From: pharrington@nalcorenergy.com
To: gbennett@nalcorenergy.com
Cc: Brian Crawley; Ed Martin
Subject: Re: MHI Terms of Reference
Date: Monday, May 14, 2012 3:52:17 PM

Attachments: \_\_png

PH comments to NFL2 Proposal rev 2.docx

#### Gilbert

here are my comments

I recommend that the wording is put back to as last proposed.

My reasoning being that we should not be preparing specific documentation just for MHI - the review should be performed across the table with us, using the project documents and data in the format they currently exist in . If we go with the wording that MHI have proposed in this last go around it will be similar to the last time with us compiling and producing documentation specific to respond to MHI IR's. I would like to avoid that and get back to a review similar to an IPR where the MHI team meet with our team and have a dialogue , not an audit.

Regards Paul



PH comments to NFL2 Proposal rev 2.docx



Paul Harrington
Project Director
LC Mgmt & Support
Nalcor Energy - Lower Churchill
Project
t. 709 737-1907 c. 709 682-1460

e.

PHarrington@nalcorenergy.com

w. <u>nalcorenergy.com</u> 1.888.576.5454

f. 709 737-1985

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Gilbert Bennett---05/14/2012 03:15:03 PM---Paul/Brian, Pls review one last time asap - this should very close to the final version.

From: Gilbert Bennett/NLHydro

To: Paul Harrington/NLHydro@NLHydro, Brian Crawley/NLHydro@NLHYDRO

Cc: Ed Martin/NLHydro@NLHydro

Date: 05/14/2012 03:15 PM

Subject: MHI Terms of Reference

Paul/Brian,

Pls review one last time asap - this should very close to the final version.

Ed,

This is where we're going with MHI - we think this is workable...

G



Gilbert J. Bennett, P. Eng. Vice President, Lower Churchill Project Nalcor Energy t. 709 737 1836 f. 709 737 1782

⊇.

gbennett@nalcorenergy.com
w. nalcorenergy.com

---- Forwarded by Gilbert Bennett/NLHydro on 2012-05-14 03:13 PM -----

From: "Bown, Charles W." <cbown@gov.nl.ca>

To: <gbennett@nlh.nl.ca>
Date: 2012-05-14 02:56 PM

Subject:

My edits are attached

"This email and any attached files are intended for the sole use of the primary and copied addressee(s) and may contain privileged and/or confidential information. Any distribution, use or copying by any means of this information is strictly prohibited. If you received this email in error, please delete it immediately and notify the sender." [attachment "NFL2 Proposal rev 2.docx" deleted by Paul Harrington/NLHydro]



**Project:** Manitoba Hydro International's review of the Muskrat Falls and Labrador Island HVdc Link (LIL) and the Isolated Island options for the Government of Newfoundland and Labrador

Client: Government of Newfoundland and Labrador - Department of Natural Resources

# **PROJECT PROPOSAL**

# **Proposal Prepared for:**

Charles Bown Associate Deputy Minister P.O. Box 8700 50 Elizabeth Avenue St. John's, NL A1B 4J6 Canada

# Proposal Prepared by:

Paul Wilson Manitoba Hydro International Ltd. 211 Commerce Drive Winnipeg, MB R<sub>3</sub>P 1A<sub>3</sub> Canada www.mhi.ca

Phone: (204) 989-1271

File: NFL2

Date: May 11, 2012



# Scope of Services

# 1.0 Introduction

This proposal is in response to an enquirying from the Government of Newfoundland and Labrador to carry out the goals listed below in the scope of work. Manitoba Hydro International Ltd. (MHI) undertook prior reviews for the Decision Gate 2 process for the Board of Commissioners of Public Utilities. This project carries that review forward with engineering and estimates completed by Nalcor in preparation for Decision Gate 3 subsequent to the previous project.

MHI possesses a roster of well-qualified personnel to draw upon for this assignment. In particular MHI's staff has been engaged in generation planning projects in several countries throughout the world and can count on the support of Manitoba Hydro's 6000 plus employees. Our human resources capabilities are available to cover all disciplines and tasks required for the successful completion of this project. We are proposing various experts to meet the requirements of this important work, all of which have worked extensively in their relevant fields. The staff CVs are available on request.

# 2.0 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 review and technical assessment in the context of this scope of work, is to determine if Nalcor's work was undertaken in accordance with good utility practices whereby the processes, practices, and standards used in the development of the work follows the practices, standards, and processes of a majority of the utilities in Canada.

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).

### 3.0 Services

The Consultant acknowledges that the Client is relying on the skill and knowledge of the Consultant in performing the Services. The Consultant shall exercise the degree of skill, care and diligence required by customarily accepted practices and procedures for such a Contract.

The Consultant shall only use key personnel to perform the Services who have been named by the Consultant in the Proposal and who have been accepted by the Client. The Consultant may only substitute or replace the accepted key personnel with the prior written agreement of the Client

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 (LIL) 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.

The review will focus on the reasonableness of existing engineering or financial documents used in the development of the CPW analysis including design documents, design studies, material and equipment specifications, cost estimates and schedules. No new information, data or reports are to be developed by Nalcor for this review to proceed except those already scheduled by Nalcor to meet its prior commitments for Decision Gate 3. MHI's final report will include a summary of which documents were reviewed, a summary of meeting notes with Nalcor, identification of salient points necessary for the CPW analysis, and if the various studies were reasonable, and where applicable, prepared in accordance with good practices. The technical assessment will focus on the following areas that are generally used as inputs into the CPW analysis:

- Review of Load Forecast Update including:
  - An assessment of the reasonableness of the 2012 Load Forecasts for the Island Interconnected System. Two load forecasts are being prepared, the first for the Isolated Island Option, and the second for the Interconnected Island Option.

Information required to be made available during meetings with:

- Updated 2012 Load Forecasts for each option

**Commented [PH1]:** I recommend this is put back in , the project is dealing with many issues and preparing specific deliverables just for this MHI review will be an additional and unnecessary load

Commented [PH2]: This comment is applicable in all cases where information is to be made available and the original wording should be maintained – this new wording will impose additional work on an already overloaded team and is an IR in effect

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The information and data will be reviewed during meetings with Nalcor personnel responsible for System Planning.

#### Outcomes:

- A report on the reasonableness of the 2012 load forecast as the basis for the development of the Generation Expansions Plans and the subsequent CPW analysis.
- Review of the AC integration studies completed for the Muskrat Falls and LIL HVdc configuration options to establish the reasonableness of their use as DG3 cost inputs.

Information required available during the review

- AC integration studies report

The information and data will be reviewed during meetings with Nalcor personnel responsible for System Planning.

#### Outcome:

- A report on the reasonableness of the results of the AC integration studies and any inputs required into the CPW analysis.
- <u>iii.</u> Review of the Muskrat Falls GS post DG2 design changes, cost estimates, and construction schedules to determine their reasonableness as inputs to the CPW analysis.
- iii. -Information required to be made available during meetings held with Nalcor
  - Muskrat Falls GS current basis of design
  - Muskrat Falls GS updated design data and information including AC switchyards and transmission lines to Churchill Falls
  - Muskrat Falls updated master cost estimate
  - Muskrat Falls updated high level master project schedule

This information and data will be reviewed during meetings with Nalcor personnel responsible for the Muskrat Falls GS design to review work completed subsequent to DG2.

### Outcome:

- A report on the reasonableness of the Muskrat Falls GS capital cost estimate and schedule as inputs to Nalcor's DG<sub>3</sub> CPW analysis.
- iv. Review of the HVdc Converter Stations and associated AC switchyards. This will include a review of the single line diagram, revised cost estimates, construction schedules, and DC project definition to determine their reasonableness as inputs to the CPW analysis.

Information required to be made available during meetings with Nalcor

Information as listed above

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**Commented [PH7]:** This comment is applicable in all cases where information is to be made available and the original wording should be maintained – this new wording will impose additional work on an already overloaded team and is an IR in effect

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- HVdc updated master cost estimate
- HVdc updated master project schedule
- Shore electrode cost estimates, and construction schedules.

Note: This information and data will be made available during meetings with Nalcor personnel responsible for the HVdc Converter Stations design and AC switchyards.

#### Outcome:

- A report on the reasonableness of the transmission capital cost estimates and schedule as inputs to Nalcor's DG<sub>3</sub> CPW analysis.
- v. Review of the overhead HVdc transmission line and associated AC collector transmission lines including its reliability design criteria, route details and final metrology review. An engineering review of tower and line designs, review of cost estimates, and construction schedules will be conducted to assess the reasonableness of the transmission line design parameters as inputs to the CPW analysis. MHI will work with Nalcor to obtain a common understanding of the HVdc transmission line design philosophy and it's alignment to the design details provided and operating practices. This undertaking will clarify both the business and local issues implicit in the selection of reliability return period.

Information required to be made available during meetings with Nalcor

- Information as listed in the above paragraph
- Transmission line design basis
- Transmission line updates to the master cost estimate
- Transmission line updates to the master project schedule

This information and data will be reviewed during meetings with Nalcor personnel responsible for the transmission line design.

### Outcomes:

- A report on the reasonableness of Nalcor's transmission line design and rationale of design criteria as inputs to Nalcor's DG<sub>3</sub> CPW analysis.
- vi. Review of the Strait of Belle Isle (SOBI) marine crossing cost estimates and construction schedule to assess their reasonableness as inputs to the CPW analysis.

Information required to be made available during meetings with Nalcor

- Marine crossing capital cost estimates
- Marine crossing master project schedule

This information and data will be reviewed during meetings with Nalcor personnel responsible for Marine Crossing.

Outcomes:

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Commented [PH13]: This comment is applicable in all cases where information is to be made available and the original wording should be maintained – this new wording will impose additional work on an already overloaded team and is an IR in effect

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- A report on the reasonableness of Nalcor's SOBI cost estimate schedule as input to the DG<sub>3</sub> CPW analysis.
- vii. A review of the other changes made by Nalcor to cost inputs from DG2 to DG3 for both the Isolated Island and Interconnected Island alternatives.

Information required to be made available during meetings with

- Changes in costs between DG2 and DG3
- Supporting information to explain the changes in costs.

Outcome:

- A report on the reasonableness of Nalcor's cost inputs for the other items adjusted since DG2.
- viii. A review of the CPW input changes and results for the DG3 inputs for both the Isolated Island and Interconnected Island alternatives. The CPW analysis review will validate the results for the base case of the two options computed by Nalcor. MHI's review will include an assessment and commentary on the sensitivities on the CPW analysis:
  - Revised capex cost variations
  - Fuel price variations
  - Interest Rate variations.

Information required:

<u>- .</u>

Outcome:

- A report on the reasonableness of the inputs and results of Nalcor's <u>CPW Analysis</u> inputs for both the Isolated Island and Interconnected <u>Island alternatives, including its sensitivity analysis.</u>
- b) Preparation of a final report anticipated to include, as a minimum the following:
  - An executive summary;
  - A description of the Consultant's review team;
  - A description of the methodology used to complete the Services;
  - A summary of the results of the review, including a discussion of the materiality
    of any observations and recommendations made as well as a discussion of the
    steps taken to address such matters.
- c) Provision of ongoing support to the Client.

# Schedule Item Scheduled Completion Date

- Kick off Meeting, April 17<sup>th,</sup> 2012
- First Draft Report, July 6<sup>th</sup>, 2012
- 2nd Draft Report, July 23<sup>rd</sup>, 2012

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6/14

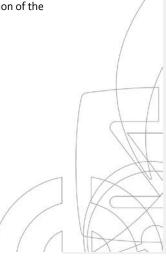
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- Submission of Final Report, July 31st, 2012
- Presentation to the Government, TBD
- Completion of Services, September 30th, 2012.

# 4.0 Financial Proposal

The following is a comprehensive Budget for the review project.

# 4.1. Summary of Costs

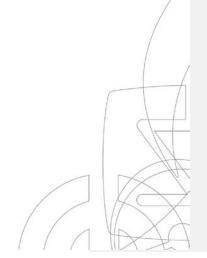
Total Project Budget: \$242,000.00

Labour: \$197,000.00 Expenses: \$45,000.00

Summary of Costs					
ltem	Costs				
Rem	Canadian Dollars (CAD)				
Costs of Financial Proposal	\$ 241,989				

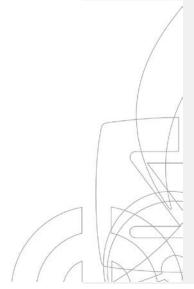
# 4.2. Breakdown of Staff Remuneration

Break down of remuneration by Consultant and position.



Breakdown of Remuneration							
Name	Position	Staff Rate Per Day (CAD)	Total Days	Total Remuneration			
Paul Wilson	Project Director	[Home] \$1,530.00	18	\$ 27,540.00			
Allen Snyder	Technical Project Manager	[Home] \$1,450.00	27	\$ 39,150.00			
Les Recksiedler	HVDC Interconnection Expert	[Home] \$1,180.00	10	\$ 11,800.00			
Mack Kast	Financial Project Manager	[Home] \$1,290.00	15	\$ 19,350.00			
Dave Jacobson	System Interconnection Engineer/Win	[Home] \$1,340.00	7	\$ 9,380.00			
Pei Wang	HVDC Performance Engineer	[Home] \$1,210.00	10	\$ 12,100.00			
Tom Moffatt	Hydro Generation Expert	[Home] \$1,450.00	10	\$ 14,500.00			
Craig Kellas	Load Forecast Expert	[Home] \$1,040.00	10	\$ 10,400.00			
Rick Horocholyn	Finance Specialist	[Home] \$1,130.00	10	\$ 11,300.00			
Martin Gerrard	Professional Writer	[Home] \$ 910.00	5	\$ 4,550.00			
Barbara Hicks	Design Specialist	[Home] \$1,230.00	7	\$ 8,610.00			
Eve Dillastone	Proof reader	[Home] \$ 520.00	5	\$ 2,600.00			
Gerald Proteau	Transmission Line Expert	[Home] \$1,210.00	22	\$ 26,620.00			
FOTAL Remuneration 156 \$ 197,900.00							

Billings are calculated on cumulative hours worked. Overtime and differentials for field work will not be applied to this project on any billings.



# 4.3. Break down by Activity

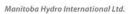
Breakdown of Labour by Activity											
Activity Number:	1	2	3	4	5	6	7	8	9	10	
Activity Description	Load Forecast 2012 Update	AC Integrations Studies Assessment	Muskrat Falls GS DG3 Assessment	HVDC Converter Stations DG3 Assessment	Transmission Line Assessment	Strait of Belle Isle Marine Crossing (SOBI) DG3 Assessment	Other Cost Estimate Revisions	CPW DG3 Analysis	Report Preparation	Report Presentation	
Names											Days
Paul Wilson		-	-	-	-		-	-	13.0	5.0	18.0
Allen Snyder		-			-	5.0	10.0	-	7.0	5.0	27.0
Les Recksiedler		-		10.0	-			-	-	-	10.0
Mack Kast	-	-	-	-	-	-	-	10.0	5.0	-	15.0
Dave Jacobson	-	7.0	-	-	-	-	-	-	-	-	7.0
Pei Wang	-	-	-	10.0	-	-	-	-	-	-	10.0
Tom Moffatt	-	-	10.0	-	-	-	-	-	-	-	10.0
Craig Kellas	10.0	-	-	-	-	-	-	-	-	-	10.0
Rick Horocholyn	-	-	-	-	-	-	-	10.0	-	-	10.0
Martin Gerrard	-	-	-	-	-	-	-	-	5.0	-	5.0
Barbara Hicks	-	-	-	-	-	-	-	-	7.0	-	7.0
Eve Dillastone	-	-	-	-	-	-	-	-	5.0	-	5.0
Gerald Proteau	-	-	-	-	22.0	-	-	-	-	-	22.0
GRAND TOTAL	10.0	7.0	10.0	20.0	22.0	5.0	10.0	20.0	42.0	10.0	156.0

#### 4.4. Breakdown of Reimbursable Expenses

	Breakdown of Reimbursable Expenses							
N°	Description	Unit	Total Units	Unit Cost (CAD)	Total Cost			
1	Domestic Airfare (Winnipeg - Newfoundland)	Per Flight	12	\$ 1,500.00	\$ 18,000.00			
2	Hotel (Newfoundland)	Per Night	46	\$ 300.00	\$ 13,800.00			
3	Car Rental	Per Day	35	\$ 77.00	\$ 2,695.00			
4	Per Diem (Newfoundland)	Per Day	46	\$ 114.00	\$ 5,244.00			
5	Airport Transfers	Per Trip	11	\$ 150.00	\$ 1,650.00			
6	Communication and Reproduction Costs	Per Project	9	\$ 300.00	\$ 2,700.00			
Total Cost								

The above chart shows the quantity and per unit rates for various expense categories. These expenses will be invoiced monthly as they are incurred.

Per Diems are sourced from the US Department of State site for meals in St. John's. A daily rate will be submitted for each staff member traveling to and from site in lieu of meal receipts.



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#### Breakdown of Costs and Project Total 4.5.

Breakdown of Costs by Activity						
Activity No.:	1	Description:	Load Forecast 2012 Update			
	<u> </u>		Costs			
Cost Cor	npone	ent	Canadian Dollars (CAD)			
Labour Remui	nera	tion	10,400.00			
Reimbursable	Ехр	enses	3,914.00			
Miscellaneous	Exp	enses	-			
Subtotals			\$ 14,314.00			
Activity No.:	2	Description:	AC Integrations Studies Assessment			
Cost Cos		4	Costs			
Cost Cor	npone	ent	United States Dollar (USD)			
Labour Remui	nera	tion	9,380.00			
Reimbursable	Ехр	enses	3,914.00			
Miscellaneous	Miscellaneous Expenses		•			
Subtotals			\$ 13,294.00			
Activity No.:	3	Description:	Muskrat Falls GS DG3 Assessment			
-		<u> </u>	Muskrat Falls GS DG3 Assessment  Costs			
Activity No.:  Cost Cor		<u> </u>				
-	npone	ent	Costs			
Cost Cor	npone	ent tion	Costs United States Dollar (USD)			
Cost Cor Labour Remui	npone nera Exp	ent tion enses	Costs United States Dollar (USD) 14,500.00			
Cost Cor Labour Remui Reimbursable	npone nera Exp	ent tion enses	Costs United States Dollar (USD) 14,500.00			
Cost Cor Labour Remu Reimbursable Miscellaneous	npone nera Exp	ent tion enses	Costs United States Dollar (USD)  14,500.00  3,914.00  -			
Cost Cor Labour Remui Reimbursable Miscellaneous Subtotals  Activity No.:	nera Exp Exp	tion enses penses	Costs United States Dollar (USD)  14,500.00 3,914.00 - \$ 18,414.00			
Cost Cor Labour Remul Reimbursable Miscellaneous Subtotals	nera Exp Exp	tion enses penses	Costs United States Dollar (USD)  14,500.00 3,914.00 - \$ 18,414.00  HVDC Converter Stations DG3 Assessment			
Cost Cor Labour Remui Reimbursable Miscellaneous Subtotals  Activity No.:	nera Exp Exp	tion enses penses  Description:	Costs  United States Dollar (USD)  14,500.00 3,914.00 - \$ 18,414.00  HVDC Converter Stations DG3 Assessment Costs			
Cost Cor Labour Remui Reimbursable Miscellaneous Subtotals Activity No.:	nera Exp s Exp 4	tion enses penses  Description: ent	Costs  United States Dollar (USD)  14,500.00 3,914.00  - \$ 18,414.00  HVDC Converter Stations DG3 Assessment  Costs  United States Dollar (USD)			
Cost Cor  Labour Remui Reimbursable Miscellaneous Subtotals  Activity No.:  Cost Cor  Labour Remui	nera Exp Exp 4	Description:  ent  tion enses  penses	Costs  United States Dollar (USD)  14,500.00 3,914.00 - \$ 18,414.00  HVDC Converter Stations DG3 Assessment Costs United States Dollar (USD)  23,900.00			
Cost Cor  Labour Remui Reimbursable Miscellaneous Subtotals  Activity No.:  Cost Cor  Labour Remui Reimbursable	nera Exp Exp 4	Description:  ent  tion enses  penses	Costs  United States Dollar (USD)  14,500.00 3,914.00 - \$ 18,414.00  HVDC Converter Stations DG3 Assessment Costs United States Dollar (USD)  23,900.00			
Cost Cor  Labour Remui Reimbursable Miscellaneous Subtotals  Activity No.:  Cost Cor  Labour Remui Reimbursable Miscellaneous	nera Exp Exp 4	Description:  ent  tion enses  penses	Costs  United States Dollar (USD)  14,500.00 3,914.00 - \$ 18,414.00  HVDC Converter Stations DG3 Assessment Costs United States Dollar (USD)  23,900.00 7,220.00 -			
Cost Cor Labour Remui Reimbursable Miscellaneous Subtotals  Activity No.:  Cost Cor Labour Remui Reimbursable Miscellaneous Subtotals	nera Exp Exp Mera Exp Mera Exp Exp	Description:  Description:  Description:	Costs  United States Dollar (USD)  14,500.00 3,914.00  - \$ 18,414.00  HVDC Converter Stations DG3 Assessment  Costs  United States Dollar (USD)  23,900.00 7,220.00 - \$ 31,120.00			

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Labour Remuner Reimbursable Ex Miscellaneous E Subtotals  Activity No.:  6 Cost Compo	xpenses xpenses	## 26,620.00  3,914.00  - *  \$ 30,534.00
Reimbursable Ex Miscellaneous E Subtotals  Activity No.:	xpenses xpenses	3,914.00 - \$ 30,534.00
Miscellaneous E Subtotals  Activity No.: 6	xpenses	\$ 30,534.00
Subtotals  Activity No.:		
Activity No.:	Description:	
	Description:	Strait of Balla Iela Marina Crossing (SORI) DG2 Assassment
	Description:	Strait of Rolla lela Marina Crossina (SORI) DC2 Assessment
Cast Campa		Strait of Belle Isle Marine Crossing (SOBI) DG3 Assessment
Cost Compo	nent	Costs
Lahara Damara		United States Dollar (USD)
Labour Remune		7,250.00
Reimbursable Ex	•	3,914.00
Miscellaneous E	xpenses	- 44.464.00
Subtotals		\$ 11,164.00
Activity No.: 7	Description:	Other Cost Estimate Revisions
Coat Compa	.mant	Costs
Cost Compo	onent	United States Dollar (USD)
Labour Remune	ration	14,500.00
Reimbursable Expenses		•
Miscellaneous E	xpenses	•
Subtotals		\$ 14,500.00
Activity No.:	Description:	CPW DG3 Analysis
Cost Component		Costs United States Dollar (USD)
Labour Remunei	ration	, ,
Reimbursable Ex		24,200.00
Miscellaneous E		7,070.00
Subtotals	лропосо	\$ 31,270.00
Subtotals		31,270.00
Activity No.: 9	Description:	Report Preparation
Cost Compo	nent	Costs
,		US Dollar (USD)
Labour Remuneration		52,250.00
Reimbursable Expenses		3,914.00
Miscellaneous Expenses		<u>-</u>
Subtotals		\$ 56,164.00
Activity No.:	Description:	Report Presentation

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Breakdown of Costs by Activity						
Costs						
Cost Component		US Dollar (USD)				
Labour Remuneration		14,900.00				
Reimbursable Expenses		6,315.00				
Miscellaneous Expenses		<u>-</u>				
Subtotals	\$	21,215.00				
Grand Total	\$	241,989.00				

\*Note: the Financial Proposal is non-inclusive of Harmonized Sales Tax (HST). Where applicable, HST will be added to invoices.

To facilitate project cost control, timecards will be examined and approved by the Project Director including all reimbursable expenses.

Expenses incurred beyond the total estimate will be billed only in consultation, and on the approval of the Client.



### 5.0 Contract Terms

This proposal, and the following revisions to contract terms will be included as part of the final contract between the Government of Newfoundland and Labrador, and Manitoba Hydro International Ltd.

Legal documents incorporated into this proposal are

- Consultant Contract (Appendix A)
- Schedule "B" Special Terms and Conditions (Appendix B)
- Schedule "C" and Schedule "D"

#### 5.1. Schedule "C" Clause 7.2, Liability

The following wording replaces clause 7.2.

Notwithstanding any other provision of this Agreement the total liability of the Consultant to the Client with respect to any and all claims arising out of the performance or non-performance of the services provided under this Agreement whether based in contract, warranty, tort, including negligence, equity, strict liability or otherwise, shall be, limited to five times the value of the total fees for the services provided for under this Agreement.

Subject to the limitations of liability in this Agreement, Consultant shall be liable for and shall indemnify and save harmless Client, its directors and officers, its employees, agents and subcontractors from and against any and all losses, costs, damages or expenses suffered or incurred by Client or payable to any third party arising from any breach of contract, negligence or willful misconduct of Consultant or its employees in relation to this Agreement, except to the extent that such loss or damage is caused by the breach of contract, negligence or willful misconduct of Client, its employees, agents or subcontractors or any third party.

Subject to the limitations of liability in this Agreement, Client shall be liable for and shall indemnify and save harmless Consultant, its directors and officers, its employees, agents and subcontractors from and against any and all losses, costs, damages or expenses suffered or incurred by Consultant or payable to any third party arising from any breach of contract, negligence or willful misconduct of Client or its employees in relation to this Agreement, except to the extent that such loss or damage is caused by the breach of contract, negligence or willful misconduct of Consultant, its employees, agents or subcontractors or any third party.



Neither party shall have any liability to the other party or any other person or entity for any indirect, incidental, special or consequential damages whatsoever, including but not limited to loss of revenue or profit, lost or damaged data, or other commercial or economic loss, even if either party has been advised of the possibility of such damages; nor shall either party's directors, officers, employees, agents or subcontractors have any such liability.

#### 5.2. Clause 7.3

The following statements are to be added to Clause 7.3.

In the event that any liability results from the joint or concurrent negligent or intentional acts or omissions of the parties, each party shall be liable under this indemnification in proportion to its relative degree of fault.

Each party shall promptly notify the other party of any liability or proceeding in respect of which it is or may be entitled to indemnification.

Such notice shall be given as soon as reasonably practicable after the relevant party becomes aware of the liability or proceeding.

Any obligation of an indemnifying party to indemnify an indemnified party shall be reduced by the proceeds of any insurance policies received by the indemnified party with respect to the relevant claim.

Legal counsel retained for the defence of a party shall be instructed by the party retaining them to estimate in good faith the proportion of all costs, fees, and expenses of such defence which relate directly to Consultant's claims and Client's claims. All fees of legal counsel shall be allocated between Consultant and Client in proportion to each party's relative degree of fault.

