes.

MS. VAN IDERSTINE: And were you involved then in providing information to MHI through what was an RFI process – request for information?

MR. KEAN: Yes, I would have been providing information through the PUB process –

MS. VAN IDERSTINE: And –

MR. KEAN: – yes.

MS. VAN IDERSTINE: – do you recall did any of MHI's staff meet with any of your staff to get – gather information?

MR. KEAN: Yes.

MS. VAN IDERSTINE: And so it was quite an involved process.

MR. KEAN: Yes.

MS. VAN IDERSTINE: It took up a lot of – did it take up a lot of your time and your staff's time?

MR. KEAN: Yes, I recall it did.

MS. VAN IDERSTINE: And during that period of time – late 2012 – 2011 through 2012 – that would be at the same time as you were trying to get the information together to complete the DG3 process. Is that correct?

MR. KEAN: Not 2011 as much as into the 2012 period.

MS. VAN IDERSTINE: Yeah, that's what I meant (inaudible) – late 2011, early 2012 – through 2012.

MR. KEAN: Sure.

MS. VAN IDERSTINE: And that was getting the contracts ready to tender, reviewing the areas of risk, looking at all the items that you had listed in those risk registers we've looked at, and that is, I understand, an awful lot of work.

MR. KEAN: Sure, it is – yeah.

MS. VAN IDERSTINE: For you and your staff.

MR. KEAN: Yes.

MS. VAN IDERSTINE: And at the same time, as I understand, through 2012, you'd also brought in Mr. Hollmann to give you, as you talked about, a peer review assessment, and that would involve him interacting with your staff as well?

MR. KEAN: Yes.

MS. VAN IDERSTINE: And at some point during the spring of 2012, I understand there was an Independent Project Review team that was also looking at what you were doing?

MR. KEAN: That was the end of summer –

MS. VAN IDERSTINE: Mm-hmm.

MR. KEAN: – 2012, August.

MS. VAN IDERSTINE: And somewhere in the spring of 2012, I guess – it came out on March 31 – the PUB delivered its report, and that would have been of some interest to you I imagine?

MR. KEAN: I can't recall exactly when they delivered it, sorry.

MS. VAN IDERSTINE: But it was, of course, interest to you, because it impacted what you were doing over the rest of the next few months?

MR. KEAN: Sure.

MS. VAN IDERSTINE: And about the same time you were also, I understand, trying to organize that QRA meeting from May 24 to June 4 with your team and Westney?

MR. KEAN: Yes.

MS. VAN IDERSTINE: And I gather that would be a quite – that's a big undertaking as well?

MR. KEAN: It would have been a chunk of work to be done, yes.

MS. VAN IDERSTINE: So when government proposed having MHI do a further review in sort of late April, early May, what was your reaction to that?

MR. KEAN: I don't recall.

MS. VAN IDERSTINE: Did you think that it was just one more thing to add to your burden of work?

MR. KEAN: Well, I guess you think, but you do what you need to do.

MS. VAN IDERSTINE: Is that a yes? And I'm –

MR. KEAN: No – if the shareholder required it, I'm sure it was prudent at that point. So if it helped –

MS. VAN IDERSTINE: (Inaudible.)

MR. KEAN: – us get through – if it helped us give a level of assurance to move through sanction.

MS. VAN IDERSTINE: I wasn't suggesting it wasn't prudent or that it wasn't a good idea but that it was just adding to one more thing you had to get done that spring.

MR. KEAN: One more thing for the team I guess, yes.

MS. VAN IDERSTINE: And were you aware that – and it – that when MHI had proposed a scope of work, that they'd included looking at strategic – the strategic risk and that that was later taken out when they – by the time they signed the actual contract?

MR. KEAN: No, I wasn't.

MS. VAN IDERSTINE: Did you know at all what the scope was that Manitoba Hydro was to be looking at?

MR. KEAN: I recall some – through this process, I've seen some things where – but I can't recall specifics from back then, no.

MS. VAN IDERSTINE: Would you have been aware of it back then? Somebody would have told you what Manitoba was to be looking at?

MR. KEAN: The general aspect. But I don't think it would get – gotten into the specifics.

MS. VAN IDERSTINE: At least you can't recall now?

MR. KEAN: I cannot.

MS. VAN IDERSTINE: So in the discussions you were having with Ms. O'Brien and Mr. Budden, in particular, you were talking about the meeting you had with MHI in June of 2012. Do you recall that?

MR. KEAN: Yes.

MS. VAN IDERSTINE: Now, that meeting was in St. John's?

MR. KEAN: Yes.

MS. VAN IDERSTINE: You didn't travel to Winnipeg?

MR. KEAN: I did not.

MS. VAN IDERSTINE: And was Mr. Bennett and Mr. Harrington at those meetings?

MR. KEAN: Mr. Harrington would normally be at those.

MS. VAN IDERSTINE: Okay. And you seem to recall Mr. Proteau, Moffatt and Mr. Snyder also being there?

MR. KEAN: Yes.

MS. VAN IDERSTINE: Anyone else from Manitoba Hydro, do you recall?

MR. KEAN: No.

MS. VAN IDERSTINE: And do you have a record of that somewhere that helped you recall those – who was at it?

MR. KEAN: I do.

MS. VAN IDERSTINE: And where is that record?

MR. KEAN: I found it in my email –

MS. VAN IDERSTINE: Okay.

MR. KEAN: – when I went looking for the presentation.

MS. VAN IDERSTINE: And do you have the presentation attached to an email?

MR. KEAN: When I sent the – we got the meeting request initially come – there was a number of people on it.

MS. VAN IDERSTINE: Yeah. Oh, so it was on a meeting request?

MR. KEAN: Yes.

MS. VAN IDERSTINE: All right.

So if you go to – if we can go to P-01019, and that is at tab 68, Mr. Kean.

And this is an email dated June 14, 2012, and if we just scroll down a little bit you see that you're writing to some of the project team and you're talking about the contingency, and that's the re line. You say: "I have just returned from vacation and in the process of catching up on the subject at hand. I will work with Paul to address Ed's latest comments to the deck."

Now, is that the presentation that you were preparing for Manitoba Hydro or some other presentation?

MR. KEAN: No, I understand they were putting together presentations, I guess, for communication to the shareholder.

MS. VAN IDERSTINE: All right.

But it's clear that that is being edited through with Mr. Bennett and you're talking about and trying to explain some of the concerns you have about contingencies. Is that what I understand from this email?

MR. KEAN: The purpose of this email was – of course, other people are involved in preparing briefing material. I think I was asked to provide an explanation as to why the cost changed between DG2 and DG3. And, of course, factored into this was that situation where the 6 per cent had been removed for strategic risk exposure in the previous – in the fall of 2010. And I was trying to remind people that we had had several meetings on the aspect of reviewing the estimate and the overall strategic risk exposure to make sure people were aware that that still exists.

MS. VAN IDERSTINE: Okay.

So if we can look at – now go to document 00763 – P-00763, and I don't think that's on your list here, so you'll have to just look at the monitor to see that one.

So this is the email from Mr. Bennett to Mr. Wilson and as you see – and it's dated August 14, 2012. And in it he's attaching the report from Westney. But let's first read, he says:

"Paul,

“As discussed, attached is a copy of our risk review. Please note the document is proprietary and confidential.

“Regards,

“Gilbert”

If we slide down through just so – to go through the email chain, you will see that you were part of that email chain at one point.

MR. KEAN: Yes.

MS. VAN IDERSTINE: But if we can stop there for a second.

Some of the dates are important. Do you see that in June of 2012 that some of these email chains starts? And it always re this LCP Estimate Accuracy Analysis – see that?

MR. KEAN: I do, yes.

MS. VAN IDERSTINE: Okay, so let’s move down again a little further. And you have – this is an email from you to Paul Harrington. And again, this is on June 19 and you’re referencing this document. You’re saying, “This is the final report for the Estimate Accuracy Review.” See that?

MR. KEAN: Yes.

MS. VAN IDERSTINE: Okay, so keep in mind this is the document that goes to Manitoba Hydro and it’s the one that Manitoba Hydro had in its records. If we can go down a little further, go all the way down, and this is the document; we can stop there. And do you see this is a Westney Consulting Group document with Nalcor Energy on it as well.

So was this produced by Nalcor or Westney?

MR. KEAN: This was produced by Westney.

MS. VAN IDERSTINE: This is what was provided to Manitoba Hydro. Now let’s scroll down – and so the date is May 23 to June 4 – sorry, before we leave that. That’s from your QRA meetings in the spring.

MR. KEAN: That’s from the, I guess, the QRA workshops through to when the final – or this run of data was available for use.

MS. VAN IDERSTINE: Now, if we could go through it slowly, but in this document that was provided to Manitoba Hydro there’s nothing – Manitoba Hydro International, excuse me. There’s nothing, as far as I can see in it, that references the 497 million or the strategic risk. So if you want to take a moment to look through it, or are you familiar with it?

MR. KEAN: I am familiar with this document.

MS. VAN IDERSTINE: And you will agree that’s not in that document?

MR. KEAN: Correct.

MS. VAN IDERSTINE: If we can look over now to document P-00818. Again, I don’t think that’s in your tab either, so...

So this is the one that was brought up and raised with you by Ms. O’Brien earlier, and as well as Mr. Budden, and this is one again, dated August 7 and it’s just before they were about to forward some information to Manitoba Hydro. And this is the one that talks about something being taken out of the document.

Now, if we just scroll down to this document – through this document, and just stop again there, stop. Thank you. You will see again this is you – there is an email from you forwarding to Brian Crawley on June 19, 2012. Now, this would be around the time that Manitoba Hydro was meeting with you.

MR. KEAN: Correct.

MS. VAN IDERSTINE: Okay, if we scroll down – now, see it says: attachment DG3 update to MHI 17 June 2012, deleted by Paul Harrington. And then we go through, and this is the DG3 estimate overview, and we’ve talked about how the – page 12, of this one, with respect to the strategic risk was removed.

So it appears to me that if you’re thinking about the fact that scope of the review that Manitoba Hydro was to do for this project did not include strategic risk, that it would be reasonable to have

removed that in doing a presentation to Manitoba Hydro in June of 2019. Wouldn't you agree?

MR. KEAN: It would be reasonable, yes.

MS. VAN IDERSTINE: And again, this report is not the same one as was circulated later to Manitoba Hydro by email, but it's very similar in its content, do you agree?

MR. KEAN: I believe so.

MS. VAN IDERSTINE: Yeah. And this one – because this one is on – quite clearly on Nalcor's letterhead and prepared by Nalcor.

MR. KEAN: It includes more than the Westney report.

MS. VAN IDERSTINE: Thank you.

Those are my questions.

THE COMMISSIONER: All right. Nalcor Energy?

Just before we start, how are you doing? I know this is a long day for you. Did you – are you okay –

MR. KEAN: Oh yeah, I'm good.

THE COMMISSIONER: – to keep going?

MR. KEAN: Yeah.

THE COMMISSIONER: If you need a break, just let me know.

MR. KEAN: Thank you.

THE COMMISSIONER: Mr. Simmons?

MR. SIMMONS: Mr. Kean, the Commissioner has taken my first question. I was going to ask you the same thing as to how you're holding up here today.

THE COMMISSIONER: Great minds think alike.

MR. SIMMONS: They do.

My questions are not going to be as well organized as I'd like. They're going to be a bit more haphazard, because you've been here for two days, questioned by many people on many different topics. So I am going to be bouncing around a bit, and hopefully we can both keep our attention focused and get through as quick as we can.

I want to go to P-00897 first, please, which was the Risk Management Philosophy document that you were questioned on a short time ago by Mr. Ryan.

THE COMMISSIONER: Tab 22.

MR. SIMMONS: Page 8, I think, is where the circle diagram was that you were referred to. Stop there. It says it's Figure 4.3 Parties to Risk Allocation. So let's go back up to page 7, the previous page, please. Scroll down, can you? Okay, stop there.

And it says: The risk resolution strategy chosen may be either of: avoidance, mitigation, allocation or acceptance. Now, without going through this whole document here, at this point is – what's happening here is that you're describing the philosophy for what you do once you've identified a risk that may have some adverse effect?

MR. KEAN: Yes.

MR. SIMMONS: Okay.

And there are four things you can do: Avoidance, mitigation, allocation and acceptance. And go to the top of the next page, please.

Then it says: "In the allocation strategy" – allocation being one of those four things you do to manage a risk – "the parties who are likely to assume some risk for the project along with 'indicative' risks they would own a share of are" – and it's listed those parties there. Those are the same ones that are shown in the circle diagram, correct?

MR. KEAN: Yes, they are.

MR. SIMMONS: So is that diagram meant to show parties who might be allocated

responsibility for dealing with a risk that's been identified?

MR. KEAN: Not necessarily the responsibility. Well, yes and no, I guess, per se, because –

MR. SIMMONS: Okay.

MR. KEAN: – at the end of the day, if the risk is transferred or allocated to a lender, let's say –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – the lender has a responsibility to manage his or – their own interest, therein.

MR. SIMMONS: Right.

MR. KEAN: Likewise, if a – but we as the – Nalcor as the entity still has that responsibility to ensure that the obligations and the loan covenants and so on are kept.

MR. SIMMONS: So the parties that are shown in the circle diagram a little lower are parties to whom there would be a decision made to allocate a risk, to say this risk was being borne by this party –

MR. KEAN: Sure.

MR. SIMMONS: – or dealt with, or something about it.

MR. KEAN: That's correct.

MR. SIMMONS: The intention is not to identify parties that may be affected by the materialization of a risk, correct?

MR. KEAN: That is correct.

MR. SIMMONS: So if there are Aboriginal governments or Aboriginal parties who might be affected by the materialization of a risk, their exclusion from this diagram is not saying we're not recognizing that.

MR. KEAN: Of course not.

MR. SIMMONS: It's just saying we're not allocating that risk to them for them to bear.

MR. KEAN: That's a very good point, yes.

MR. SIMMONS: Okay, all right. Thank you.

Now, I think most counsel have questioned you about the Validation Estimating report and the quote that was taken from that report and used in a presentation. I do have to go back to it for a moment because I think there's a little bit of context that I think it would be fair to bring out.

Can we go to P-01008, please?

THE COMMISSIONER: Tab 56.

MR. SIMMONS: Page 37, please. So this is the page you've been taken to before, which has the quote that was taken from Mr. Hollmann's report of Validation Estimating. So let's go back up to page 33 and we'll just go through the few slides that lead up to this slide.

So slide 33 is dealing – it says: The cost estimate is composed of three primary components. It recognizes the base estimate, the estimate contingency and the escalation allowance.

Go to slide 35, two slides over. Thank you.

So two slides over you're – you've got a slide which deals with what the base estimate is made of, how it's developed. And it sets out the four inputs and includes a lot of detail about the buildup to the base estimate.

And then go to the next slide, 36. This approach and methodology – is this the approach that goes into the buildup of the base estimate?

MR. KEAN: Yes, it is.

MR. SIMMONS: And then we come to 37 and 37 says: Third Party Validation. And the quote there is: "... the LCP Gate 3 estimate in its current state is one of the best mega-project 'base' estimates that this reviewer has seen in some time."

So, at this point, was this quote included just as to provide the commentary that had been provided by Mr. Hollmann on the base estimate part of the development of the entire capital cost estimate?

MR. KEAN: It was, which aligns with Mr. Hollmann's scope.

MR. SIMMONS: And just to go to the next slide then, 38. Then the presentation goes on and starts to deal with contingency.

MR. KEAN: That's correct.

MR. SIMMONS: Right.

So in looking at this presentation as a whole, is it fair for us to say that Mr. Hollmann was presented as commenting on anything more than the base part of the estimate?

MR. KEAN: Only the base.

MR. SIMMONS: Okay.

You were also asked why when the Westney group people were in working on their risk work in spring, I think, of 2012 – why you didn't give them a copy of Mr. Hollmann's report. Was there – and if – would you have considered it appropriate to provide one consultant who's doing a body of work, looking at risk, with another consultant's report that had already passed opinion or comment, good and bad, on the similar work to what that consultant was doing?

MR. KEAN: Typically not because it might be infringement on a consultant's, you know, basic methodology, work methods of undertaking such a review.

MR. SIMMONS: Right. Would there be –

MR. KEAN: (Inaudible) there it could be – they are competitors.

MR. SIMMONS: Would there be any concern about compromising the independence or the unbiased approach that the Westney group would be taking to their review if they were provided with Mr. Hollmann's comments, positive or negative, on the estimate –

MR. KEAN: That is –

MR. SIMMONS: – and the risk.

MR. KEAN: That could very well occur, yes.

MR. SIMMONS: Okay.

So you've been asked a number of questions about the degree of completeness of the engineering work at different stages in the lead up to sanction in December of 2012. And in different reports we see comments about the percentage completion of the engineering work. And I believe, if I'm right, you've told us that that percentage was determined based on the amount of effort measured in work hours that had put in – been put into the engineering work compared to the what the total of that work was expected to be.

MR. KEAN: Yes.

MR. SIMMONS: So we've got that right? So it's just – it's kind of a linear measure, how far along are we in doing the total amount of the body of work that needs to be done.

Measuring the percentage completion in that way, does that tell us much about the significance or importance of the engineering work that's been done at any particular stage?

MR. KEAN: Well, the – just to confirm there, the measurement also would be reflective of the earned progress based – of the deliverables based upon what we call as rules of credit.

MR. SIMMONS: Yes.

MR. KEAN: So if an engineering drawing or an engineering design product is to be completed, how far along is that? Is it 50 per cent complete (inaudible) –

MR. SIMMONS: Mm-hmm

MR. KEAN: – we get some earning of credit for that.

MR. SIMMONS: Mm-hmm.

MR. KEAN: That would be rolled up to give you a cumulative credit across everything.

MR. SIMMONS: Okay.

So it's a more complicated measure.

MR. KEAN: It needs to be for traceability.

MR. SIMMONS: Right.

So for the purpose of defining a base estimate, of estimating the cost of doing the work that's going to be necessary to complete the engineering design, what is the more important contributor to the estimate? Is it the early engineering work, which goes into the larger conceptual design, or is it the later engineering work, which is going to be filling out the final details?

MR. KEAN: It's certainly the early – it's the premise level and early deliverables that shape the overall facility and the design parameters – design – the features of that asset, yes.

MR. SIMMONS: Right.

MR. KEAN: Early engineering is key.

MR. SIMMONS: So how far along would you expect to be using your percentage measurement before you reach the point where you are – where you had the kind of information that you needed to be able to do reliable work on the base estimate?

MR. KEAN: Well, prior to – prior to 2013, I think, there was no particular cost estimating classification system that said – that gave some guidance to say that to prepare a Class 3 estimate you needed to have engineering deliverables, the following.

MR. SIMMONS: Mm-hmm.

MR. KEAN: So in that regard it was based upon the experience of the team – you know, the engineering team, SNC-Lavalin, our own people with knowledge therein – to look at do we have all the premise-level things? Do we have the structural layout? Do we know the fundamental quantities? Do we have geotechnical data?

MR. SIMMONS: Mm-hmm.

MR. KEAN: Do we know the type gates, you know, the sizing of gates, you know, the sizing of all the structures? So those things would be identified early and used as inputs into the estimate in defining what you would need.

MR. SIMMONS: Hmm, right.

So in order to prepare the base estimate you need to know the general layout description of the work that you're going to build. You'd need to know something about the quantities of materials that you're going to use.

MR. KEAN: Yes.

MR. SIMMONS: And you'd need to know something about what the work process is going to be in order to estimate the amount of labour to go into it.

MR. KEAN: That's correct.

MR. SIMMONS: Is that correct?

MR. KEAN: Yes.

MR. SIMMONS: And by the time you had your estimate from SNC and had worked through the process of – with the combined team to complete that estimate work, I think, in April of 2012.

MR. KEAN: By the end of June.

MR. SIMMONS: (Inaudible.)

MR. KEAN: By the first part of June, sorry, of 2012.

MR. SIMMONS: How well-defined then was the engineer – was that type of engineering work that you needed to have in place in order to do a reliable base estimate?

MR. KEAN: Extremely well-defined.

All the – from a Muskrat Falls generation a 3D model existed showing all the individual pours and geometry of those pours, all labelled individually. You could – just like a mechanical set – a Meccano set, you could build it. And those quantities have largely held consistent right through the design, through the execution phase. No real optimizations. So concrete and all bulks were, in terms of steel, concrete volumes, rock excavation, geotechnical parameters in river conditions were pretty well known because all the baseline geo-surveys and drilling had also been done. So, in that regard, well-defined in terms of the key parameters that influenced the estimate

MR. SIMMONS: What sort of engineering work remained to be done after that? What types of –?

MR. KEAN: Typically more of the bulk – some of the details. So, for instance, in terms of the power plant, inside the plant itself for Muskrat Falls generation, it would be some of the electrical and mechanical auxiliaries. You know, how much you – up to that point you would've had a viewpoint on historical jobs of how much pipe below eight inches that you may have – eight inch diameter.

MR. SIMMONS: Mm-hmm.

MR. KEAN: But as time progressed through 2013 and 2014, SNC, of course, would've – the engineering teams would've done all the 3D modelling and did all the piping take-offs; the cable trays and so on. But up to that point in time, we were using – we had our larger runs but more – it's more you made some assessment based upon historical but it's not – it's not a major cost element in any event in a powerhouse.

MR. SIMMONS: Mm-hmm.

MR. KEAN: But the – all the premise design would be done.

MR. SIMMONS: So at the point when you lock down the base estimate, with that sort of engineering work left to be done, how much risk was there that the definition of that engineering work would change the cost estimate at that point?

MR. KEAN: Very limited, which is consistent with my statement that definition has not been an issue at Muskrat Falls generation.

MR. SIMMONS: Okay.

Now, I think you were asked for some information about what the percentage completion was at the point of where you had the base estimate in the spring. So, I can bring you, please, to Exhibit P-00094. It is –

THE COMMISSIONER: Tab 36.

MR. SIMMONS: – tab 36.

So this is the DG3 Basis of Estimate document, and we'll jump to page 27, please. Scroll down – oh, sorry, just up a little bit.

This is a table, it says 10.1: Project Cost Estimate – Attributes and Characteristics. Scroll down, please. Okay. Is this 27? Yes, stop there.

There's a block there that has Project Definition on the left, it says i.e. level of engineering design complete. And item v is – it's got the number v, it's actually the fourth one –

MR. KEAN: Yeah.

MR. SIMMONS: – says: "Expended engineering effort from 30% to 40% of total."

Okay. So does that match your –

MR. KEAN: That –

MR. SIMMONS: – conception of where it would have been at that time?

MR. KEAN: That would have been a plan intention of how we would have –

MR. SIMMONS: Okay.

MR. KEAN: – (inaudible) been striving and I think earlier I said we were likely in that 40 per cent range.

MR. SIMMONS: Okay. Let's go to page 149, please.

This is a section 25.12 dealing with Powerhouse Superstructure, and scroll down – you can stop there. There's a number of bullets there. The first one says: "Quantities are based on 40% engineering progress, as of 24 November, 2011." So for the powerhouse, the engineering work was 40 per cent as of November 2011, is that correct?

MR. KEAN: That's what it's stating there. I'm – when I gave the 40, it was like the (inaudible), the odd, it's the blended overall –

MR. SIMMONS: It's the blend overall.

MR. KEAN: – across the project.

MR. SIMMONS: Yeah.

So for this particular instance it's a 40 per cent there –

MR. KEAN: Yes, in –

MR. SIMMONS: Sorry, go ahead.

MR. KEAN: Yes, in November, that's what it states.

MR. SIMMONS: And we'll go to page 180, please, for another example.

This is actually in the section dealing with HVDC specialities. If you scroll down – stop please – up a little bit. Again, the first bullet: “Quantities are based on 40% engineering progress” – this time – “as of 5 December, 2011.”

So if we were to go through this document, we could assess what the state of advancement was of the engineering at different stages in the – for different areas of work in the project, could we?

MR. KEAN: That's part – yes, that's part of the way I try to articulate where things – what the basis of the numbers are.

MR. SIMMONS: Okay.

Now, the engineering work continued to progress right up to the point when the sanction decision was made in December of 2012.

MR. KEAN: Yes.

MR. SIMMONS: And we've heard mention that as of that time the engineering work may have reached about 53 per cent done. Now, even though the base estimate was set earlier in the spring, was there the continuing work to improve the amount of engineering work done and to add more definition, how would that then contribute to the decision-making around sanctioning the project in December of 2012?

MR. KEAN: The sanctioning decision from our project team perspective was based upon achieving a number of deliverables.

MR. SIMMONS: Yes.

MR. KEAN: And there was a key deliverable list. And those deliverables – and a full spectrum of things, not only the estimate and schedule, but a lot of management plans, labour relations agreement executed, for instance, you know, environmental assessment release had to be occurred; a whole host of things. So in the context of, you know, we use the word engineering, but it's often more than just the pure design elements when we speak globally, so it would be things like having pre-qualified suppliers and those type of things available.

A lot of that would have been building towards a recommendation that we'd made in that November period of 2011, of a declaration of readiness to move – or 2012 – declaration of readiness to move forward at DG3. We would have scored, you know, based upon the individual deliverables, outside the cost estimate how ready we were. So all that would have been a factored into that decision – I guess that declaration, we say, that we're ready to move forward, from a project team perspective.

MR. SIMMONS: Hmm.

So even though the advancement from about 40 per cent of engineering work complete, according to the measure you've described at 53 by sanction – from the spring of 2012 – the sanction, even though there was no change in the base cost estimate, you're saying that the other engineering work included within that description contributed to the knowledge that allowed the evaluation of whether the project should be sanctioned.

MR. KEAN: Yes, and part of the reason is that we had to just cut off at a point in time to freeze an estimate provide for that economic evaluation process –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – but of course we were still continuing with engineering.

MR. SIMMONS: Mm-hmm.

MR. KEAN: And all the other planning activities and so on that we would do up 'til such time as we were ready to move through that Gate. It's an ongoing thing.

MR. SIMMONS: Okay.

All right, so you were asked a question arising out of the report that was done at the beginning of this Inquiry process by Professor Flyvbjerg and you were brought to a section of his report that described the percentage of projects, megaprojects that suffer from project delays and cost overruns. I believe you were asked if you were aware that there's a history of megaprojects suffering from cost overruns. I believe you said you were.

MR. KEAN: Yes, very much so.

MR. SIMMONS: Yes. And you were aware at the outset of your work on the Lower Churchill Project that there is a history of projects like this having problems with cost overruns and schedule delays.

MR. KEAN: Yes, very much so.

MR. SIMMONS: Okay. So does that mean that it is inevitable that a megaproject is going to be over budget?

MR. KEAN: No.

MR. SIMMONS: So knowing that that is a risk and that is a problem, how did that factor into your work – right from the start on this project – where you were involved in setting up the governance structure, the significant project documents, the methodology in which estimating and risk was going to be carried out? Is that something that you sort of carried through in that process?

MR. KEAN: There were a number of us that espouse the philosophy of acknowledging that projects can go bad and focusing there on it.

Early in 2007 – in the fall of 2007, I brought – I asked IPA to come in to give a megaproject seminar. We had a growing team at that point in time and I wanted to make sure there was some sort of level understanding of some of the challenges that are associated with megaprojects. Some of us had had previous experience with IPA and some of their studies and so on, and we, you know, it was recognized, and we wanted to make sure – it was a bit of a training program. Not – level setting, providing

people with knowledge. And, of course, that process and the engagement of specialists and advisors and knowledge from outside the team, outside the province and outside the country, often, you know, was directed towards gathering as many lessons learned and knowledge –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – in an effort to ensure our project didn't go off the rails.

MR. SIMMONS: Right. And even though there is a percentage that have, there's a significant percentage that have not, that have been successful and have been on budget.

MR. KEAN: And successes, we often think about budget, but there are many other elements.

MR. SIMMONS: Yes.

MR. KEAN: Safety is number one.

MR. SIMMONS: Right.

And I understand from your evidence that, if I could describe in a general way the approach to wanting to manage risk and reduce the risk of there being, you know, schedule and budget problems and other types of problems on the project. First would be to identify the risks, to try and find out what they are.

MR. KEAN: Yes.

MR. SIMMONS: Second then is to try and quantify them so you can tell which are the significant risks, the ones that are likely to be the biggest problems and probably being the ones that need the most attention. Is that –?

MR. KEAN: Could also have a ranking, yes.

MR. SIMMONS: Ranking.

And then you will mitigate, which is to identify the ways you can do things to either eliminate the risk, moderate it or even allocate it somewhere else, if that's (inaudible).

MR. KEAN: Yes, a responding process there, yes.

MR. SIMMONS: Yeah, yeah. And is that something that just happened now and then, during the process since you were involved, from the start of this project, or was this a continuous process of risk identification, quantification and, in particular, risk mitigation throughout?

MR. KEAN: So I would – that’s an ongoing thing. We tried to espouse and engrain in a culture, that’s part of the reason we had a risk policy written and put on the wall, as you would next to your health and safety and –

MR. SIMMONS: Mmm.

MR. KEAN: – environmental policies. We were trying to really promote that. So it was an ongoing thing. And really it – you know, part of the reason we engaged in a third party specialist, Westney, was to make sure we were as holistically bracing those background systemic or strategic risks to the best degree possible –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – to make sure we had, again, more knowledge –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – that would be available. But it’s an ongoing thing. And the risk management process drives – particularly in this period of time, prior to DG2 and then up to DG3 – it drives a lot of the work plan. It drives your execution strategy, the way you approach your business.

MR. SIMMONS: Mm-hmm.

MR. KEAN: And maybe the, you know, your contracting strategy, your engineering strategy and even your construction execution methodology. It’s your recognizing that things can go wrong. And there are some opportunities out there.

MR. SIMMONS: Mm-hmm.

MR. KEAN: And that’s the philosophy we espoused. And our measurement of that became somewhat of a front-end loading measurement.

MR. SIMMONS: Yes.

MR. KEAN: You know, this FEL measurement. Try to get an indication of where we stood. That’s why it was so important at Gate 2 to understand where we were with IPA.

MR. SIMMONS: Mm-hmm.

MR. KEAN: And we felt quite strong where we were and we’re on the right track.

MR. SIMMONS: You were asked a question about the Nalcor’s enterprise risk register. And I think he was trying to understand how – what risks would find their way into the corporate register, that would be a register maintained at a higher level in the company, rather than within LCP.

If we can look at Exhibit P-00130, please? This is the Decision Gate 3 Project Cost and Schedule Risk Analysis Report. I think this is the one sometimes referred to as a QRA that you are an author of.

MR. KEAN: Yes.

MR. SIMMONS: And there is – the enterprise risk management report is appended to this at – if we can go to page 93, please? There are various attachments and appendices. This one is Nalcor Energy – LCP – ERM Risk Register for December of 2011.

Scroll to the next page, please, 94, okay. And go down one more page, and then one more. One more again. Here we are. So this is – the print is very small. It’s not very readable on the screen.

Is this the enterprise risk management register that you were referring to?

MR. KEAN: Yes, it is, for LCP’s portion.

MR. SIMMONS: Okay. So this is the portion LCP contributes to the corporation-wide enterprise risk management register. And if we need to we can enlarge this and we can look across a row if you need to.

And my question is: Are the risks in this register quantified in dollar terms at all?

MR. KEAN: No, they're not.

MR. SIMMONS: No, why not?

MR. KEAN: Because the methodology from a enterprise risk management perspective was to describe the risk and use a qualitative ranking system –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – for prioritization of risk based upon high, medium and low – if you might –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – and which is typically common for most, you know, risk register type set-ups for enterprise risk management.

If there was a risk that had some financial exposure that came out of that, that would be considered as part of a quantitative assessment –

MR. SIMMONS: Right.

MR. KEAN: – that would occur.

MR. SIMMONS: Right.

So this risk management register – enterprise risk management register, would I be correct in thinking that the purpose of this is to make sure that corporate-wide risks are identified and that it is – and how they are being mitigated and tracked is recorded here, but it is left to the business units to quantify what that risk may mean, in their operations.

MR. KEAN: And also left – yes, but also left to the business unit to ensure that they're being managed.

MR. SIMMONS: Yes. Okay.

And that management is reported up higher in the organization through this enterprise risk management –

MR. KEAN: And –

MR. SIMMONS: – register.

MR. KEAN: – yes, and with various oversight and assurance checks by corporate enterprise risk management people.

MR. SIMMONS: Okay.

And has – this was in place, obviously, in September 2011 – 'cause this one says updated September 2011 – had this been in place throughout your time at Nalcor Energy, or was this introduced at some point?

MR. KEAN: This was introduced maybe 2009, 2010 –

MR. SIMMONS: Okay.

MR. KEAN: – timeline.

MR. SIMMONS: Okay.

MR. KEAN: A bit after we had kicked off a lot of our risk work.

MR. SIMMONS: Okay. Thank you.

You had mentioned a couple times that there were check estimates done for the – and I'm sorry to be bouncing around, back to the estimate again – but for the base estimate that had been done by SNC and then completed by the integrated team in the bullpen that we heard about from Mr. Lemay.

You said there were a couple check estimates done, and I believe you said they were done by Mr. Paul Hewitt and Mr. John Mulcahy?

MR. KEAN: For the generation component, but also for different – I had – there was a separate check estimate done for the reservoir clearing.

MR. SIMMONS: Okay.

MR. KEAN: Separate check estimate done by Mr. Des – the late Mr. Des Butt for transmission lines and switchyard civil.

MR. SIMMONS: Okay. And what was the purpose of doing those check estimates? What were they – what information were they meant to provide you?

MR. KEAN: Well, the estimators would've had access to the same base quantities, and they would have some flexibility on – and the same labour rates and pricing inputs, such as Portland cement, as an example, or –

MR. SIMMONS: Mmm.

MR. KEAN: – price of steel.

MR. SIMMONS: Mmm.

MR. KEAN: They would've – so we would try to normalize those inputs, but they would have their own – they were trying to bid – prepare an estimate as a contractor was bidding. Each of these gentlemen were experienced as contractors.

MR. SIMMONS: Mm-hmm.

MR. KEAN: You know, they're all with 40 years of experience each. So they were trying to use their own means and methods, take – as if we were bidding the job. They would take the information, they would prepare their estimate in isolation –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – and they would come together and have discussions at the end of the day to talk about that.

MR. SIMMONS: Almost like a mock tender.

MR. KEAN: Yes, you could call it that.

And we would – when a tender would – or a bid would go out, we'd also prepare our own internal check estimate at that point in time –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – to balance against what the bidder might submit.

MR. SIMMONS: Right.

Now, Mr. Mulcahy, you mentioned, he's – you said about 40 years experience. He was president of McNamara Construction, I believe.

MR. KEAN: Yes, he had a lot of experience with Atlantic Canadians and also, you know, working underneath the collective agreement structures that we had in Newfoundland and Labrador.

MR. SIMMONS: Did you know anything about his experience in hydroelectric power plant construction?

MR. KEAN: I understand he's built, like, 14 or 15 smaller plants, and some good size. But he's also done things like the Bull Arm site development and quite an impressive pedigree.

MR. SIMMONS: Okay.

Okay, P-01006, please.

THE COMMISSIONER: Tab 55.

MR. SIMMONS: You've been referred to this before. This was the presentation done by some members of the project management team to Grant Thornton, and if we can go to page 2 to the disclaimer that you'd been referred to earlier. And if I understand correctly now, you didn't prepare this –

MR. KEAN: No, I did not.

MR. SIMMONS: – and you weren't actually present for the presentation of it.

MR. KEAN: I came in, I think, midway. I think it might've occurred over a couple days.

MR. SIMMONS: Yes.

MR. KEAN: I came in late on day one, I think.

MR. SIMMONS: Did you have a chance to review it prior to its finalization, before presentation?

MR. KEAN: No.

MR. SIMMONS: No, okay, all right.

There's a reference here in the third bullet to the consultants having "prepared a more comprehensive document addressing the project phases."

Is that – are those the papers that we – you’ve been – that we have in evidence here dealing with the pre-sanction phase, the sanction phase and so on?

MR. KEAN: Yes, it is.

MR. SIMMONS: Okay, so those papers would be subject to the same disclaimer that’s presented on this slide here, would they?

MR. KEAN: I – yes, it’s –

MR. SIMMONS: Okay.

MR. KEAN: – purely the project team’s viewpoint looking backwards.

MR. SIMMONS: Okay. And just a couple questions on terminology.

If we go to page 6, the gentlemen who were involved in the presentation of this – of these slides are there, and you’re listed as the last name there.

When we speak of the project management team, is that a single unitary group that we can always know who it is when we talk about them, or is there some flexibility when we have that term about who we may be considering as part of the team and not?

MR. KEAN: Well, as you can probably gather over the duration of the project, it’s fairly dynamic.

MR. SIMMONS: Yes.

MR. KEAN: Particularly in the case of 10 years. There are some constant people that have remained.

MR. SIMMONS: Yes.

MR. KEAN: But, of course, there are people – this is just a subset of the project management team. There would be –

MR. SIMMONS: Mm-hmm.

MR. KEAN: There have been – maybe 50 per cent of the overall membership.

MR. SIMMONS: Right.

And, similarly, when we see reference in these documents to the Nalcor executive, and you’ve been asked some questions about particular references there, and you’ve said, well, no, that’s Mr. Bennett and Mr. Martin and maybe not Mr. Sturge, or depending on the circumstances, that may actually be different collections of people when you say –

MR. KEAN: Yes.

MR. SIMMONS: – Nalcor executive?

MR. KEAN: That’s correct. For instance, if it’s labour relations, labour regarding, it would include, typically, the VP of HR and OE.

MR. SIMMONS: Right. So in these documents, we should take some care when we see Nalcor executive referred to, not to presume that it’s any particular collection of people?

MR. KEAN: Yes, that’s correct.

MR. SIMMONS: Okay.

Exhibit P-00944, please.

THE COMMISSIONER: Tab 27.

MR. SIMMONS: Mr. Kean, I understand this was a short document that you submitted to Commission counsel after their interview of you, is that correct?

MR. KEAN: After day one of my two-day interview, I –

MR. SIMMONS: Okay.

MR. KEAN: – put these thoughts together.

MR. SIMMONS: Right. So this one is headed: Management Reserve. It’s a couple pages long. And I just wanted to use this as a guide just to ask you some questions about this.

So, in the second paragraph there you say that: “Having reflected on our discussion, I would like to clarify my understanding and reaffirm the basis used as input to the DG2 CPW analysis.” So this document was intended, was it, to clarify

or elaborate on some discussion that had happened in the interview about what inputs were to the CPW analysis at the DG2 stage?

MR. KEAN: Yes, and looking at this, maybe that should've said DG3.

MR. SIMMONS: DG3 – okay.

MR. KEAN: Yeah, I just –

MR. SIMMONS: At the bottom part of that page, you've got a definition there of contingency, which you say is taken from AACE International?

MR. KEAN: Yes.

MR. SIMMONS: And we've heard – I think we've seen – some varying ways of describing what is a tactical risk, what is a strategic risk, what is a contingency, what is a management reserve, what sort of things are taken into account.

Are there really hard and fast definitions about those things in the industry or is there some flexibility depending on who you're talking to and what your source is about what you consider under those headings.

MR. KEAN: There is some flexibility and, I guess, viewpoint. If I go back – and like PMI used to refer to AACE for that clarity.

MR. SIMMONS: Mm-hmm.

MR. KEAN: AACE has been in, you know, for 50-odd years, there's an – you know, trying to bring together viewpoints and, you know – but I think, generally, this is generally the recommended viewpoint on what contingency is.

MR. SIMMONS: Mm-hmm.

MR. KEAN: And I would consider – I always consider AACE to be, you know, authoritative in this area because I look at – we talk about Mr. Hollmann or Mr. Westney and the people like that have a lot of experience in contributing to it over the years.

MR. SIMMONS: Right, so the AACE definition of contingency, I think, is the one you've quoted here.

MR. KEAN: Yes.

MR. SIMMONS: Starts out saying it's an amount added to an estimate to allow for particular things. And it says, or effect – “that experience shows will likely result, in aggregate, in additional costs. Typically estimated using statistical analysis or judgment based on past asset or project experience.”

So when you're determining a contingency, is it just a mathematical process where you identify what the inputs are, you put them into a formula and it spits out, or is there a judgment involved in it so that there's a bit of art as well as science, in determining a contingency?

MR. KEAN: There is judgment in that and that's part of the reason of having a third party engagement –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – through individuals like Westney and (inaudible) third party participation in risk workshops itself.

MR. SIMMONS: Yes.

MR. KEAN: People that aren't normally close to the estimate.

MR. SIMMONS: Right, and it says contingency usually excludes – and item 3 is management reserves. And the bottom line says: “Contingency is generally included in most estimates, and is **expected to be expended.**”

Now what does that mean: it's expected to be expended?

MR. KEAN: You plan to spend it, otherwise you wouldn't budget for it.

MR. SIMMONS: Yeah. The –

MR. KEAN: And that's part of the control baseline – the project control baseline.

MR. SIMMONS: The management reserve that's excluded, are those amounts that are expected to be spent in the way contingencies are expected to spent?

MR. KEAN: No.

MR. SIMMONS: And then you – on the bottom then you continue and say they, which I think is AACE, define management reserve as, and this is a definition there at the top of the page.

Now, if I bring you to the third paragraph there that begins contrary. "Contrary to AACE's definition of Contingency, this definition does not imply that Management Reserve will be spent" – which is what you just told me. "As such, it has and continues to be my understanding that since Management Reserve is not part for the project baseline budget, and not planned to be spent, and thus should not be included in the expected cost used in CPW analysis."

So it's a couple things there. By management reserve, are we referring to an allowance for the strategic risks that we've talked about so much?

MR. KEAN: Yes, or any other risk or event that may occur.

MR. SIMMONS: Okay.

It's not the contingency that's included in the –

MR. KEAN: No, it's not.

MR. SIMMONS: – in the budget. Okay.

So it's your understanding that management reserve is not part of the project baseline budget. So what does it mean for it not to be part of the baseline budget? What –

MR. KEAN: It's – effectively invisible to –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – the project team. We don't – we'll never know it even exist. We try to provide information to help it to be assessed as to the requirement, but it's not something that we are privy to.

MR. SIMMONS: Okay. And the project baseline budget is not something that we've talked about very much here. And my understanding is that at the outset of the project there was a budget established, which is based on the approved capital cost estimate, and that estimate is broken down into various categories of work, and as the work is done, performance is tracked against the budget. And the objective is, for the people executing the work, to carry out their work within each of their allocated portions of that budget. Generally right?

MR. KEAN: Yes, yes that's correct.

MR. SIMMONS: Right.

And there's a fairly elaborate system under project controls of tracking work and comparing it to baseline budget and monitoring the performance against budget, correct?

MR. KEAN: Yes.

MR. SIMMONS: Yeah. Okay.

Contingency is included within that budget and can be spent as determined by the managers who have control over the budget?

MR. KEAN: As administered through the management change process.

MR. SIMMONS: Right. And there's a process for that, and it's a fairly detailed, well-defined process?

MR. KEAN: Very elaborate.

MR. SIMMONS: Right. Okay.

So for the baseline budget then, management reserve is not part of it – not planned to be spent. Then you also say it "should not be included in the expected costs used in the CPW analysis." So the CPW analysis is a different thing from the budget that's used in the construction of the project, right?

MR. KEAN: Yes, it is.

MR. SIMMONS: For a different purpose?

MR. KEAN: Yes.

MR. SIMMONS: Yeah. And in our context, the CPW is used for the purpose of comparing different options for making choices about which plan we want to adopt?

MR. KEAN: Yes.

MR. SIMMONS: Yeah. Okay.

So can you tell me a little more about why you say, then, management reserve should not be included in the expected cost that's used in the CPW budget – yeah – the CPW analysis?

MR. KEAN: I guess, while I haven't been involved in the CPW analysis, from just a practical view point, my understanding of economic evaluation in general has been that, you know, you use an expected amount, what you expect to spend in the comparison of options.

MR. SIMMONS: Mm-hmm.

MR. KEAN: And no matter – it's try to have a apples-to-apples comparison of the various scenarios, and you – if you were to consider, you know, anything beyond that, it must be considered in all options, of course, but basically, you're expecting to spend the base estimate; you're expecting to spend the contingency, and at a P50, there's that expected value outcome, so that's why, I guess, as I understand it, it would be, you know, reasonable to use a P50 in a pure CPW analysis.

MR. SIMMONS: Mm-hmm.

MR. KEAN: You know, that's a different, you know, a different position than, you know, what might be a final funding decision on a project.

MR. SIMMONS: Right, okay.

So there's maybe three things in play here now concerning the – how the estimate might be prepared. There's the estimate that's used for the project control budget.

MR. KEAN: Yes.

MR. SIMMONS: There's the estimate that feeds into the CPW.

MR. KEAN: Yes.

MR. SIMMONS: Now you're talking about financing?

MR. KEAN: Yes.

MR. SIMMONS: So financing might have different considerations, I'd suggest, than the project control budget and the CPW.

MR. KEAN: And that's considerations that from project team's perspective – beyond our pay grade, you might say.

MR. SIMMONS: Right, right. And you just said, for the CPW purpose, a P50 would be appropriate to use for the estimate.

MR. KEAN: Based upon expected costs.

MR. SIMMONS: Based upon expected costs. What about for the estimate that's used for the project control budget?

MR. KEAN: That's based upon a P50, as estimate contingency is normally set on a P50.

MR. SIMMONS: Right. That's fairly standard to do it that way?

MR. KEAN: I believe so, yes.

MR. SIMMONS: Yeah, okay.

Would you have expected it to be any different on this project?

MR. KEAN: Not from an estimate contingency perspective, no.

MR. SIMMONS: No, okay.

Now, AACE is a source of guidance for estimating practices, and we've heard it referred to a fair bit. Does – do any AACE materials tell us what P-factor should be used?

MR. KEAN: None that I'm aware of personally, no.

MR. SIMMONS: Okay. And in fact, when risk assessments are done – we've seen them in the Westney reports. We've seen the different

graphs and so on. It seems that contingency in particular is evaluated in ranges, ranges of different P-values.

MR. KEAN: Yes, a probabilistic viewpoint is provided.

MR. SIMMONS: Right. And from what – based on what you’ve told us and, I think, what we’ve heard from others, that’s done so that decisions can be made about what selection to make among those P-values for any particular project. And that’s a normal part of this process, right?

MR. KEAN: Yes, because cost is just one input into that decision-making.

MR. SIMMONS: Okay. Let’s go to Exhibit P-00206, please, which you’ve seen before. We’re at 5:20. I’ll see how quickly I can move it along. So this –

THE COMMISSIONER: It’s going to be on your screen.

MR. KEAN: Yes.

MR. SIMMONS: So this is Lower Churchill Update. It’s a PowerPoint deck dated April 23, 2010. And we’ll go to page 17, please, which you’ve been shown previously. This is the one that says: “General Assumptions for all cases,” and it’s got P75 capital cost estimates in there. And we’ve only really looked at this one page. It refers to different cases. So I’d like to go back to page 11, please, to put some context around this.

So at page 11 – I think it says April, 2010 – it says “Potential Regie Outcomes.” And then it says worst potential outcome, best, intermediate. Would you be able to recognize whether this is an analysis of what might happen as a result of the applications that had been made to the Régie in Quebec to get access to the Quebec transmission system?

MR. KEAN: I’m not entirely familiar with all the applications of course.

MR. SIMMONS: Mm-hmm.

MR. KEAN: I knew there was various applications and potential outcomes.

MR. SIMMONS: Okay. So go to page 13 please.

This is two pages over. And there are several outcomes listed and then it says, “Options Associated with Outcome #1.” And go up to the next page. Here we say “Outcome #2.” We’ve got an “Option A – Muskrat Falls first, followed by Gull Island through Quebec plus Island Link.”

Next page, please. “Option B - Muskrat Falls only with firm transmission rights, do not pursue upgrades.” Next page, please. “Options Associated with outcome #3,” and then go to page 17, again, the next page. So here we are back – so this is the general assumptions for these particular cases.

So at this point in 2010, there’d been no decision made about what the development scenario was going to be? There had been no decision made that it was going to be Muskrat Falls first or alone or Gull Island first, is that correct?

MR. KEAN: That’s generally correct.

MR. SIMMONS: Right.

MR. KEAN: Because all –

MR. SIMMONS: Yeah.

MR. KEAN: – the cases we were providing.

MR. SIMMONS: Right. So, the context here for this P75 capital cost appears to be one of the assumptions that was feeding into the analysis for these scenarios that we were looking at in this presentation. Yes. Okay.

Now, so my question was, leading up to DG2, do you have any recollection of how many – not a specific number, but some scale of how many different scenarios were in play for which you and the project management team had to feed different information through to the Investment Evaluation people, who were doing models to assess different potential ways of proceeding?

MR. KEAN: Somewhere in the range of 15 to 20, I think.

MR. SIMMONS: Yeah. Okay. And at this point, was there a capital cost estimate – well, let's say – the capital cost estimate for Muskrat Falls wasn't even really started at this point. SNC hadn't been retained, hadn't been hired. They weren't doing their estimate yet.

MR. KEAN: An estimate was prepared, yes, for Muskrat Falls –

MR. SIMMONS: Okay.

MR. KEAN: – using all the engineering to that date and using our – you know, Mr. Paul Hewitt and our own estimating resources –

MR. SIMMONS: Yes. Okay.

MR. KEAN: – but based upon the engineering that existed.

MR. SIMMONS: Okay. And in – that estimate, was that one using the P75 figure we have here? Or do you know?

MR. KEAN: Well, the – I'm referring to the base estimate.

MR. SIMMONS: Yes.

MR. KEAN: It would've been, but from a perspective of our risk analysis, it used that estimate in that June, July 2010 period. I don't recall any Muskrat scenario with P75.

MR. SIMMONS: Okay. All right.

MR. KEAN: I don't –

MR. SIMMONS: So was there – was this the sort of thing that was fixed in any particular way, that there had been any kind of formal adoption of any particular P-factor to use at this point, or was this part of exploring alternatives and modelling different alternatives?

MR. KEAN: All I know, there was a lot of wheels in motion that year, lot of things with all the scenarios, which was consistent with trying to validate what would be the best development option for the Lower Churchill.

MR. SIMMONS: Right. Can you remember, at any point in this period here, being told – you

know, receiving a memo saying: We're going to use P50 or being in a meeting where a decision was made to use P50 or having someone tell you that P50 or P75 was going to be the go-forward number that was going to be used?

MR. KEAN: I recall early in the year –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – when I, you know, we – and I – you know, all the cases initially were P75 which was –

MR. SIMMONS: Yeah.

MR. KEAN: – consistent with the numbers I had presented in June 2008.

MR. SIMMONS: Yeah.

MR. KEAN: You know, as I indicated yesterday, I think, I don't recall anyone telling me they moved to a P50.

MR. SIMMONS: Mm-hmm.

Do you recall this being a topic of discussion at all; a question that needed to be resolved?

MR. KEAN: No, but it must have been talked about.

MR. SIMMONS: Was your input ever sought?

MR. KEAN: No, not that I recall.

MR. SIMMONS: Mr. Harrington never discussed this with you?

MR. KEAN: Typically, when we were doing all these cases, you know, it was more Investment Evaluation giving the guidance. I'm not sure. You know, Paul would have been kept in the loop with all the various development scenarios was – there was quite a lot occurred.

MR. SIMMONS: All right.

So then you say it moved to P50 and, if I understand what your evidences was that you began to get requests from IE for data that was based on a P50 rather than a P75.

MR. KEAN: Well, we provided it in a P50, I think I said. I don't know how that came about.

MR. SIMMONS: You don't know how that came about?

MR. KEAN: That's what I'm scratching my head about.

MR. SIMMONS: Okay. All right.

MR. KEAN: And the next communication I had was with removal of that 6 per cent strategic risk exposure.

MR. SIMMONS: Yeah. So you don't know how the P50 came about. If I recall from your main evidence, the point of contact between your office and Investment Evaluation – it was Mr. Parry dealing with Mr. Goudie in this period?

MR. KEAN: Principally, but there would sometimes been a working meeting, I'm sure, to review cases and review where we are.

MR. SIMMONS: Mm-hmm.

MR. KEAN: And in periods of intensity that might have been every week or two.

MR. SIMMONS: Yeah. So from your recollection can you tell us, if you recall – if you can tell us how the P50 got adopted? Who made the decision? When or how it was made? Even how it was communicated to you? Do you have any clear recollections of any of that?

MR. KEAN: No, I don't. That's why I'm – it must have either come up in a meeting that we had with Investment Evaluation is what I would think.

MR. SIMMONS: Right. And from what you know of what Investment Evaluation does, would it have been Investment Evaluation's place to make decisions about what sort of P-factor should be applied to the capital cost estimate that was going to be used for the project?

MR. KEAN: Typically, I would – I don't know for certain but I guess there's a lot of inputs to them – to these models.

MR. SIMMONS: Yes.

MR. KEAN: They're the glue that keeps all this together.

MR. SIMMONS: Right.

MR. KEAN: For continuity.

MR. SIMMONS: They would have needed to know for there modelling. But have you – in all the questions you've answered, are you intending to suggest that it was the Investment Evaluation group that had the responsibility for selecting the P-value?

MR. KEAN: No, I think –

MR. SIMMONS: As opposed to communicating it.

MR. KEAN: That type decision would be based upon risk appetite and, you know, that's normally taken at an executive board-type level, I would expect.

MR. SIMMONS: Right. Some higher level in the organization but you don't know where, or by whom, or when.

MR. KEAN: I would expect like any of the assumptions that would be used for the model would be made at that and it flow into Investment Evaluation to consolidate.

MR. SIMMONS: Sure.

And through this period, for your purposes as you're going to move through into getting an estimate developed for use in the project budget, you would normally be doing that on a P50 basis.

MR. KEAN: Could you just repeat that, sorry?

MR. SIMMONS: As you move through towards getting an estimate prepared for use on actual construction of the project, from co-operation into the project budget, all that work, regardless, would have been done on a P50 basis, would it?

MR. KEAN: Well, as we pass through DG2 and continue to do our work –

MR. SIMMONS: Hmm.

MR. KEAN: – we went through the same process again to develop a probabilistic curve –

MR. SIMMONS: Yes.

MR. KEAN: – from that perspective, and we were asked, you know, we were providing a view point on the base estimate, escalation allowance and estimate contingency which is at a P50.

MR. SIMMONS: Yes.

MR. KEAN: But also reaffirming that this exposure, you know, there is some strategic risk exposure that exists.

MR. SIMMONS: Yeah.

MR. KEAN: And –

MR. SIMMONS: So that information is communicated along.

MR. KEAN: Yes.

MR. SIMMONS: So, for the purpose, though, of the project, of building the project, the estimate that you would normally prepare to go into the base budget would be done on a P50 basis, I think you've said.

MR. KEAN: Into the project control budget, yes.

MR. SIMMONS: Yes, project control budget, that's what I was looking for. Okay.

Now, you'd mentioned the names of a number of people who might have – the impression might have been left that you know that they made decisions around what P-factor to use: Mr. Warren, Mr. Sturge, Mr. Goudie.

Do you have any knowledge that any of those people were the ones who made that decision?

MR. KEAN: No, I don't.

MR. SIMMONS: Okay.

Exhibit P-01050, please, which is not on my list, I don't think.

THE COMMISSIONER: It's not on mine either.

MR. SIMMONS: This is a submission to the Public Utilities Board, CE-52, that you've been referred to before; the technical note on strategic risk analysis and mitigation. The one we have here is actually the public version because there was a confidential one submitted and I think you actually mentioned in your evidence earlier on, in passing, that there was a public version as well. Do you recall that?

MR. KEAN: Yes. Yes.

MR. SIMMONS: Yeah. And do you recall that you were actually asked, I think, to review the confidential one to determine what could be released publicly before the public version was done. Does that ring a bell?

MR. KEAN: No, but I would expect because the 51 – it appends the Westney report.

MR. SIMMONS: Yes.

MR. KEAN: And as me being the focal point with Westney –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – I would have been asked to –

MR. SIMMONS: Right.

MR. KEAN: – is this acceptable, what's Westney's concerns regarding this.

MR. SIMMONS: So I've read – I've compared both the public version and the confidential version, and with the exception of attaching the Westney report, they appear to me to be the same. So the same information is contained in both of them.

Okay. Just bear with me a moment. Okay, we can use this version.

So on this one, there's just a couple points I want to refer you to here. If we can scroll down a little bit, please, there's a description there –

this is all about strategic risk, and there's some description there of it. If we look at the paragraph that begins: "This work was completed ...," which is the third one down there on what you see there now. There is actually a reference here to a risk review undertaken by the Lower Churchill Project team in conjunction with Westney consultants.

So it appears here that there was public disclosure, here, of Westney's involvement. And you didn't have any problem with that part being publicly disclosed when this exhibit was done and released, hey?

MR. KEAN: None at all.

MR. SIMMONS: No. Okay. And if we scroll down a little more. Okay, stop there.

There's a description of tactical risks and a description of strategic risks. And have you had an opportunity to look at those, and can you tell me if that's consistent with what your understanding was of the way tactical risks and strategic risks were being assessed at the project?

MR. KEAN: Yes.

MR. SIMMONS: Yup. It is, so this was publicly known at the time.

And then if you – we go to the next page, please. Okay, you can stop there.

The first paragraph says: "When considering the level of the strategic risk reserve for the Project, progress made on mitigating and/or eliminating the strategic exposures was substantial. (A status report on actions taken to resolve and mitigate these risks between the evaluation in the summer of 2010 and DG2 is included in Appendix A.)"

So just go ahead one page, and I think on page 3 we'll get to appendix A.

Maybe one more.

Okay, so does this table look familiar at all to you now?

MR. KEAN: Yes.

MR. SIMMONS: Yes, it is.

And it appears to identify a series of strategic risks in the column on the left, and the middle column says: "Summer 2010 View of Mitigated Risk Exposure." And there's dollar values in there, and then the last column says what the year-end view was of mitigated risk exposure.

Where did these dollar values come from, do you know?

MR. KEAN: I think it came from a – we had a working session as we went through preparing this.

MR. SIMMONS: Yeah.

MR. KEAN: This was led by, you know – spearheaded by Mr. Bennett, but I was participating in the development of the viewpoints on what our exposure would be –

MR. SIMMONS: Yeah.

MR. KEAN: – as was other members of the management team.

MR. SIMMONS: Yeah.

We can go to the Westney report that's attached to the confidential exhibit, but before doing that, do you know if these are – these figures are all taken – actually taken from the Westney report and included in this –

MR. KEAN: Oh, okay.

MR. SIMMONS: – publicly released schedule?

MR. KEAN: Okay, I don't know for certain, but –

MR. SIMMONS: Well –

MR. KEAN: – it would – it makes – it's logical, given that we're comparing with the summer view, which was done with the Westney June-July risk analysis with the end-of-the-year exposure.

MR. SIMMONS: Okay, well, we can do that quickly. Let's go to P-01003, please. And let's go to page 39.

So you might recognize this as being from one of the Westney risk reports –

MR. KEAN: Yes.

MR. SIMMONS: – where it lists the key strategic risks –

MR. KEAN: Yes.

MR. SIMMONS: – and then values them over on the far right?

MR. KEAN: Yes.

MR. SIMMONS: Okay, so does this appear to be the same risks, you know, and values that were carried forward into that appendix A that was released publicly?

MR. KEAN: Yes.

MR. SIMMONS: Okay.

We can go back, please, to P-01050. And go to the second page. Okay, stop there. Scroll down, please. Okay, and stop there.

So the paragraph beginning “With the extent of the mitigation activities undertaken and in progress ...” includes a reference to a P50 strategic risk exposure there. So there was public disclosure here of what a P50 strategic risk exposure would be, and it includes then saying there’s a range here from P25 to P75 of between 187 million and 413 million.

Now, I know this is DG2, but those figures were publicly disclosed at this point in the PUB process, correct?

MR. KEAN: Yes.

MR. SIMMONS: And it says they were considered by establishing a project tactical contingency at 15 per cent and you went through some of that in your evidence already.

MR. KEAN: Mm-hmm.

MR. SIMMONS: Scroll down, please. Oh no, sorry – back up. Okay, you can stop there.

In the same paragraph we were reading from then, beginning in the third line, the middle: “Nalcor executive determined that it was not appropriate to create a positive or negative strategic reserve amount at DG2.”

So do you read that as public disclosure that there was not a reserve set up for strategic risk, and it was being excluded from the estimate?

MR. KEAN: Yes.

MR. SIMMONS: Okay.

Now, around about – not long after this I think – you’ve told us about being contacted by Mr. Bradbury concerning alignment between this document and one of the documents you’d prepared, which had had the reference in it, to Emera and the UARB.

MR. KEAN: Yes.

MR. SIMMONS: Now, I won’t spend a lot of time with that on you – on that with you again – but I do have to ask. First of all, do I understand correctly that when you originally included that reference, you – as best you can say now, you must have had some reason for doing it and some knowledge, but you can’t go back now and identify what the source of that information was?

MR. KEAN: I’m struggling to, yes.

MR. SIMMONS: Right, okay. And when Mr. Bradbury contacted you about – and you’ve described it as a request to align the documents – is that the way you described it?

MR. KEAN: Yes.

MR. SIMMONS: Did he actually tell you what to remove or what to do to align the documents?

MR. KEAN: Yes.

MR. SIMMONS: Okay, and what was that?

MR. KEAN: That general statement about the – that I guess was a bit conflicting about the – conflicted with what Nalcor’s actual premise was regarding strategic risk wasn’t aligned with what was in the DG3 –

MR. SIMMONS: Right.

MR. KEAN: – DG2 risk report.

MR. SIMMONS: Okay, so can you recall what he told you about what the reason for that was, as to why it was that statement that should be removed in order to align the documents?

MR. KEAN: Because that wasn't aligned with what we've had in the public –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – domain.

MR. SIMMONS: Okay, was there – is there any discussion about whether what you had put in was correct or incorrect?

MR. KEAN: I don't recall.

MR. SIMMONS: Mm-hmm. Okay. And had you – did you have any concern about removing it? Did you believe it was something that should've stayed in, were you at all concerned about doing that?

MR. KEAN: What I recall was that we met with – there was a group of people that met and went through the documents and Mark sent a follow-up email with the –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – changes – there was a number of different documents – a request or if this document is good or not.

MR. SIMMONS: Mm-hmm.

MR. KEAN: I don't recall that being problematic because I was aware of this being issued publicly – the CE-52 –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – you know, a couple months before and had –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – you know, seen the draft and understood that as part of the validation that we would be okay with issuing the Westney work.

MR. SIMMONS: Mm-hmm.

MR. KEAN: So it – based upon, you know, a policy level, I guess, I appreciated that that was where they saw things as opportunities, so I respected that in the – in that regard and ensured the documents were brought into alignment.

MR. SIMMONS: Okay.

If we go back to CE-52, there still on the screen, and there is a – in the paragraph we just referred to there was a rationale presented there for removing the strategic risk and it had related to there being some positive opportunities that balanced some negative opportunities and some other things that had been done.

Did you disagree with anything that was – that's stated here in CE-52 about that?

MR. KEAN: No, particularly as it relates to – we had never put value on the opportunity, I think. If you could just scroll up just so I could – may I?

MR. SIMMONS: Yeah, scroll up please.

MR. KEAN: The VSC technology was one and it – in June when we did the risk analysis we were looking at a smaller HVDC link with using VSC technology which we – the viewpoint was that it would add more risk.

MR. SIMMONS: Mm-hmm.

MR. KEAN: The capital cost eight that we were working on August period was a more larger, more robust system with traditional LCC technology, so if we're increasing the base estimate because we're going with a more expensive technology –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – to reduce the risk, well we shouldn't have it – we shouldn't be carrying this as a risk amount anymore.

MR. SIMMONS: Right.

MR. KEAN: Because you're putting it into the base estimate effectively.

MR. SIMMONS: So that VSC technology, that had been flagged early on as being a significant risk item – hadn't it?

MR. KEAN: Yes.

MR. SIMMONS: Yeah. With a high value as well?

MR. KEAN: Yes.

MR. SIMMONS: Yes.

So when the change was made to go to the other technology, you're saying it actually increased the base estimate –

MR. KEAN: Oh, yes.

MR. SIMMONS: – (inaudible) to do that?

MR. KEAN: Yes.

MR. SIMMONS: Right.

And that you were – your view was that it would be appropriate, then, to reduce the amount of risk that was being carried in order to offset that.

MR. KEAN: We eliminated the risk because we got – we were –

MR. SIMMONS: Mmm.

MR. KEAN: – we weren't using that technology anymore.

MR. SIMMONS: Mm-hmm.

MR. KEAN: We decided to use a more proven –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – you know, standard technology that would cost more, of course.

MR. SIMMONS: Mm-hmm, right.

MR. KEAN: So as a result you can't – the risk was effectively retired.

MR. SIMMONS: Okay, good. Okay, thank you.

Was this RFI CE-52 available to Manitoba Hydro International when they did their work?

MR. KEAN: I don't know.

MR. SIMMONS: It's publicly available, I guess, so, yeah.

MR. KEAN: So, I guess, it probably was.

MR. SIMMONS: So they would've known then at least what the treatment was that was being given to strategic risk at the time of DG2?

MR. KEAN: Okay.

MR. SIMMONS: Okay.

THE COMMISSIONER: That's if they looked for it.

MR. SIMMONS: Pardon me?

THE COMMISSIONER: That's if they looked for it.

MR. SIMMONS: If they looked for it. Correct.

MR. KEAN: I recall the MHI report makes reference to the strategic risk.

MR. SIMMONS: A couple other little things.

There was – you were referred yesterday to a question about a steering committee and if I recall correctly you described it as there having been a charter developed but that it – I think you used the word: it morphed into the executive committee.

MR. KEAN: That's over the years, yes, just from –

MR. SIMMONS: Yeah.

MR. KEAN: – time, maturing of the organization, growing nature of the organization.

MR. SIMMONS: Right. And I think you described the role of the executive committee – I think it was LCEC was the acronym, I think, that

was used for it – as being, what sounded to me like an information exchange and not a forum for the making of big decisions about the project.

MR. KEAN: Well, no –

MR. SIMMONS: Or have I got that wrong?

MR. KEAN: No, there – it would be a key – it would be a meeting where principal interfaces would have to be addressed.

MR. SIMMONS: Yes.

MR. KEAN: So if, for instance, if Mr. Bennett who had responsibility for LCP –

MR. SIMMONS: Mm-hmm.

MR. KEAN: – had concerns with an interface or support of the business at Churchill Falls with perhaps granting land for the switchyard, as an example.

MR. SIMMONS: Mm-hmm.

MR. KEAN: That would be the top of the house to be able to resolve those issues –

MR. SIMMONS: I see –

MR. KEAN: – and talk about those things.

MR. SIMMONS: – yes. So there would be an opportunity to make decisions to resolve issues but it was where there was interfaces, such as you described there.

MR. KEAN: Yes, and it might also be, for instance, on the aspects of the labour strategy.

MR. SIMMONS: Mm-hmm.

MR. KEAN: Whereby the VP of human resources and organizational effectiveness who had overall accountability for labour relations, holistically, in the company, would be kept apprised and, you know, updated. If there need to be some status update on labour relations, it would be brought to that table, and any concerns therein to make sure – and not always would it require a decision, but it may be an information exchange.

MR. SIMMONS: Okay.

You've been very patient, and I'll end it there.

And that's all the questions I have, Commissioner.

THE COMMISSIONER: Okay, thank you.

MR. SIMMONS: Thank you very much, Mr. Kean.

THE COMMISSIONER: All right, Ms. Hutchings.

MS. HUTCHINGS: Good afternoon, Commissioner.

THE COMMISSIONER: (Inaudible.)

MS. HUTCHINGS: I think the first thing I should do is thank my colleagues who are all behind me for the questions, because it certainly can cut down considerably on the number of questions that I have.

All right. I wanna talk first of all about the slide presentation to MHI and the issue of the missing slide 12.

MR. KEAN: Yes.

MS. HUTCHINGS: I just have a couple of questions on that.

First of all, do you have any recollection of having any instructions from anyone to remove slide 12 from the slide deck prior to the presentation to MHI?

MR. KEAN: No.

MS. HUTCHINGS: Do you have any recollection prior to the presentation that you shouldn't reveal the cost for strategic risk?

MR. KEAN: No.

MS. HUTCHINGS: If – based upon your evidence, okay? If slide 12 had been removed from the slide deck, during your presentation, do you think that you would've noticed it?

MR. KEAN: Well, I was the – I had developed the presentation and was the keeper of the file to meet with Manitoba Hydro, so I probably would've noticed it, yes.

MS. HUTCHINGS: Okay. Thank you.

And if yes – well, you've already said yes – why would you have noticed it? Any reason?

MR. KEAN: Well, I – it was being stored on my – on a working folder in the network drive. I guess I was familiar with the contents. It was a presentation that had been adopted from our earlier presentation to the executive committee – or to the Nalcor executive. A very similar presentation.

MS. HUTCHINGS: Okay. All right.

Yesterday, there was some discussion about the P1, and you started talking about that people seemed to be hung up on the P1, and I don't think that you fully got your point across. And if I'm correct in that respect, is there anything further that you'd like to be able to say about the P1?

MR. KEAN: I'd like to be able to, I guess, just focus the attention to the mid-range of that probabilistic curve, whatever that information, P25 to P75. It's a very – we did a lot of work to build a detailed schedule. You know, I said about 10,000 line items. And to do a schedule on that risk analysis, you're taking that and you're simplifying it into about 100 line items. And you're building in weather calendars and so on.

So, through that simplistic modelling – but it's summary level activities, you know, and you're – there are some things, nuances, in that modelling process that are hinged on weather events and weather calendars and so on. And that it produces a probabilistic curve and – I just – my understanding of those curves and that modelling process, the tails of those aren't that realistic. So I wouldn't put a lot of credence into that. You know, I'd much rather anyone to say it could have been a lower probability.

But, fundamentally, realizing that there is a lot of work and a lot of effort to create that process. And at the end of the day, it provides a way of making an – understanding an informed

assessment of what the schedule pivot points and risk are. And I talked about that earlier today, about how we used that information to assess with mitigation planning and response planning.

MS. HUTCHINGS: Right.

MR. KEAN: And did some things.

MS. HUTCHINGS: Okay.

Madam Clerk, could I see Exhibit P-01022, please.

THE COMMISSIONER: Tab 17.

MS. HUTCHINGS: So this is the September 2010 Pacesetter Evaluation by Independent Project Analysis. Can you – when was this prepared, do you know?

MR. KEAN: Well, the review was taken – undertaken in the months prior to that, so that was in the – I guess, prior to Decision Gate 2 when we were undertaking feasibility studies. We were – as a team we were located at Hydro Place; a smaller group.

MS. HUTCHINGS: Okay. And was –

MR. KEAN: (Inaudible.)

MS. HUTCHINGS: – was SNC-Lavalin working on the project at that time?

MR. KEAN: SNC-Lavalin may have been undertaking some engineering scopes in their own office in Montreal and so on, but no, not as part of the team as we had after the EPCM contract award in February 2011.

MS. HUTCHINGS: Okay. Can I see, Madam Clerk, page 41? Thank you. I'm not sure if this is the one.

It says here the: Project team is fully integrated. I just want to clarify with that; you can have a look at that, Mr. Kean.

MR. KEAN: Mm-hmm.

That's – my understanding from that is it represents all the business functions that are required to be working together as a complete

unit to ensure that the project's being planned effectively for a planned-good outcome.

MS. HUTCHINGS: Okay. So when – just to clarify – the project team they're referring to does not include SNC-Lavalin?

MR. KEAN: No.

MS. HUTCHINGS: Is that correct?

MR. KEAN: It does not include SNC-Lavalin because SNC-Lavalin wasn't hired as the EPCM consultant at that point in time. So this represents the Nalcor project team that existed.

MS. HUTCHINGS: Okay. Thank you.

Mr. Simmons was talking to you about some definitions that AACE use and I think that in your evidence, as you pointed out that AACE was used as a source of guidance –

MR. KEAN: Yes.

MS. HUTCHINGS: – for estimating.

MR. KEAN: Yes.

MS. HUTCHINGS: Okay. So, do you know what the – what AACE define strategic risk as?

MR. KEAN: I don't know if I can quote it this late in the day, but –

MS. HUTCHINGS: Roughly.

MR. KEAN: It would be something that fundamentally impacts the overall business objectives and typically background or broader, outside the project scope areas, things outside the project team's control.

MS. HUTCHINGS: Okay.

MR. KEAN: But it would impact the fundamental project objectives.

MS. HUTCHINGS: All right. And are the strategic risks, in that sense, are the strategic risks included in the project cost baseline?

MR. KEAN: No, they're not.

MS. HUTCHINGS: Right.

MR. KEAN: As they're funded by management reserve, which is outside the baseline.

MS. HUTCHINGS: Thank you.

Now, I mentioned – I've heard the name Lee Stanton? Who is Lee Stanton?

MR. KEAN: Lee is a well-respected hydro engineer planner who – former SNC-Lavalin employee, now retired. He had spent 40 years, I think, working on hydro projects, over 25 projects, even Three Gorges in China. And Lee had been involved with the Muskrat Falls Project since 1978; did all the original planning. And Lee was accountable and responsible and developed the project control schedule, the 10,000 line item schedule that we have and that we used to form a basis of a July 2017 first power being viable.

So Lee was the principal architect of that, integrating the engineering work. So an impressive pedigree and very knowledgeable of the Churchill River.

MS. HUTCHINGS: Okay.

And he developed the – so he was the one that developed the schedule to lead up to –

MR. KEAN: Yes, he worked with others to take that, but Lee had the leadership role.

MS. HUTCHINGS: Okay. Thank you.

Were the strategic risk and associated cost ever hidden from Nalcor executives or any third party who asked for them?

MR. KEAN: No.

MS. HUTCHINGS: Mr. Simmons eloquently described risk management in a very easy and understandable way for us all. And I just wanna ask – there's been a lot of reviews done of the risk management that's been – that was undertaken by your team throughout.

Is it common practice for a third party, independent, if you wish, reviewers to come in

to review the risk management planning from time to time?

MR. KEAN: Not in my – to my knowledge, but we’ve had quite a few – lot of assurance reviews, and some of those assurance reviews have included risk management.

MS. HUTCHINGS: Okay.

MR. KEAN: And have given us, you know, good acknowledgement of the work that we’ve done and the practices we’ve been utilizing.

MS. HUTCHINGS: Okay. But certainly, in risk management, when you’re identifying a risk –

MR. KEAN: Yes.

MS. HUTCHINGS: – and you’re – isn’t that a subjective analysis by your team?

MR. KEAN: Principally, in the 2008 through – sorry, 2007 through 2010 period, we engaged a lot of subject matter knowledge – subject matter expertise throughout the world to try to get as much expertise as we can.

A great example is the: What is the solution for crossing the Strait of Belle Isle? Is it going to be a tunnel solution? Is there going to be a submarine cable? We didn’t know at one point in time. It was identified as a \$500 million exposure in 2008. However, by engaging experts from around the world: Norwegian Tunneling Society, as an example, brought them here to do work with us, and through various field programs we were able to understand the risk, you might say, and eventually some of that work led to us selecting a seabed option that’s been successfully installed.

MS. HUTCHINGS: Right. Okay.

All right. You mentioned that you left Muskrat Falls Project in January of 2017. Is that correct?

MR. KEAN: Yes, I did.

MS. HUTCHINGS: And that the reason that you left was a difference in ideology. Okay?

MR. KEAN: Yes.

MS. HUTCHINGS: And you explained, I think, to the counsel – I think it may have been Ms. O’Brien that was asking you the questions about that.

The change in the, I guess, in the philosophy that you were grappling with, did that change come from – were you referring to Mr. Stan Marshall in that respect?

MR. KEAN: No.

MS. HUTCHINGS: Okay.

Those are all my questions.

THE COMMISSIONER: Thank you.

Redirect.

MS. O’BRIEN: Thank you, Commissioner.

I do have some.

Mr. Kean, when Mr. Simmons was questioning you he brought up this Exhibit P-00944, and this was the note that you had provided with us on the second day of your interview where you were giving some clarity on management reserve. And as I understood you answering Mr. Simmons’ questions, I – I’m not sure, I need to get some clarity.

But were you saying that one of the key differences between contingency and management reserve was that contingency was expected to be spent, and management reserve was not expected to be spent?

MR. KEAN: Well, contingency – or estimate contingency is identified for these tactical risk (inaudible) we planned to based upon – an estimate contingency is the P50 amount in the –

MS. O’BRIEN: Right.

MR. KEAN: – probabilistic curve, so from a perspective of when we drive it, yes, we expect to spend the estimate contingency.

MS. O’BRIEN: But you just don’t know how much.

MR. KEAN: No, from a probabilistic perspective you would expect to spend that estimated contingency. That's why in that overall cost curve for tactical risk exposure it gives a cumulative distribution and it's typical practice to pick that estimate contingency at a P50 value.

MS. O'BRIEN: Yes.

MR. KEAN: Of course –

MS. O'BRIEN: And that P50 value represents the number where your best guess – or your best evaluation at that time is that there is a 50 per cent chance that you'll spend more than that amount and a 50 per cent chance that you'll spend less than that amount.

MR. KEAN: Yes, that's correct.

MS. O'BRIEN: Right. So when you say contingency is expected to be spent, you don't mean, necessarily, that full amount of contingency will be spent – the number you gave it. You may spend less.

MR. KEAN: It is quite possible, yes, that you could spend less.

MS. O'BRIEN: Isn't it – if you've done your work right –

MR. KEAN: (Inaudible) –

MS. O'BRIEN: – isn't it 50 per cent –

MR. KEAN: Yes.

MS. O'BRIEN: – likely you'd spend less?

MR. KEAN: Yes, it is.

MS. O'BRIEN: Okay. In the perfect world if you did the perfect analysis. And then it's 50 per cent likely you'd spend more.

MR. KEAN: Probabilistically, yes.

MS. O'BRIEN: Okay.

So when we talk about management reserve, isn't it the exact same situation? I mean, you would expect to spend some amount of the

management reserve, and probabilistically, assuming you captured every single strategic risk and every tactical risk, you know, that – and no other tactical risk arose other than the ones that you considered, in that case, on a – probabilistically, on a 50 per cent basis, you'd expect to spend the management reserve, would you not?

MR. KEAN: You'd have to account for – if I could, one differentiation. When I said expected in the case of estimate contingency, it's in the control budget, you know, it's in the – what the project management team has, and from a – it's recognized that those funds will be required in that 6.2 billion.

MS. O'BRIEN: Yeah.

MR. KEAN: From a management reserve perspective, we're on that spectrum, and how much you will expend, given the nature of risk, is very uncertain, but there is an amount there that needs to be – you need to determine where you want to be on that probabilistic curve and plan for that accordingly.

MS. O'BRIEN: But it's the exact same process that you went through with the tactical contingency.

MR. KEAN: The only difference would be is that from a perspective – the question of whether you should have a reserve or not, I guess, depends on risk appetite.

MS. O'BRIEN: Okay, but you are – what I'm trying to get at, Mr. Kean, is that in terms of expectation to spend these dollars amounts, there's an – the same expectation that is there for contingency, which is we've picked a number; our best estimate now is we might – 50 per cent likely we'll spend more; 50 per cent likely we'd spend less. That's the exact same situation with the management reserve. We did our best to identify strategic risks, we picked a P50 number: 50 per cent likely we'll spend more; 50 per cent likely we'll spend less.

MR. KEAN: You will expend an amount, yes.

MS. O'BRIEN: But have – as – have I characterized it –

MR. KEAN: Yes, you have.

MS. O'BRIEN: – correctly there?

MR. KEAN: Whether it's the right actual strategic risk, but from a cumulative probability you're recognizing that there are some out there.

MS. O'BRIEN: Yes. And if you haven't managed to capture them all in your strategic risk analysis, and if you haven't captured them all in your tactical risk analysis, then it's more likely there will be other costs that arise?

MR. KEAN: Likewise from opportunities, I guess, just to be fair.

MS. O'BRIEN: Yes, yeah, opportunities and costs. Agree?

MR. KEAN: That's the uncertainty that exists.

MS. O'BRIEN: Okay. So you agree with my statement?

MR. KEAN: Yes.

MS. O'BRIEN: Okay. And – okay.

So when – also Mr. Simmons was asking you about the use of – when in – the papers that you prepared, your use of Nalcor executive, and he was – I think he was saying that we had to be – got you to – he was confirming with you that we have to be careful when we see those words in your papers – the papers you were the primary author on – that we don't necessarily know who the Nalcor executive is in that group. It's – it could – you weren't necessarily referring to the entire executive team of Nalcor, is that right?

MR. KEAN: Depends on the respective subject, I guess, in that regard.

MS. O'BRIEN: That's right. Okay, I understood that part, but I just wanted to confirm, when we're talking about how you've used the term in your papers, can we be confident that when executive team is referred to, that you would be referring to Gilbert Bennett and Ed Martin, at the very least, as part of that group? Or can we not even assume that?

MR. KEAN: Well, they would be part of that group. I typically refer to, in our documents, the CEO from a Gatekeeper.

MS. O'BRIEN: Right.

But when you use the word “executive team” in your papers, is it fair to say you did mean Mr. Gilbert Bennett, and you did mean Mr. Edwin [sp Edmund] Martin?

MR. KEAN: It would be inclusive of those two individuals.

MS. O'BRIEN: And there may be others but there may not be.

MR. KEAN: Yes.

MS. O'BRIEN: Okay. I just wanted clarify that, for the Commissioner.

We've had some look at CE-52, the PUB Exhibit – it's been entered as P-01050 and P-01023. I don't need the Exhibit. Just – you had said – do you know who drafted that document?

MR. KEAN: Pardon me?

MS. O'BRIEN: Do you know who drafted CE-52?

MR. KEAN: I think it was a combination, a bit of a group effort, to be honest. Mr. Bennett was involved, I was involved in it, Mr. Harrington; I'm sure others were probably involved in it. But because of the nature of it we were trying to make sure it was as – you know, from a consistency perspective, reflected DG2 perspective. But I think, you know, Mr. Bennett, I think, took the original lead on it.

MS. O'BRIEN: Okay. Thank you.

We also – you talked about Hollmann, and Hollmann's scope of work and we heard you say that the part – that when you did receive the draft report from Mr. Hollmann, you considered it to be outside of his scope of work? He –

MR. KEAN: Some of his –

MS. O'BRIEN: Parts of it?

MR. KEAN: – commentary, yes.

MS. O'BRIEN: Yeah. And particularly the comments he made about how you were dealing with the risk in the estimate?

MR. KEAN: Yes.

MS. O'BRIEN: Okay.

MR. KEAN: (Inaudible.)

MS. O'BRIEN: So we now – it will be entered as an exhibit, it hasn't yet been because it has to go through our vetting process. But I have the document here and I'm going read out what the scope of work says, okay?

It says: The following work description is preliminary; it is based on initial general discussion and understanding and it is anticipated that this proposal may be revised as further clarification is obtained. It is understood that the LCP estimate to be reviewed is to support Nalcor Gate 3 – FEL3 – and reflects a single scope option; as with most megaproject estimates, parts of the estimates have been prepared by different parties, including the owner.

It is further understood that the OP – LCP desires a review focused on the estimating strategy process and practices, rather than quantitative outcomes. The proposed work reflects the consultant's typical approach to estimate validation, which necessarily includes both quantitative estimate review as well as – sorry – qualitative estimate review as well as quantitative estimate metrics validation. However, the focus is on the qualitative aspects. Quantitative review is focused on relative consistency of outputs as opposed to assessing the quality of the absolute values.

The LCP team should be aware that while the consultant has been involved with analysis of hydro projects, I have no specific quantitative metrics for projects in Newfoundland, and elements of review slash validation will be based on reasonable assumptions for remote Canadian locations.

That was the scope of view that's set out in Mr. Hollmann's contract. Was it ever amended or changed?

MR. KEAN: Not that I recollect.

MS. O'BRIEN: Okay, we haven't been able to find anything.

MR. KEAN: Okay.

MS. O'BRIEN: So here he's – you're asking him to focus on the estimating strategy process and practices, particularly qualitatively.

MR. KEAN: Yes.

MS. O'BRIEN: That does – I don't see how that says that he wasn't to look at how, in your estimates, you were dealing with risk.

MR. KEAN: The scope of work had to deal with the estimate. When I'm referring – it's the base estimate parameters.

MS. O'BRIEN: It doesn't say that.

MR. KEAN: Okay, sorry. That was the intention as reflected by, you know, the quote – I guess the famous quote that we've been using. It says base estimate, and that was our focus, because Mr. – and the reason for that is that we had Mr. Hollmann provide guidance on the escalation modelling previously.

MS. O'BRIEN: Mm-hmm.

MR. KEAN: We're working on that approach, and we were utilizing Westney on the risk, so I felt that we had good coverage there. But we needed that support to have a look at the base estimate itself.

MS. O'BRIEN: Okay, but here you tell Mr. Hollmann in this scope of work that you're asking him to do a review looking at your estimating strategy process and practices. And he did that, and he said one of the problems I have with what you're doing is how you're dealing with risk.

MR. KEAN: That's – again, that's in the context of base estimate. He also made many comments about management of change, project

controls plans, earned-value management. That's not in the context of the estimating strategy either.

MS. O'BRIEN: Okay, I – we were really focused on the comments he made about how you were dealing with risk.

MR. KEAN: I understand.

MS. O'BRIEN: And is it fair to say that how you were dealing with risk, in terms of the framework that you were using for risk and how you were assessing the strategic risks versus tactical risks – that didn't change from DG2 to DG3, did it?

MR. KEAN: No, it did not.

MS. O'BRIEN: No. Okay.

And I will clarify that we did find Mr. Hollmann's invoice as well, so that will go in. And we did find one further email from you to Mr. Hollmann, after you – after the one you forwarded his report, where you said it was written a couple of days later – thanks John, I will have a close read over the coming days and advise our – my thoughts – but I'm assuming you meant you – my thoughts. We don't see any further emails, is it possible that that is – that your last written communication to Mr. Hollmann?

MR. KEAN: It could be, but as you know there has been an issue with my emails disappearing at Nalcor.

MS. O'BRIEN: Okay. So that's all we've been able to find.

Okay. The – can we please go – and this will be brief, but can we go to P-00094, please, page 100? This was a question – this was an area that actually Mr. Luk was questioning you on. Page 100. I think it was down here at the bottom.

So it just – I just noted this sentence here, the last one on the page. "All IBA related costs are" associated [sp allocated] "to Gull Island, Muskrat Falls, and LTA projects as per the Principals of Cost Allocation."

When we got to DG3, were there some of the costs that you were – at that time – allocating to Gull Island, not the Muskrat Falls Project and the LTA projects?

MR. KEAN: Yes, there (inaudible) – for instance, the generation EA was for both the Gull Island Project, the LTA and the Muskrat Falls Project. So there was, accounting that, established an allocation principal for allocation of some of those costs.

MS. O'BRIEN: Okay.

MR. KEAN: (Inaudible.)

MS. O'BRIEN: And is – and costs that were associated to Gull Island, would they have been included in the \$6.2 billion estimate?

MR. KEAN: No, they would not have been.

MS. O'BRIEN: Okay. To your knowledge, what other costs were put in the Gull Island bucket?

MR. KEAN: So I – what I understand, it would have been costs associated with the – some of the IBA costs may have been. I can't confirm. Of course Gull Island had direct costs from all the feasibility studies and so on.

MS. O'BRIEN: Okay. Other than direct costs though?

MR. KEAN: I – there could have been something from weather monitoring stations or things like that, but – whereby, from a reservoir perspective, it would share across all reservoirs or ...

MS. O'BRIEN: Would there have been things in there that – shared between the projects – that even if we never – if Muskrat Falls was just going ahead on its own, that money would have to be spent?

MR. KEAN: The only thing I can think of is the environmental assessment cost.

MS. O'BRIEN: Okay. And we'll do some further investigation into that. Thank you.

MR. KEAN: That would be detailed within the reports, the estimate.

MS. O'BRIEN: Where would we look for that in particular?

MR. KEAN: The Decision Gate 3 estimate reports.

MS. O'BRIEN: Like, the basis of estimate? Is there another document we should be looking at?

MR. KEAN: No. The basis of estimate just define how the, you know, the basic – what makes up the – then it's the detailed estimate itself.

MS. O'BRIEN: Okay.

MR. KEAN: You know, which is 50 volumes.

MS. O'BRIEN: Okay.

MR. KEAN: You know, but there's summary reports of those.

MS. O'BRIEN: Okay. And is that – if we wanted to know what other costs were – for example, if we wanted to know what was allocated for project management team salaries as part of the estimate, what was allocated for other overheads of Nalcor as part of the estimate – is that where we'd look as well?

MR. KEAN: No, that would be contained here from an estimating standard. So, for instance, X number per cent of corporate overhead would be listed in the base of estimate, part – one of the parts there in this particular document.

MS. O'BRIEN: Okay, and would it – that be broken down? Rather than just taking a global percentage for overheads, would that be broken down further into: this is what we expect to spend on consultants for the project management team, this is what we expect to spend on, you know, new hires that we – you know, we're going to have to take on at Nalcor to manage this project.

MR. KEAN: So from a people perspective, it was all based upon a position number. You list every resource that you needed by: needed a

engineer or civil engineer, junior – you'd list out the full resources, you'd list out the full – everyone would have a unique position ID, every position an estimated start and end date for that position and depending on the classification of position, it would have an assumed rate that's documented in the basis of estimate, and telephone and computer services costs and so on. That would eventually roll up to produce you a histogram of planned people and associated costs.

MS. O'BRIEN: Okay. Thank you.

One of the questions – one of the answers that you gave, I'm not sure if it was to Mr. Peddigrew or another counsel, but I heard you say that removing the strategic risk from the estimate had no impact on awareness about strategic risk. Do you recall saying that, or words to that effect?

MR. KEAN: I recall something of that nature, yes, of course.

MS. O'BRIEN: Okay. And I just want to clarify whose awareness you're talking about, because I know you've given a lot of evidence about how, you know, you personally and your team, really worked to ensure that the Nalcor executive was aware that despite the fact they were removing strategic risk from the estimate, it still existed and it was, you know, still a real thing out there for them to face.

MR. KEAN: Yes.

MS. O'BRIEN: Is that what you meant by it didn't affect awareness?

MR. KEAN: That's right. You know, the quantitative aspect of, you know, from not being in the base estimate, it was never intended, it's strategic risk, but the key is that they're risk owners and the results of the results of the QRA is communicated upward. And that was, you know, my job to make sure that Mr. Harrington was aware, Mr. Bennett, and when the opportunity arose, I would make sure the next level up would be aware: Mr. –

MS. O'BRIEN: Mr. Martin.

Okay, but I take it then from that, and from your previous answers in terms of what you know was communicated to government, you would not know the answer to the question whether removing strategic risk from the estimate had an impact on the awareness of the shareholder, for example.

MR. KEAN: No, I have no knowledge of that communication chain, sorry.

MS. O'BRIEN: Okay.

And you would have no – you don't – you – I don't know, I'll ask you. Do you have any knowledge whether removing strategic risk from the estimate had any impact on the awareness of the public?

MR. KEAN: I really don't know.

MS. O'BRIEN: Those are all my questions.

THE COMMISSIONER: All right. Thank you.

Mr. Kean, thank you very much for staying with us for so long. I appreciate the fact that you did do that and you're free to go. I'm not sure if you are part of stage 2 or phase 2 or not; I suspect you probably are. But we shall see, so we may meet again.

Can I just thank everyone here for staying as long as you have and helping to keep us on schedule? I really do appreciate it and I want you to have a good long weekend and – even though – and we will remember our Veterans at the same time.

So we'll adjourn now.

CLERK: All rise.

UNIDENTIFIED MALE SPEAKER: Thank you.

CLERK: This Commission of Inquiry is concluded for the day.