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August 9, 2019

**BY EMAIL – admin@musktratfallsinquiry.ca**

The Commission of Inquiry  
Respecting the Muskrat Falls Project  
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**Attention: Honourable Justice Richard  
LeBlanc**

Commissioner,

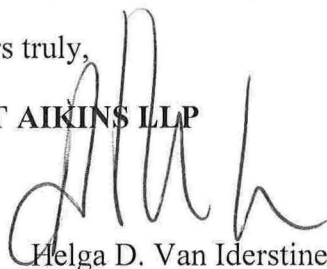
**Re: Commission of Inquiry Respecting the Muskrat Falls Project  
– Request for Standing  
Manitoba Hydro International**

We are enclosing the Written Argument of Manitoba Hydro International. If you have any questions, we would be pleased to respond.

Yours truly,

**MLT AIKINS LLP**

Per:



Helga D. Van Iderstine

HDV:jm

Encl. – Written Argument

## ***Commission of Inquiry Respecting the Muskrat Falls Project***

### **Submission of Manitoba Hydro International**

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Your Lordship,

Manitoba Hydro International's submission will focus on three areas:

- MHI's assessment of the cost estimates of Nalcor Energy ("Nalcor") at DG2 and DG3 with respect to estimate contingencies, including tactical risks and strategic risks in its report to the Government of Newfoundland and Labrador.
- The conclusion that the cost estimates of Nalcor at DG3 were reasonable based on a P50 value.
- Whether MHI knew or ought to have known that \$497 million of strategic risk exposure had been excluded from the capital cost estimate for the Interconnected Island Option.

Manitoba Hydro International ("MHI") was consulted in April 2012, by the Government of Newfoundland and Labrador, Department of Natural Resources ("the Government") with a request that it prepare a report assessing the two generation supply options, based on information to be provided by Nalcor Energy in preparation for Decision Gate 3 (Exhibit P-00058). This was later expanded to include a wind study (Exhibit P-00060).

The report explicitly states that the report was "for the intended purposes stated in the agreement between MHI and the Client under which this work was completed" (Exhibit P-00058, page 5).

The scope of work is referenced in the contract between the Government and MHI, which was signed on May 22, 2012. The signed document limited the review to the following:

#### *Objective*

*MHI (the Consultant) shall review work completed by the Proponent (Nalcor) since Decision Gate 2 (DG2) in preparation for Decision Gate 3 (DG3). The review shall include an assessment of the Cumulative Present Worth (CPW) Analysis of the various components for each of the two Options, including a reasonableness assessment of all inputs into that analysis. The tests of reasonableness for this assessment are generally defined as the work following:*

*(a) Good project management and execution practices, and*

*(b) Good utility practices of the majority of electrical utilities in Canada while recognizing the unique electrical isolated system on the Island of Newfoundland and common accepted practice in Newfoundland and Labrador regarding the*

*electrical system. Practices unique to Newfoundland and Labrador will be noted in the body of the MHI report.*

*The Consultant will also provide such advice and other services as may be required from time to time by the Government of Newfoundland and Labrador (Client).*

**Exhibit P-00770, page 8**

*The Services which the Consultant shall perform or cause to be performed with diligence, skill and care include the following:*

*a) A review of work performed by Nalcor related to the Muskrat Falls and Labrador Island HVdc Link (LII) and the Isolated Island Option subsequent to DG2. The level of review shall be sufficient for the Consultant to report on whether Nalcor has performed work with the degree of skill, care and diligence required by customarily accepted professional practices and procedures completed in the performance of similar work. This work will be undertaken by examination of design reports, technical documentation or memos, in direct meetings with Nalcor, or with other data and information provided by Nalcor during meetings and working sessions.*

**Exhibit P-00770, page 8**

As such, MHI was not to be doing investigations or a forensic audit, but was to review the existing work of Nalcor within the above parameters. Nalcor was to provide to MHI the information required for the review.

### **Timeline**

In order to understand the request of MHI by the Government and its scope, it is useful to review the sequence of events as they unfolded, at least in so far as MHI understood why they had been retained and what was to be done.

- MHI was retained in July 2011 by the Board of Commissioners of Public Utilities Newfoundland and Labrador ("the Board") to review the technical feasibility and cumulative present worth analysis for the two power supply options identified a Reference Question issued by the Lieutenant Governor in Council of Newfoundland and Labrador (Exhibit P-00048, page 7).
- The qualifications of those involved in the review are found at Exhibit P-00049, page 213 and following. Many of the same individuals were involved in the review for the Government.
- The review is described in the MHI report to the Board as: *"The investigation was approached from two perspectives: a technical review of available studies and related information from Nalcor to determine if the degree of skill, care, and diligence required to meet utility best practices and procedures were followed for the work done to date,*

*and a financial review of the cumulative present worth analysis used to select the least cost alternative. MHI has documented the results of these reviews in the two volumes of this report” (Exhibit P-00048, page 9).*

- The factual information for that report and the subsequent report to Government was provided to MHI by Nalcor (Exhibit P-00058, page 8).
- In January 2012, MHI delivered a two volume report to the Board (Exhibits P-00048 and P-00049).
- Pages 40 and 41 of Exhibit P-00048 are instructive in understanding the inputs to the CPW analysis. The evidence of MHI elaborates on this process (Transcript of Evidence, October 30, 2018, No. 28, pages 99-100) and confirms that it relied on information from Nalcor for those inputs.
- On February 15, 2012, MHI presented its report in a hearing before the Board of Commissioners of the Public Utilities Board (transcripts available on the Board of Commissioners of Public Utilities Website).
- On March 31, 2012, the Board report is released (Exhibit P-00052, page 4).
- On April 1, following a meeting with the Minister of Natural Resources, Mr. Charles Bown, deputy minister of Energy, requested Gilbert Bennet (VP LCP, Nalcor Energy), to forward to MHI a request to speak with them (Exhibit P-00257).
- Former Premier Dunderdale stated that the reason for approaching MHI was because it had recently completed the review for the Board (Transcript of Evidence, December 17, 2018, No. 59, page 79).
- On April 4, 2012, MHI checks with the Newfoundland Engineers about potential conflict – and following that advice (Transcript of Evidence, October 29, 2018, No. 27, page 48) writes to the Board (C. Blundon - Exhibit P-00602) and confirms with Mr. Andy Wells, Chair and CEO of the Board of Commissioners of Public Utilities Newfoundland and Labrador that the retainer is acceptable (Exhibit P-00603).
- On May 22, 2012, the Government signs and on June 5, 2012, MHI signs agreement with the Government of Newfoundland and Labrador (Exhibit P-00770).
- MHI meets with Nalcor in St. John's to obtain information from Nalcor. A further meeting was requested to take place in Winnipeg with Nalcor. Charles Bown is present in Winnipeg for the meetings (August 2012). (Transcripts of Evidence, December 7, 2018 No. 54,p 80 and 81)
- During this time, Nalcor was continuing to develop their budget and consulting with Westney Consulting on risk analysis as well as conducting an independent project review (IPR) with an independent group, which included Richard Westney (Transcript of Evidence, November 16, 2018, No. 39, page 29-30). MHI is not involved in or aware of either the IPR or the full content of the Westney risk analysis.
- Westney prepares a Risk report for Nalcor. It is presented in a power point (Exhibit P-000130, page 283), and contains a reference to \$497 million in strategic risk.



- MHI is not provided with the entire report. The report provided to MHI deletes reference to \$497 million in strategic risk (Exhibit P-00817, Exhibit P-00818, Exhibit P-00763).
- MHI provides its final report to the Government of Newfoundland and Labrador in October 2012 (Exhibit P-00058). MHI describes its report in the following terms:

*"The Government of Newfoundland and Labrador, retained Manitoba Hydro International Ltd (MHI) to provide and independent assessment of two generation supply options, as prepared by Nalcor Energy (Nalcor) in preparation for Decision Gate 3, for the future supply of electricity to the Island of Newfoundland. MHI was asked to review the work completed by Nalcor Energy since Decision Gate 2 in preparation for Decision Gate 3 and to determine which option is the least cost based on the updated cost and technical data provided by Nalcor. MHI was also asked to complete a reasonableness assessment on all inputs into that analysis. The least cost metric for each option was computed by application of the cumulative present worth (CPW) method." (Exhibit P-00058, page 7).*

**Assessment of the cost estimates of Nalcor Energy ("Nalcor") at DG2 and DG3 with respect to estimate contingencies, including tactical risks and strategic risks**

MHI's Scope of Work

MHI was first consulted by the Government of Newfoundland and Labrador on April 1, 2012. Mr. Paul Wilson, on behalf of MHI, wrote to Mr. Bown on April 3, 2012 and presented a proposed scope of work, which contemplated consideration of such factors as:

*ix. Any new material related to wind farms will be reviewed. Nalcor's reassessment of maximum wind penetration study will be reviewed if available.*

*Information required:*

*-Wind farm updates to master cost estimate*

*-NLH wind farm maximum penetration study*

*x. The Holyrood Thermal Generating Station plans, cost estimates, and schedules will be reviewed if there are any evident departures from the original DG2 plan*

*xi. Risk Analysis review. Review Nalcor most recent risk analysis assessment for gaps, suitability to task and appropriateness of reserve margins for costs estimate contingency.*

*Information required: Strategic Risk Assessment Updated Report, and Westney update if available*

*xii. The Cumulative Present Worth study will be reassessed with DG3 inputs in both capex and opex, fuel price, and escalation, for the two options as originally presented in DG2. Departures from these plans will be identified and the impact on CPW assessed. Sensitivities performed in the DG2 review will also be reassessed with DG3 inputs.*

*Information required:*

- Disclosure of all input capex and opex input costs*
- Disclosure of all escalators used*
- Disclosure of Input fuel prices used and 203.2 PIRA fuel price forecasts*

*xiii. (Optional). In order to assess the necessity of both the Emera export deal and the Federal Loan Guarantee prior the DG3 project sanction decision a review of the Integrated Financial Forecast (3.0 and 20 year periods) for Nalcor is recommended. This would be a full revenue/expense model and process review together with a minimum rate base study. A sensitivity analysis would also be carried out to gauge the impacts of capital cost overruns, fuel price variability, fiscal performance with and without the Emera export revenues and supply and impact of the Federal Loan Guarantee. Note: this may be very labour intensive review and may not be possible with in the time frame available.*

*Information required:*

- Under discussion internally*

**Exhibit P-00741, pages 4-5**

The initial scope of work presented to the Government was thus broader than what the Government ultimately included in the scope of work it contracted to MHI. The final contract was signed and with the exception of portions of point “x” above, did not contain provisions “ix – xiii” in the final scope of work. Specifically, it did not include a review of the export revenue, rate review, the loan guarantee, or the risk analysis as referenced specifically in section xi above.

Mr. Wilson commented that these items were specifically excluded from the MHI review.

**Transcript of Evidence, October 30, 2018, No. 28, page 7**

In the original proposal, MHI was specifically asking for the updated Westney strategic risk assessment. This section was deleted from the scope of work as proposed by MHI.

MHI’s primary and only contact with representatives of the Government of Newfoundland and Labrador was through communications with Charles Bown, deputy Minister of Energy.

Former Minister Kennedy gave evidence of notes he had in which he and others in Government discussed removing the provisions relating to risk (section xi) from the scope of work. He accepted that it was removed by government after discussion with others in government.

*MR. LEARMONTH: – the risk analysis. So we know it's a specific recommendation, I guess, that there be a risk analysis and there is reference to Westney and so on. So when you took that out –*

*MR. KENNEDY: Yeah.*

*MR. LEARMONTH: – your government took that out, wasn't it open to Manitoba Hydro to say they don't want that done?*

*MR. KENNEDY: Sir, I – it's not consistent with what I was attempting to do but I do accept that it was done and that Mr. Bown – there's reference to the notes which indicated it was – it appears to have been discussed with various ministers and/or officials. Yeah.*

**Transcript of Evidence, December 5, 2018, No. 52, page 49**

...

*MR. LEARMONTH: Yes, I realize that, but if the paragraph Roman numeral xi in the first draft from Mr. Wilson, which dealt with a risk analysis and review of Westney documents, if available, if you took – if that was taken out from their scope of work, how would it be possible –*

*MR. KENNEDY: Yeah.*

*MR. LEARMONTH: – for MHI to meet your objective?*

*MR. KENNEDY: That's a fair point, Mr. Learmonth.*

**Transcript of Evidence, December 5, 2018, No. 52, page 48**

When Mr. Bown gave evidence about how the contract came about he acknowledged that the scope of the contract had been changed at the Government's request. Although he stated to Mr. Learmonth and to Ms. Best (Transcript of Evidence, December 7, No. 54, page 20) that he felt the revised scope was broad enough that if additional information became available they would include it, he also suggested that would be up to MHI.

*MR. BOWN: Very clearly, that they would review all the costs for DG3 and provide us with a view of what has changed since DG2, and provide us with an assessment whether the cost inputs, as they've changed, are reasonable.*

*MS. E. BEST: Okay. So, if some of those costs are supposed to include risks, then would that also be included?*

*MR. BOWN: I made this comment yesterday in my testimony, that the scope was broad enough and general enough that as – if any additional information would become available to them, that they would include that; they weren't restricted to that.*

*MS. E. BEST: Okay. And, section eight, viii, there next, so: "A review of the CPW input changes and results for the DG3 inputs for both the Isolated Island and Interconnected Island alternatives." And then it goes on and it states there specifically in the bullets: Revised capex cost variations. Again, this section, would this similarly encompass risk?*

*MR. BOWN: The point is that they were asked to review all inputs for cost, and acknowledged that at the outset the – or, risk was removed but the scope was written broad enough should that, any additional information become available to them as they were doing their work, they would include it.*

*MS. E. BEST: Okay.*

*MR. BOWN: They would make that determination themselves.*

**Transcript of Evidence, December 7, No. 54, page 20**

....

*MR. SIMMONS: Right. So regardless of what Mr. Harrington (Nalcor – LCP Project Director) might have been saying internally or communicating at that time, it's – the decision has already been made about whether risk will be included in MHI's review.*

*MR. BOWN: Now, I think those – without seeing them I think they relate to some additional fine tuning and there was some additional references to risk that were removed.*

**Transcript of Evidence December 6, 2018 No. 53, page 105**

In the cross examination by Mr. Simmons, he acknowledged that Nalcor influenced the scope of the work which MHI was to do. He noted that the Premier and Minister Kennedy were in part driven by a deadline (Transcript of Evidence, December 6, 2018, No. 53, pages 102–105).

It is therefore clear that the Government specifically removed "risk analysis" from MHI's Scope of Work (*i.e.*, an assessment of strategic risk, the loan guarantee, Emera, etc.)

Further, many in Government were aware that the risk analysis had been removed from the scope of work to be done by MHI.

*MR. LEARMONTH: Everyone would have known. So, this is not Charles Bown making this decision with – just with Mr. Kennedy. The knowledge of the removal of that clause XI – Roman numeral XI – was known throughout government to your knowledge. Is that a fair comment?*

*MR. BOWN: I can't say it 100 per cent certain.*

*MR. LEARMONTH: But at least the people –*

*MR. BOWN: At least the people (inaudible) –*

*MR. LEARMONTH: – at the meeting knew about it.*

*MR. BOWN: – would have known that risk could not be done.*

*MR. LEARMONTH: Yeah. And there was a representative of the premier's at that meeting. Is that correct?*

*MR. BOWN: Yes. Yes*

**Transcript of Evidence, December 5, 2018, No. 54, page 124**

During the cross examination of MHI by Mr. Learmonth, suggested that MHI had been retained to review the “business case” for Muskrat Falls. Describing the work being done by MHI as assessing the “business case” is not an accurate portrayal of the work that was to be done by MHI, since developing or reviewing the business case involves many more components than reviewing the cost inputs for reasonableness.

MHI’s engagement with the Government was defined by the Scope of Work such that MHI was not expected or required to do a complete “business case” analysis on the MF project. In order to fully conduct a business case for Muskrat Falls, MHI would have had to consider such factors as the potential for export revenue and the rate impact, the Emera contract and the loan guarantee - all matters which were explicitly excluded from the review. And of course MHI was not provided with the estimate of strategic risk, (which others have defined as including the political and social risk), nor was it asked to review it.

*MR. WILSON: This particular document (Exhibit P00821) deals with the management reserve and strategic risk, and we were never provided any documentation by Nalcor at the time on that particular topic. And in addition, the area of strategic risk or risk analysis was essentially removed from our scope of work.*

**Transcript of Evidence, October 29, 2018, No. 27, page 9-10**

*MR. LEARMONTH: Yeah, yeah. So how do you feel about the fact that it wasn't provided to you?*

*MR. SNYDER: Well, you know, it's something that we didn't know that was going on and, you know, it's a little disappointing but it's, you know – we also knew that the government, you know, was going to assume the responsibility for the risk – strategic risk factor.*

**Transcript of Evidence, October 29, 2018, No. 27, page 11**



MR. LEARMONTH: So are you saying, Mr. Wilson, that your engagement by the Government of Newfoundland did not require you to assess the business case for the Muskrat Falls Project? Is that what you're saying?

MR. WILSON: That's a fairly broad question, Sir. The business case –

MR. LEARMONTH: Well, I asked you whether – is that what you're saying?

MR. WILSON: – means everything. Everything: rates, financing, loans, management reserves, all the cost estimates, the whole pie, I guess, in context of all options. And so the Decision Gate 3 – you know, the Gatekeeper needs to consider many more things than just what MHI was engaged for

**Transcript of Evidence, October 29, 2018, No. 27, page 25**

MS. VAN IDERSTINE: And we've heard some questions put to you about whether or not it was a business case that you were reviewing. Did you – were you reviewing the business case?

MR. WILSON: No, we were not. We were reviewing the CPW analysis and they're quite distinct.

MS. VAN IDERSTINE: And what would go into a business case analysis?

MR. WILSON: I'm going to let Al Snyder actually respond to that, he'd be better qualified to.

MS. VAN IDERSTINE: Okay.

MR. SNYDER: A business case would have all of the costs, all of the options available. And you'd want to ensure that you'd captured everything along the way: all of the risks that would be inherent in projects, inherent in staffing, inherent in setting up, inherent in getting licences.

MS. VAN IDERSTINE: Does it – what does it include, a review of rates?

MR. SNYDER: No.

**Transcript of Evidence, October 30, 2018, No. 28, page 96**

Mr. Bown confirmed that MHI was not to look at these factors.

MS. VAN IDERSTINE: Yeah, you've now had that MHI DG3 report. MHI did not – was not asked to look at the economic analysis of the export markets though, were they?

MR. BOWN: No.

MS. VAN IDERSTINE: No, but that was something you – the government had advice with respect to that particular issue?

*MR. BOWN: Nalcor was providing advice on that.*

*MS. VAN IDERSTINE: MHI did not look at the Emera agreement – that was something else that was separate?*

*MR. BOWN: No.*

*MS. VAN IDERSTINE: They didn't look at the loan guarantee. That was something else that was separate?*

*MR. BOWN: Correct.*

*MS. VAN IDERSTINE: They weren't to look at political concerns or environmental concerns. I take it that was something that was separate?*

*MR. BOWN: It was not included.*

**Transcript of Evidence, December 7, 2018, No. 54, page 85**

The Scope of Work required MHI to review base cost estimates and contingencies in inputs into the CPW analysis.

In preparing the cost estimates, MHI's evidence was that:

- MHI was able to gather sufficient information from Nalcor to assess whether or not the information received from Nalcor was reasonable or not (Transcript of Evidence, October 29, 2018, No. 27, page 7).
- MHI met with Nalcor representatives and asked questions about all aspects necessary for the CPW and received reasonable answers from Nalcor representatives (Transcript of Evidence, October 29, 2018, No. 27, page 7).
- Its report included a "reasonableness assessment" of all the inputs into that CPW analysis (Transcript of Evidence, October 30, 2018, No. 28, page 56).
- A CPW analysis is a comparative analysis which requires that the inputs on one alternative be compared to similar or the same inputs of the opposite alternative, meaning that if risk is included in one assessment, similar or the same risk must be included in the alternative assessment (Transcript of Evidence, October 29, 2018, No. 27, page 13):

*"When – and I've already said it, and I'll say it again – that when we were looking at, during the CPW, the responsibility – one of the major responsibilities I had was to make sure that we brought a balanced perspective to both options. If we're going to bring the strategic risk in on the Interconnected side, we also have to do it on the Isolated side."*

So although MHI provided assessments of some risk, it was not providing the "business case" for the development of Muskrat Falls, nor was it providing an analysis of the strategic risks.

With provision “xi” from the draft scope of work having specifically been deleted in the final contract with the Government, it can hardly be surprising that MHI did not then consider it part of their retainer to include commentary on the strategic risks of the cost estimates of Nalcor Energy (“Nalcor”) at DG2 and DG3 in their final report, nor were they to have commented on the business case.

MHI delivered its report to the Government of Newfoundland and Labrador on October 27, 2012. As is customary in the industry, MHI presented drafts of the report to the Government prior to finalizing (Transcript of Evidence, October 29, 2018, No. 27, page 9). This is to ensure that the work being delivered meets the client’s needs and fulfills the scope of work contracted. In the 6 years between delivering the report and the Inquiry nobody communicated any concerns to MHI about the final report it prepared or any concerns that it did not contain the assessment it was to have performed (Transcript of Evidence, October 30, No. 28, page 102-103).

Former Minister Kennedy had the opportunity to review the draft report in September 2012 and did not ask any questions about risk or suggest the report was incomplete:

*MS. VAN IDERSTINE: So do you know, had Mr. Kennedy reviewed them, the MHI draft report that came in earlier that day before this meeting?*

*MR. BOWN: I can’t say that he would have reviewed it. I can’t –*

*MS. VAN IDERSTINE: Do you know whether you had reviewed it?*

*MR. BOWN: I would have.*

*MS. VAN IDERSTINE: And so the contents of that report would have been discussed at this meeting, then, I take it.*

*MR. BOWN: Yes, I would have given an update ...*

**Transcript of Evidence, December 7, 2018, No. 54, page 83**

Nalcor similarly had an opportunity to review the draft report and did not flag that there was approximately \$500 million of strategic risk left out of the report despite their identifying other issues which they sought to clarify:

*MS. VAN IDERSTINE: So I – and just to confirm, you had an opportunity, then, to review that report before it was finalized?*

*MR. HARRINGTON: I did, yes.*

*MS. VAN IDERSTINE: And were aware that it did not include anything about strategic risk.*

MR. HARRINGTON: *That's correct.*

**Transcript of Evidence, November 21, 2018, No. 43, page 13**

Charles Bown, on behalf of the Government did not flag any concerns about any facts, details or failure to fulfill the scope of work when he reviewed the draft reports, nor did any of the Ministers who received the technical briefing on the report (Transcript of Evidence, December 7, 2018, No. 54, page 51, 79).

MHI believed that the exchange of drafts of the final report between MHI and the Government could be characterized as "common practice" between a service provider and a client (Transcript of Evidence, October 30, 2018, No. 28, pages 28-29).

Maureen Greene confirmed that the Board of Commissioners of the PUB had also received draft reports from MHI when MHI was working for them, as well as from other experts. She also confirmed that she had provided feedback which was then incorporated into the report.

*MR. SMITH: Could we take it from that that in this area, in the area of expert reports and, particularly, not only just the PUB, but I assume in your former life you would have some dealings with expert reports dealing with the Newfoundland and Labrador Hydro?*

*MS. GREENE: I have read numerous expert reports over my career.*

*MR. SMITH: No, I meant drafts and make –*

*MS. GREENE: Oh, yes. MR. SMITH: – suggestions.*

*MS. GREENE: I have – yes, I have reviewed drafts. Some are – require some more comments than others, just the nature of the subject matter and the expert.*

*MR. SMITH: Is it a common occurrence in this field, where experts would provide drafts to retaining party and the retaining party would offer commentary on those drafts?*

*MS. GREENE: It has been the practice that I have seen. I would say the comments on the MHI report were probably more extensive than I may have provided on other reports because of that. It was – that was the problem. It wasn't with respect to the substance of the report, it was with respect to the very evident writing, different writing styles among several authors who – it was like they all wrote a little section and it was just coming together and there was no overall view or no – that type of thing.*

**Transcript of Evidence, October 24, 2018, No. 24, pages 89-90**

Mr. Bown confirmed that when Ziff Consultants had been retained to provide reports to Government they had provided drafts.

*MR. SIMMONS: Yes. Scroll down – okay stop there please. Now here's another message from you on – in the evening of Wednesday, October 31, it's to Bob Fleck, who is the*

*gentlemen who you were corresponding with to get this report prepared from Wood Mackenzie, I believe.*

*MR. BOWN: Mm-hmm.*

*MR. SIMMONS: And you start out by saying: "Can you edit the first sentence to note that you reviewed an analysis by ziff on a pipeline solution for grand banks gas rather than a report by Ziff." So is this consistent with the comments that we just saw from Mr. Foote and Mr. Keating?*

*MR. BOWN: Right.*

*MR. SIMMONS: That what needed to be changed was the reference in the first sentence to make it clear that this report was just December 6, 2018 No. 53 Commission of Inquiry Respecting the Muskrat Falls Project 100 addressing the pipeline solution because that's, in fact, what the content of it was?*

*MR. BOWN: That's correct and I raised that yesterday as well.*

*MR. SIMMONS: And that all this happened after you had been instructed by the minister to contact Wood Mackenzie and have the change in the content of the report made*

*MR. BOWN: That's correct.*

**Transcript of Evidence, December 6, 2018, No. 53, page 99-100**

MHI provided drafts of its report to Mr. Bown, who in turn provided them to Nalcor, to his own staff and to Minister Kennedy, following which Mr. Bown would discuss any concerns that may have arisen from what they reviewed with Mr. Wilson (Transcript of Evidence, December 7, 2018, No. 54, page 80).

By the time Nalcor and Mr. Bown met with MHI representatives in Winnipeg in August 2012, MHI had provided preliminary and as yet incomplete drafts of its report to the Government. In August 2012, Nalcor was still providing MHI with additional information including the redacted Westney report that only includes the \$367 million in tactical risk although not the \$497 million in strategic risk which it had in its possession. Having been provided with the information about tactical risk, MHI then included the \$367 million in tactical risk in their final report.

*MR. LEARMONTH: And so that's 367, 368 million or 7 per cent of the estimate for tactical risk, right?*

*MR. WILSON: That's correct.*

*MR. LEARMONTH: Contingency for tactical risk. And was that a relevant document for you to have received from – received?*

*MR. WILSON: Yes, it was. It was actually – these values are added in to the base cost estimates –*



MR. LEARMONTH: Yeah.

MR. WILSON: – as input into the CPW.

Transcript of Evidence, October 29, 2018, No. 27, page 14

This was in contrast to the issue of strategic risk.

MR. WILSON: Not necessarily. We've taken that position – tactical risks were part of the base cost estimates and strategic risks accrued to management reserve, which was treated outside this – outside of our review – and we were, you know, not given that information, either.

Transcript of Evidence, October 29, 2018, No. 27, page 38

MS. VAN IDERSTINE: There have been – could we have Exhibit 00452, please, brought up? You don't have it in front of you.

MR. WILSON: Okay.

MS. VAN IDERSTINE: And if we could go to page 5. Now, we understand the Commission has heard already from Mr. Brockway, retained by Grant Thornton, and if we go down, Grant Thornton being another expert. Go down to page 5 of this report and just scroll down a little further, just before that says: Our Team. Do you see where it says: "We further understand that an interim draft of the paper will be circulated to various parties for" the "purposes of obtaining input with respect to the accuracy of the facts presented." You see that?

MR. WILSON: I see it, yeah.

MS. VAN IDERSTINE: Now, when you were circulating the reports to Nalcor, is that consistent with the sort of thing that you were doing with Nalcor?

MR. WILSON: That's correct.

MS. VAN IDERSTINE: And when Nalcor came back to you with suggestions or edits that they thought would be appropriate, did you just accept those edits because they told you to?

MR. WILSON: We would review those edits. You know, if it's warranted or it has no impact on the outcomes of our analysis then, yes, we would accept them or offer alternate wording.

MS. VAN IDERSTINE: And if they had suggested things that would alter your outcome or your opinions, how would you have responded?

MR. WILSON: No.

MS. VAN IDERSTINE: No, being ...?

*MR. WILSON: No, we won't accept those changes*

**Transcript of Evidence, October 30, 2018, No. 28, page 106**

The evidence of both government and of those who gave expert evidence on their practice of consulting was that it was common practice to share a report with a client so the client is aware of the contents of the report, can review it for accuracy/errors, and allow the client to provide its comments, which could result in necessary revisions prior to finalizing. There is nothing untoward with this practice (Transcript of Evidence, October 30, 2018, No. 28, page 102).

MHI was not "pressured" by either Nalcor or the Government to delete content from the report. It prepared a report in a manner consistent with other experts and within the scope of its retainer (Transcript of Evidence October 30, 2018, No. 28 pages 27-28, 55, 106, 107).

MHI therefore submits that the content of MHI's final report fulfilled MHI's scope of work as requested of them by Government and any revisions made prior to providing the final report did not alter the findings contained in the final report prepared by MHI.

MHI is not commenting on the policy of whether this practice is one which should be followed, but asks that the Commission recognize that in taking these steps MHI was following industry practice and did so in a way which was transparent to the client - in this case, government.

**Concluding that the cost estimates of Nalcor at DG3 were reasonable based on a P50 value**

MHI's evidence that the use of a P50 factor was consistent with other recent hydroelectric projects in Canada. MHI understood that a P50 value was used in hydro projects in Manitoba, British Columbia and Quebec (Transcript of Evidence, October 29, 2018, No. 27, page 78; Transcript of Evidence, October 30, 2018, No. 28, pages 90-91)

Although the Grant Thornton forensic audit report provided an opinion that a P70 factor would be appropriate for Muskrat Falls, MHI submits that the use of a P50 for sanctioning the MF project was reasonable at the time and would still be appropriate today if cost estimates are appropriately done (Transcript of Evidence October 29, 2018 No. 27 page 79).

*MR. BUDDEN: Well, if we put it that way, would it justify perhaps the exclusion of the strategic risks from the CPW comparison?*

*MR. HARRINGTON: Well, the strategic risks were never involved – never included in the CPW analysis, because if you included strategic risks on one side – and as Mr. Kast, I think, sitting here a few weeks ago, stated that if you included strategic risk on the connected island, the Muskrat Falls-type project, you would have to include strategic risks on the Isolated Island, and that would throw the balance out even more. So the CPW analysis was done at – without strategic risk on either side. It was done at a P50 level, apples to apples.*

**Transcript of Evidence, November 20, 2018, No. 42, page 73**

MR. WESTNEY: And I can't say for sure that Mr. Dodson never said that one should be P75, either. But generally speaking, there are some companies who will fund a project at higher than P50, but of course the other side of that – the unintended consequence, really, is that you now have a higher level of contingency; money tied up in this project that could be used somewhere else, to meet, perhaps, unnecessarily high confidence level –

MR. SIMMONS: Right.

MR. WESTNEY: – on tactical risk.

**Transcript of Evidence, November 16, 2018, No. 39, page 53**

MR. SIMMONS: Well, actually, if we stop for a moment. Because I understand your point here now – that we're dealing with tactical risk, and that if I understand you correctly, P50 you would regard as being acceptable for a tactical risk? Is that correct, or –

MR. WESTNEY: Yes –

**Transcript of Evidence, November 16, 2018, No. 39, page 54**

Interestingly, Westney did not include any comment on the reasonableness of the P value in their report because as Mr. Westney stated, it was not within the scope of their work (Transcript of Evidence, November 16, 2018, No. 39, page 54).

Mr. Kean, on behalf of Nalcor, provided the following email following his meeting with Mr. Westney in March 2012 (Exhibit P-01019):

*"As for accuracy of the DG3 estimate, an analysis of the Westney report indicates that the accuracy of the current P50 estimate is -11% to 13.1%. Thus, there is a 10% likelihood of the outturn cost will be 11% less than the P50 value used in the CPW analysis, and there is only a 10% likelihood that the outturn cost will be more than 13.1% beyond than the P50 value used in the CPW analysis. While we do not have a definitive accuracy assessment for the DG2 estimate, it was considered to meet the requirements of a Class 4 estimate with a typical accuracy range of -30% to +50%. The accuracy and quality of the DG3 estimate is well within the required accuracy of a Class 3 estimate, and more towards a Class 2 estimate." (March 6, 2012)*

MHI was tasked with assessing the reasonableness of the estimates prepared by Nalcor. In supporting Nalcor's use of a P50 estimate at DG3, their opinion was consistent with that being done, to their knowledge, in similar projects which had been developed in Canada around that time.

Of some interest is that the Independent Engineer retained by the Government of Canada, (Exhibit P-01930, page 113 –as referenced in Transcript of Evidence, March 19, No 13, pages 94,95) also relied on information provided by Nalcor and wrote in its final report:

*"The contingency allowance figures for the three sub-projects are identified in Table 5-1. As defined by the PMI and the AACEI, a scope or tactile contingency is used to offset known project risks and/or market conditions. While Nalcor adopted a theoretical P50 contingency for "tactile" type risks based on analytical statistical modeling (i.e., range uncertainty) of the project's sub-element summary budgets, the IE is of the opinion that the calculated overall 6 percent scope contingency representing an adder of \$368M to the project budget is not conservative relative to our legacy experience with similar remote heavy-civil construction endeavors, and is, therefore, judged to be somewhat optimistic. The IE typically sees scope or tactile contingency allowances in the range of 8 percent to 12 percent at comparable DG3 stage gates. A mitigating circumstance for the current LCP budget is the fact that cost certainty has been achieved for the awarded-to-date work (See Section 5.1.4) that provides a rationale to carry a reduced contingency allowance"*

The Independent Engineer further wrote (Exhibit P-01930, page 114 – could not find this in the stated exhibit):

*"Typically, a separate allowance for unknown project risks, known as the management reserve is provided as an additional backstop to mitigate untheorized risks, changed field conditions, or strategic risks that the conventional scope contingency doesn't cover. The management reserve is usually controlled by the owner or entity sanctioning the project which represents the Province of Newfoundland and Labrador. As per AACEI standard practice, the scope contingency is assumed to be spent during project execution while the management reserve is considered to be unspent in entirety during project execution."*

In his evidence, Mr. Argirov (Independent Engineer) stated:

MR. ARGIROV: – but MWH didn't make any major comment –

MR. SIMMONS: Mm-hmm.

MR. ARGIROV: – when it comes to this P50.

MR. SIMMONS: Right.

MR. ARGIROV: And in industry, you can see all kinds of different variations.

MR. SIMMONS: Mm-hmm.

MR. ARGIROV: It could be P50, P75 or P25 or something like this.

MR. SIMMONS: Mm-hmm.

MR. ARGIROV: So the ranges depends on the level of definition of the project.

The Independent Engineer report is dated December 2013, over a year after the MHI report and would have had finalized contracts to review, and further information as to the status of the project.

Mr. Dodson gave evidence on behalf of Westney Consultants with respect to their advice (which was not shared with MHI) and stated:

*MR. DODSON: Well, basically, our advice is the tactical risk assessment is about how well the estimate was put together; it has to do with the quantification and with the degree of design development. So it is a known risk as opposed to an unknown risk. And our recommendation is for our a team target of P50 on the tactical risk, which was consistent with what the team was already looking at in terms of their view of the project, so our recommendation is P50 on the tactical and, as I said earlier, P75 on strategic.*

**Transcript of Evidence, February 25, 2019, No. 7, page 9**

*MR. DODSON: Well, statistically, that's incorrect – statistically, it can be P25 to P75.*

*MR. SIMMONS: Okay.*

*MR. DODSON: It can be lower. People – historically, before we had this great change in productivity, P50 used to be realized. I haven't seen it realized in many years, but it is possible.*

**Transcript of Evidence, February 25, 2019, No.7, page 23**

The suggestion that P50 was recommended for tactical risk (with P75 for strategic risk – although he also acknowledged that they had not been retained to provide the P values) (Transcript of Evidence, February 25, 2019, No. 7, page 10) – is consistent with MHI's finding that the use of P50 was reasonable for the assessments being done at DG3 (in 2012) relating to the cost assessment they were retained to perform. As is evident from Mr. Dodson's and others' evidence, the use of a P50 has limitations in that it permits an equal likelihood of being over or under estimate, but was certainly in use in 2012 on megaprojects. This may not be the case now. It was conservative and at the low end, but it was the reasonable assessment based on the available information in 2012. It did not include the strategic risk.

The Commission retained Dr. B. Flyvberg to provide evidence in cost estimating in megaprojects and while he gave evidence on cost overruns on megaprojects and his views of the necessity to use a higher P value, his evidence is retrospective and not based on preparing actual estimates, nor in reviewing the facts surrounding Muskrat Falls. He is looking back at known and completed projects and compares their budgets with actual costs at completion. His research and opinions undoubtedly provided the Commission with information and guidance to inform its recommendations but should not form the basis for criticizing those who followed industry norms at the time.



**Did MHI know or ought it have known that \$500 (497) million of strategic risk exposure had been excluded from the capital cost estimate for the Interconnected Island Option**

MHI's evidence is that it was not made aware at the relevant time of the \$500M "strategic risk" reserve as contained in the Westney Consulting report (Transcript of Evidence, October 29, 2018 No. 27, pages 9- 10; Transcript of Evidence, October 30, 2018, No. 28, page 105).

Gilbert Bennett gave evidence that he was aware from his review of the MHI report that it did not contain any comment or assessment of strategic risk.

*MR. BENNETT: (Referencing P-00058, p. 44) I think it would be a stretch to take that sentence where they've identified some specific risks that are relevant to the project and translate that to, well, they've looked at all the strategic risks.*

*MS. O'BRIEN: Okay, but would you not at least think that they've looked at labour availability and productivity?*

*MR. BENNETT: Oh, well, they said that they – I – they understood that they were risks without categorizing them as to being tactical or strategic.*

*MS. O'BRIEN: But you're aware that MHI did not review – that the work that Nalcor had done with Westney Consulting in trying to evaluate what would be an appropriate reserve to address risks such as labour availability and productivity.*

*MR. BENNETT: I understand that.*

*MS. O'BRIEN: You would know that.*

*MR. BENNETT: Right.*

*MS. O'BRIEN: And that was not provided to them by Nalcor, that information, you know that.*

*MR. BENNETT: Right. I understand that.*

**Transcript of Evidence, November 28, 2018, No. 48, page 13**

The page from the Westney power point identifying the strategic risk was not provided to MHI, nor was it provided to the Independent Engineer (Transcript of Evidence, March 19, 2019, No. 13, page 18).

Each MHI Panel member confirmed that they had not seen the document containing the \$500 (497 million) strategic risk exposure at the relevant time and had not seen it until the Inquiry.

- P Wilson (Transcript of Evidence, October 29, 2018, No. 27, page 9)
- Snyder (Transcript of Evidence, October 29, 2018, No. 27, page 10)
- Kast (Transcript of Evidence, October 29, 2018, No. 27, page 11)

Rather, the sequence of events giving rise to the production of that report and information about it is found in a review of the email exchanges surrounding the production of this report, as well as in the evidence of MHI, Jason Kean, Paul Harrington and Gilbert Bennett.

Exhibit P-00816 – email from Paul Harrington:

*“c)Outcome*

*A report on the reasonableness of the MF cap cost estimate and schedule as inputs to the CPW - keep this in mind we do not have to go down to a detailed level to pass this test of reasonableness, so avoid going into the weeds on our work We should be respectful, helpful but we should not offer anything outside of the Terms of Reference and Scope of work without internal agreement, if they ask for something then Gilbert, Brian or I will step in if needed. We can let them look at most things at the high level and if they want to burrow down deeper then we shall have to caucus on that. We can play it by ear in the meeting and take the lead as shown above. So only bring along high level documents as indicated above”.*

Exhibit P-00817: “It is what we provided to MHI” email from Brian Crawley to Paul Harrington. The reference is to the redacted report.

Exhibit P-00818:

*“Brian I have taken slide 12 out of the deck you sent me- I do not believe we actually shared this with MHI. Paul.”* (This is in reference to the slide with the \$497 million of strategic risk).

Transcript of Evidence, November 8, 2018, No. 35, page 100 shows Mr. Kean referencing a Westney report presented to MHI that doesn’t include strategic risk.

*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.*

**Transcript of Evidence, November 8, 2018, No. 35, pages 100-101**

*MS. VAN IDERSTINE: No, they had not been provided with the slide with strategic risk on it.*

*MR. HARRINGTON: Oh, yes. Let's get that right. Yes, correct.*

*MS. VAN IDERSTINE: And that was your understanding in August of 2012, which is why you've sent the email saying that.*

*MR. HARRINGTON: Yes by MHI*

*MS. VAN IDERSTINE: So I – and just to confirm, you had an opportunity, then, to review that report before it was finalized?*

*MR. HARRINGTON: I did, yes.*

*MS. VAN IDERSTINE: And were aware that it did not include anything about strategic risk.*

*MR. HARRINGTON: That's correct.*

**Transcript of Evidence, November 21, 2018, No. 43, page 13**

Tactical risk is separate from strategic risk. It is contained in the base estimate and was considered by MHI. Strategic risk and management risk are held by the gatekeeper and shareholder and were not considered by MHI.

*MS. VAN IDERSTINE: – that the management risk and a strategic risk is something that, from your understanding, was being dealt with by the Gatekeeper and the shareholder.*

*MR. HARRINGTON: Yes.*

*MS. VAN IDERSTINE: And in – that's how you would – what you would've talked with your staff about, in terms of – that was what their general understanding would've been as well.*

*MR. HARRINGTON: Yes.*

**Transcript of Evidence, November 21, 2018, No. 43 page 10-11**

*MR. SMITH: I'm going to refer you to your transcript in your interview with Commission counsel, page 139. And in that you state: We discussed the red-meat syndrome concept. During any time that we had a discussion on costs and contingency prior to and after sanction, this was the view that was given to all the people who were in the decision making frame for the Government of Newfoundland and Labrador, not me, okay? The confident report from Nalcor was that they had prepared this so as to ensure that they would keep costs down, and, in so doing, it was necessary to keep contingency tight so as not to attract companies to draw down on the contingency.*

*MR. BOWN: Correct.*

*MR. SMITH: Okay. So there was a concerted effort and – known to government that there would be tight contingency amounts. There wouldn't – they wouldn't be, shall we say, flush with cash?*

*MR. BOWN: You are correct, that is what I said at – in my testimony, and I agree that, in response – and I think Mr. Kennedy may have touched on it, you know, why – questioning contingency, why the contingency's so low, and the response was the purpose was to keep it low so as to not attract contractors to try and avail of the contingency amount so as to drive up the cost.*

**Transcript of Evidence, December 7, 2018, No. 54, pages 14-15**

MHI was also not advised of the risk to the project completion date.

*MS. O'BRIEN: But you're aware that they (MHI) weren't provided the information by your project management team that Westney had determined that schedule to be a P1.*

*MR. BENNETT: I understand that and I agree with that.*

**Transcript of Evidence, November 28, 2018, No. 48, page 14**

Nevertheless, the evidence of MHI as presented in the Inquiry is that they would have liked to have known about this calculation of strategic risk and that, had they known it, it would likely have found its way into the report, despite it not being within their scope of work. It is however important to understand that in a CPW analysis, if strategic risk had been included for the Interconnected option, a provision for it would also have had to be included for the Isolated Island option. A CPW analysis requires that there is an evaluation of similar inputs on both sides of the equation. There was no strategic risk assessment included in the CPW for either option.

*MR. LEARMONTH: And I'm suggesting to you that this information on strategic risk is something that would have to be accounted for in the cost estimate before it was used as an input. Do you agree with that?*

*MR. KAST: No.*

*MR. LEARMONTH: So you don't. So this report, you would just ignore it.*

*MR. KAST: Well, I'm not saying I'm – I would ignore it. I'm saying that we do have a – we have a collective table of talent and these gentlemen to my left made that decision. And they came up with the correct decision. When – and I've already said it, and I'll say it again – that when we were looking at, during the CPW, the responsibility – one of the major responsibilities I had was to make sure that we brought a balanced perspective to both options. If we're going to bring the strategic risk in on the Interconnected side, we also have to do it on the Isolated side.*

*MR. LEARMONTH: Yeah.*

MR. KAST: That would've been my perspective on it.

MR. LEARMONTH: Okay.

MR. KAST: If we're gonna go down that path, then let's be fair to both options.

**Transcript of Evidence, October 29, 2018, No. 27, page 11**

MHI submits that its actions taken in preparing and delivering the final report to the Government were proper and appropriate in the circumstances and in accordance with the scope of work. They were limited by the information provided by Nalcor and the scope of work requested by the Government. Their retainer did not contemplate that they would do independent investigations or fact finding. They were to review the work done by Nalcor and the information provided by Nalcor, which is what they did. Nalcor took the position as is evident in the emails and evidence of Mr. Harrington and Mr. Bennett that it was up to MHI to ask for information. While this is true, insofar as matters were within their scope of work, it is clear that Nalcor took steps to ensure that strategic risk was outside of MHI's scope of work and to then work to keep MHI's review within that scope.

In hindsight, the Government could have retained MHI to conduct the review as contemplated in the scope MHI initially presented to them. This would have been more expensive and may have taken more time. It may have caused MHI to do a more in-depth review of the risk and to comment on it. It may have prompted Nalcor to provide more information to MHI and be more forthcoming. However, all of this is speculative. What MHI knows and submits is that it was not retained to do risk analysis or to examine the business case. It was retained to review the project for:

*The review shall include an assessment of the Cumulative Present Worth (CPW) Analysis of the various components for each of the two Options, including a reasonableness assessment of all inputs into that analysis. The tests of reasonableness for this assessment are generally defined as the work following*

*(a) Good project management and execution practices, and*

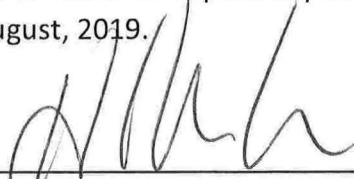
*(b) Good utility practices of the majority of electrical utilities in Canada while recognizing the unique electrical isolated system on the Island of Newfoundland and common accepted practice in Newfoundland and Labrador regarding the electrical system. Practices unique to Newfoundland and Labrador will be noted in the body of the MHI report.*

With full knowledge of the Government and Nalcor, this is what MHI reviewed, reported on and provided to the Government. If Nalcor or the Government chose not to provide information or actively kept that information from MHI, or if the Government wanted a broader or more in-depth assessment from MHI than was provided, MHI cannot now be held responsible for what may in hindsight be perceived to be gaps of information in the final report. The Government did



not request strategic risk be included in the report, or that it provide a business case for the completion of Muskrat Falls, and Nalcor did not provide strategic risk information to MHI.

All of which is respectfully submitted on behalf of Manitoba Hydro International this 9<sup>th</sup> day of August, 2019.

  
\_\_\_\_\_  
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