SNC·LAVALIN

nalcor energy

LOWER CHURCHILL PROJECT

BID EVALUATION PLAN

CH0032 – SUPPLY/INSTALL POWERHOUSE HYDRO/MECHANICAL EQUIPMENT

	NAME	TITLE	SIGNATURE	DATE
PREPARED BY:	*Robert Anderson*	SLI Contract Administrator		3/4/2013
REVIEWED BY:	*Bruce Drover*	Nalcor Package Lead		12-APR-2013
REVIEWED BY:	*Ed Over*	SLI Sr. Advisor – Commercial Strategies		3/4/2013
REVIEWED BY:	*Luc Turcotte*	SLI Area Manager - Powerhouse		4 APRIL 2013
REVIEWED BY:	*Ramiro Trillo*	Heavy Mechanical Engineer		Apr. 4-2013
REVIEWED BY:	*Pat Hussey*	Nalcor Supply Chain Manager	*	8 Apr 13
REVIEWED BY:	*Scott O'Brien*	Nalcor Component Project Manager	for S.B.	8-Apr-13
APPROVED BY:	*Jason Kean*	Nalcor Deputy Project General Manager		08-APR-2013

* not reviewed, signed based on Ed Over's review

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	CH0032 Supply/Install Powerhouse Hydro/Mechanical Equipment	00	02-Apr-2013	

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1.0 PURPOSE

This document describes the process for receiving, reviewing, and evaluating proposals in preparation for making a recommendation for negotiation with one or more of the bidders and the approach for a recommendation for award. It is intended to ensure that a fair and transparent evaluation of proposals is carried out. Included in this procedure are the responsibilities of the teams and an outline of the evaluation and negotiation process.

2.0 BIDDER LIST

Request for Proposals (RFPs) were issued to the following six (6) approved bidders:

Alstom Power & Transport Canada Inc.
Andritz Hydro Canada Inc.
Black & MacDonald Ltd.
Ganotec/Canmec Industriel Inc.
Korea Hydro/Daewoo International Corp.
HMI Construction (Declined to Bid)

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3.0 SCHEDULE

ID #	Activity	Start	Finish	Days
	Preliminary review	**04/09/13**	**04/26/13**	**17**
1	Bid Closing	04/16/13	04/16/13	0
2	Bid Opening	04/17/13	04/17/13	0
3	Distribute Proposals to commence discipline evaluations	04/18/13	04/18/13	0
4	Preliminary technical and commercial evaluation	04/19/13	05/03/13	14
5	Preliminary Presentation / Report to Management and Steering Team	05/03/13	05/03/13	0
	Clarification / Recommendation	**04/26/13**	**06/21/13**	**56**
6	Bid clarification questions and answer process	05/03/13	05/24/13	21
7	Interim Presentation / Report to Management and Steering Team	05/24/13	05/24/13	0
8	Due Dilligence Preliminary Review	05/24/13	05/24/13	0
9	Prepare for bid clarification meetings, issue Agendas etc.	05/24/13	05/31/13	7
10	QA /QC Audits of Proposed Sub Contractors of Critical Equipment	05/24/13	06/14/13	21
11	Complete Bid Clarification Meetings	05/31/13	06/21/13	21
12	Finalize Evaluation Reports and Scoring Matrices	06/21/13	06/25/13	4
13	Final Evaluation Report and Presentation to Management Team and Contracts Steering Committee with Recommendation for Award	06/25/13	06/28/13	3
14	Ongoing updates to RFI documents	05/17/13	06/21/13	35
15	Issue final Recommendation for Award to Nalcor Corporate.	06/21/13	06/21/13	0
	Approval	**06/21/13**	**07/19/13**	**28**
16	Receive Nalcor Corporate Approval of Recommendation for Award	06/21/13	06/28/13	7
17	RFI Requisition from Engineering with updated Technical Documents for final Agreement document	06/21/13	07/05/13	14
18	Issue Final Agreement Document including updated Technical Documents to Nalcor for Due Diligence review and approval:	07/05/13	07/12/13	7
19	Nalcor Due Diligence & approval of final Agreement .	06/28/13	07/19/13	21
	Award	**07/19/13**	**07/31/13**	**12**
20	Forward Final Agreement to approved Bidder(s) for review/signing	07/19/13	07/26/13	7
21	Nalcor Execute Agreement/ Award Contract (s)	07/31/13	07/31/13	0

4.0 PROPOSAL SECURITY

Proposals submitted to the Contract Administrator will be locked in a secure location until the Bid Opening. The opening will be documented on the Bid Opening Record. (See Appendix 2)

The commercial and technical evaluations will be undertaken separately. The commercial evaluation will be undertaken in a room with access restricted to the Commercial Evaluation Team.

Personnel involved in the evaluation process will be required to sign a package specific Confidentiality Agreement prior to being provided access to the proposals. (See Appendix 1)

5.0 ROLES AND RESPONSIBILITIES

The organization chart below and following sections describe the roles and responsibilities for the bid evaluation process.

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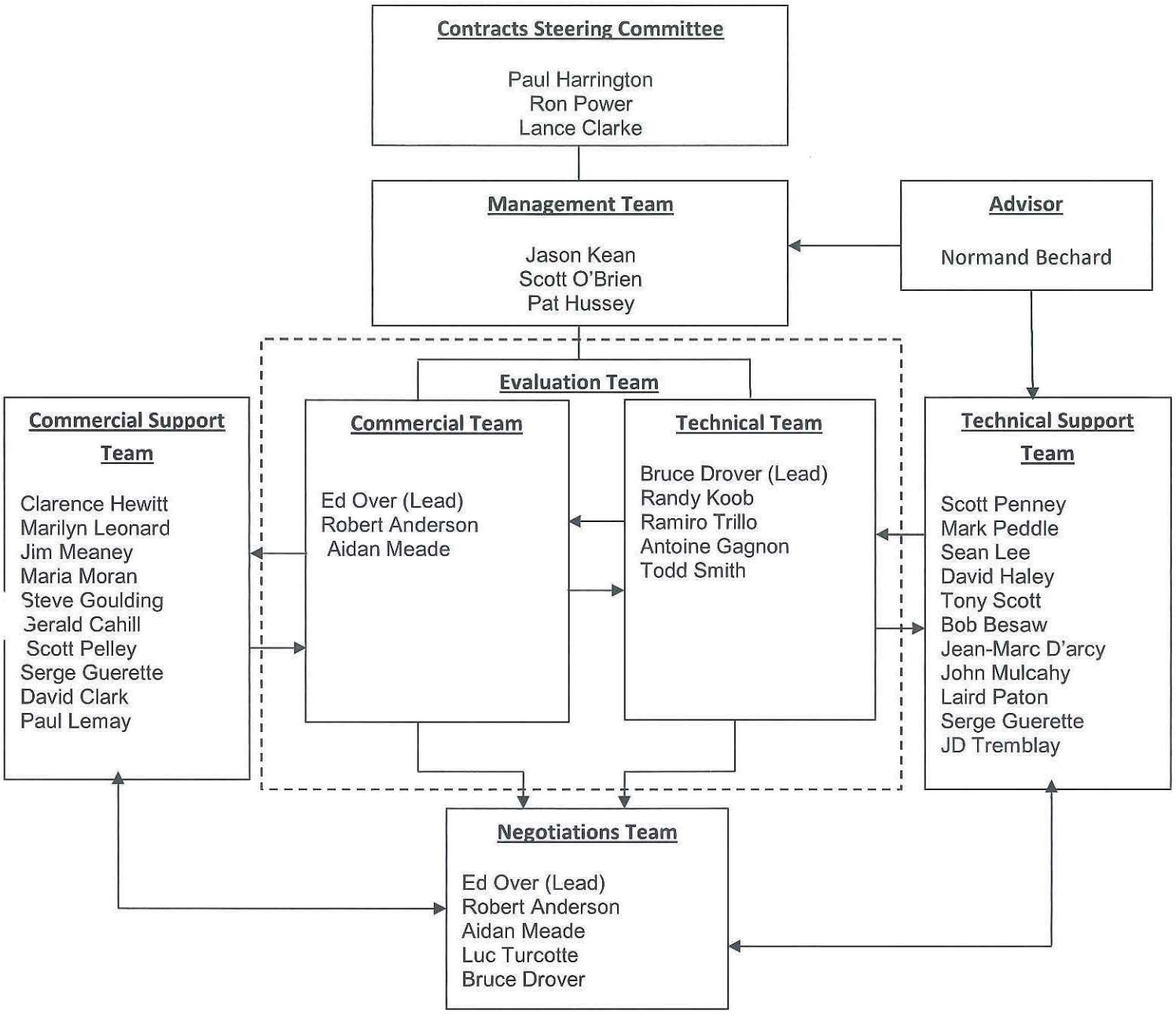


5.1 CONTRACTS STEERING COMMITTEE

This Committee has overall responsibility for all the contracts on the Lower Churchill Project. This Committee is responsible for ensuring that the contracts meet or exceed the business objectives of the project. It will receive regular updates from the Management Team and the Commercial and Technical Leads from the Evaluation Team.

5.2 MANAGEMENT TEAM

The Management Team may be required to review key areas of the Proposals as identified and provided by the Evaluation Team. It is responsible for oversight of the activities of the Evaluation Team during the technical and commercial evaluations. The Management Team must ensure that the Evaluation Team follows this Evaluation Plan to ensure that a fair and unbiased process is followed. The Management Team reports to the Contracts Steering Committee.

The Management Team ensures conformance by the Evaluation Team to this procedure by reviewing their activities and may request justification or documentation from members of the Evaluation Team. Once the Management Team is satisfied that this Plan has been followed and that each Proposal has been evaluated fairly and without prejudice, the Management Team directs the Evaluation Team to proceed into negotiations with up to three parties.

6.0 EVALUATION TEAM

When the Bid Evaluation Plan has been approved, the Technical and Commercial Team Leads will convene an Evaluation Kick-Off Meeting with all of the Evaluation Team in attendance to confirm roles and responsibilities and to outline the rules of engagement for the evaluation process. This will include the introduction of the Evaluation Reports detailed in the Plan Appendices and a reinforcement of the need for confidentiality and security throughout the process.

Evaluation Team members will use the appropriate evaluation templates in the appendices to evaluate the portions of each proposal that are pertinent to their discipline. During review of the Proposals, members of the Evaluation Team may require additional information in order to clarify information in a Proposal. During the time between receipt of Proposals and award, no member of the Evaluation Team may contact Bidder representatives.

The Commercial and Technical Teams have separate Support Teams which provide as required support in such areas as quality, environment, health and safety, Provincial Benefits, planning, costing, escalation, foreign exchange, legal and finance.

The Contract Administrator shall be responsible for all communications with the Bidders during the evaluation process. Bid Clarification questions will be submitted to the Bidders on the Proposal Clarification Forms (see Appendices 11 and 12).

The Evaluation Team is composed of two sub-teams: the Technical Evaluation Team and the Commercial Evaluation Team. Each sub-team has a team lead responsible for assigning tasks, coordinating meetings and ensuring adherence to the evaluation process. These two sub-teams are comprised of the following members:

Team Member	Discipline	Sub Team
Aidan Meade	Law	Commercial
Clarence Hewitt	Commercial	Commercial Support
Marilyn Leonard	Insurance	Commercial Support
Jim Meaney	Credit/Risk	Commercial Support
JD Tremblay	Risk	Technical Support
Maria Moran	Provincial Benefits	Commercial Support
Steve Goulding	Escalation	Commercial Support
Gerald Cahill	Finance	Commercial Support
Scott Pelley	Credit/Risk	Commercial Support
Serge Guerette	Project Controls	Technical Support
Robert Anderson	Procurement	Commercial
Ed Over	Procurement	Commercial
Bruce Drover	Package Leader	Technical
Randy Koob	Mechanical	Technical

Team Member	Discipline	Sub Team
Ramiro Trillo	Hydro Mechanical	Technical
Antoine Gagnon	Electrical	Technical
Todd Smith	Civil/Architectural	Technical
Scott Penney	HVAC	Technical Support
Mark Peddle	Quality	Technical Support
Sean Lee	Health and Safety	Technical Support
David Haley	Environment	Technical Support
Tony Scott	Planning	Technical Support
Bob Besaw	Mechanical	Technical Support
Jean-Marc D'arcy	Mechanical	Technical Support
John Mulcahy	Construction	Technical Support
Laird Paton	Construction	Technical Support
Paul Lemay	Estimating	Commercial Support
David Clark	Labour Relations	Commercial Support

7.0 NEGOTIATIONS TEAM

The Negotiations Team is responsible for developing a plan for negotiations and negotiating with one or more of the Bidders. The responsibilities and objectives of the team are fully defined in section 9 below.

8.0 EVALUATION PROCESS

An Overall Evaluation Scoring Matrix will be used to rank each Bidder's Proposal. The

following weighted evaluation criteria will be used to assess each Bidder's Proposal. Further details of the breakdown of these items can be found in the relevant sections detailed below:

Criteria	Weighted Rating (%)
Commercial	60%
Technical	27.5%
Quality	Pass/Fail
Risk Management	Pass /Fail
Provincial Benefits	2.5%
Health & Safety	Pass/Fail
Environmental	Pass/Fail
Work & Milestone Schedule including Execution Plan & Site Execution Team.	10%
Total	**100%**

For Technical Evaluation, Bidders must obtain a score of 80% or greater to pass. For Environmental Evaluation, Bidders must obtain a score of 70% or greater to pass. For Commercial Evaluation, Bidders must obtain a score of 65% or greater to pass. For all other criteria, Bidder must obtain a score of 60% or greater to pass.

The Evaluation Team Leads will develop the evaluation criteria detailed in the table above. If required, members of the Technical and Commercial Support Teams will determine the evaluation criteria for their respective sections and the evaluation criteria will be reviewed and agreed with the respective Team lead. Each team will assign a percentage weighting for each criteria and sub criteria. The Commercial & Technical Evaluation Teams with input from their respective Support Teams will score the various criteria based on scoring from 0 – 10 and will multiply the score by the percentage weighting to determine a weighted score. This data will be presented in the Overall Evaluation Scoring Matrix. (See Appendix 3)

The overall scoring will be supported by key information from the detail evaluations. The benefits and issues associated with each Proposal will be identified and discussed between the Evaluation Team Leads and Management Team. If for some reason, the overall highest weighted score does not result in the lowest cost Proposal, the Evaluation Leads and the Management Team will meet, discuss and agree on the final recommendation.

Quality, Health and Safety, Environment and Risk Management will be scored and evaluated on a pass/fail basis based against weighted evaluation criteria as detailed in Appendices 6, 8, 9, and 10 respectively.

8.1 COMMERCIAL EVALUATION

The commercial evaluation will be completed by the Commercial Evaluation Team separately from the technical evaluation. Compliance and/or acceptance with commercial and financial requirements will form an integral part of the commercial evaluation. Commercial acceptance will also be influenced by compliance with the Agreement Articles. Any proposed change(s) to the Agreement Articles will be negotiated with the Bidders prior to formal review and subsequent acceptance by Nalcor Legal Counsel. An evaluation rating score for the commercial evaluation criteria will be determined and presented in the Overall Evaluation Scoring Matrix along with the Commercial Bid tabulation.

Proposals will be reviewed for completeness pursuant to the RFP commercial requirements and to ensure that Bidders have completed all necessary responses to RFP Appendices A1 to A17 including a detailed review and comparison of all line items detailed on Appendix A2.1 Schedule of Price Breakdown.

Compliance and or commercial acceptance of the RFP Liquidated Damages, Coordination Procedures, Contractor Insurance, Warranties and Performance Security requirements will form an important part of the commercial evaluation along with the review and negotiation of acceptable milestone payments based on defined Contractor deliverables. Project Controls and Finance will be requested to assist with review of the financial stability / creditworthiness of the Bidders and with the evaluation of proposed milestone payments which will affect Project cash flow.

The Proposals will be evaluated on a total evaluated cost basis considering such items as proposal price, terms of payment, net present value, efficiency, performance guarantees, delivery schedule, currency exchange rates, spare parts and estimated inspection / expediting costs. Given that the Bidders have been requested to submit separate pricing for packages A and B and a combined price for both. The Commercial Team will consider the overall evaluated cost versus concentration of risk.

The Contract Administrator will enter all commercial questions and or commercial clarifications on the Commercial Proposal Clarification Form on an ongoing basis and will forward it by email to the respective Bidder. A separate Commercial Proposal Clarification Form will be maintained for each Bidder.

The Contract Administrator will be responsible for the compilation of the Commercial Evaluation Report (See Appendix 4) that will be used to provide a summary and an assessment of the proposals. Detailed analysis of key commercial provisions may also be included in the separate evaluations detailed in the Appendices.

An evaluation rating score for the commercial evaluation criteria shall be determined (See Appendix 13 – Commercial Evaluation Matrix) and presented in the Overall Evaluation Scoring Matrix (See Appendix 3).

The Contract Administrator will be responsible for issuing formal Minutes of Meeting from all commercial proposal clarification meetings with Bidders during the evaluation period.

8.2 PROVINCIAL BENEFITS EVALUATION

The Provincial Benefits Representative on the Commercial Support Team will be responsible for reviewing each Bidder's response to the Provincial Benefits Questionnaire which was included in the Request for Proposal (RFP). Refer to Appendix 7 for the Provincial Benefits Evaluation Report.

8.3 RISK MANAGEMENT EVALUATION

The Risk Management Representative on the Commercial Support Team will be responsible for reviewing each Bidder's response to the Risk Management Questionnaire which was included in the Request for Proposal (RFP). Refer to the Appendix 8 for the Risk Management Evaluation Report.

8.4 TECHNICAL EVALUATION

The technical evaluation will be carried out by the Technical Evaluation Team. Technical acceptance will be based on meeting the minimum requirements needed to complete the Work. The technical evaluation will be done separately from the commercial evaluation using un-priced copies of the bids.

Following completion of the Preliminary Evaluation of Proposals, if a Proposal is determined to be significantly non-compliant with the RFP technical documents or technical specifications the Technical Team Lead may make a recommendation to end

the evaluation at this stage and focus all their resources on the evaluation of the technically acceptable Proposals. Any such recommendation will be subject to approval by the Management Team and the Contracts Steering Committee. The rationale for this recommendation will also be recorded on the final Technical Evaluation Report.

A summary of the technical evaluation process including a statement to advise if each Proposal is 1) technically compliant, 2) non compliant but technically acceptable with negotiated and approved deviations, 3) technically non compliant and technically not acceptable, will be recorded on the Technical Evaluation Report (See Appendix 5). A technical score will be determined and detailed on the Overall Evaluation Scoring Matrix for the Proposal.

The technical evaluation and analysis will include the following:

- Review and compare the guarantees.
- Review declared exceptions.
- Review alternatives.
- Review the technical questionnaires for each Bidder and each alternative. The questionnaire is already in tabular format and can be converted to a comparison table by adding columns.
- Identify the items where answers show substantial discrepancy.
- Review the documentation, schematics and drawings provided by the Bidders as requested in the questionnaires. Identify missing or incomplete information as well as items which may not be in accordance with the specification.
- Prepare questions and clarifications to be forwarded to the Bidders. The questions shall be written in such a way that the Bidders modify the items that are not technically acceptable;
- Upon receipt of answers from the Bidders, update the comparison table.
- From the comparison table extract items pertinent for the technical evaluation. The template comparison sheet can be used to compile and evaluate the relevant items in a qualitative manner.

Guarantees and alternatives shall be analysed by their dollar value. Where possible, the other comparison items shall be translated into dollar value. This information shall be forwarded to the Commercial Evaluation Team to bring the bids to a common commercial basis.

The technical evaluation criteria shall include:

- Acceptability of the base bids.
- Acceptability of proposed exceptions.
- Acceptability of proposed alternatives.
- Proven expertise from similar projects.
- Technology level.
- Available technical resources.
- Proposed Project Manager and team and major subcontractors and their project team

An evaluation rating score for the technical evaluation criteria shall be determined (See Appendix 14 – Technical Evaluation Matrix) and presented in the Overall Evaluation Scoring Matrix (See Appendix 3).

8.5 QUALITY EVALUATION

The Quality Representative on the Technical Support team will be responsible for reviewing each Bidder's response to the Quality Questionnaire which was included in the Request for Proposal (RFP). Refer to the Appendix 6 for the Quality Evaluation Report.

The Quality Representative will rate and rank the Bidder's Proposals from a Quality perspective including a review of the submitted Quality Manuals, Quality Accreditation Certificates and other Quality Documents. The Quality Proposal documents will be reviewed for completeness and effectiveness including a review of the qualifications and experience of the Bidder's Quality personnel.

The Quality Representative will assist the Technical Evaluation Team with a review of the Bidder's proposed Subcontractors, Manufacturers and Material Sources as detailed in RFP Appendix A16 to determine if any Quality Surveillance Audits are required during the evaluation process prior to Agreement Award. Quality Representative will also advise on recommended Quality visits to manufacturers of major critical components after Agreement Award.

A summary of the Quality evaluation process including a statement to advise if each Proposal is compliant, or non compliant but acceptable with negotiated and approved deviations, or non compliant and not acceptable, will be recorded on the Quality Evaluation Report which also details the weighted evaluation criteria (See Appendix 6).

8.6 HEALTH AND SAFETY EVALUATION

The Health and Safety (H&S) Representative on the Technical Support Team will determine if the H&S documents in the Bidder's proposal meet the requirements as detailed in the RFP. A detailed evaluation of the Bidder's responses to the Health & Safety Questionnaire as included in Appendix A5 of the RFP will be completed.

The H&S Representative will rate and rank the bidders Proposals from a H&S perspective including a review of the submitted H&S manuals and documents. The H&S Proposal documents will be reviewed for completeness and effectiveness including a review of the qualifications and experience of the Bidder's H&S personnel. Refer to Appendix 9 for the Health and Safety Evaluation Report.

8.7 ENVIRONMENTAL EVALUATION

The Environmental Representative on the Technical Support Team will undertake a detailed review of each Bidder's responses to the Environmental Questionnaire and supporting documents including the Bidder's corporate environmental manuals. The Representative will assess the Bidder's understanding of the project's environmental requirements and will rate and rank the Bidders' Proposals from an Environmental perspective. The Environmental Proposal documents will be reviewed for completeness and effectiveness including a review of the qualifications and experience of the Bidder's environmental personnel. Refer to Appendix 10 for the Environmental Evaluation Report.

8.8 WORK & MILESTONE SCHEDULE EVALUATION

The Project Control Planners on the Technical Support Team will review and evaluate the Work and Milestone Schedules (Level 2 in Primavera format) as submitted with the Proposals and identify if they comply with the Work and Milestone Schedule as detailed in Part 2 - Exhibit 9 of the RFP. Special attention will be given to confirm the Schedule supports the overall construction schedule. The electronic Schedule shall be evaluated to ensure it is compiled using the best Schedule practices and its matches the execution strategy. Evaluation will also be completed to ensure that the Payment Schedule agrees with the deliverables and site staff allocation.

An evaluation rating score for the Work and Milestone Schedule evaluation criteria shall be determined (See Appendix 15 – Schedule & Execution Plan Evaluation Matrix) and presented in the Overall Evaluation Scoring Matrix. (See Appendix 3)

8.9 EXECUTION PLAN EVALUATION

Area Manager and the Construction Team will undertake a joint review of the Bidder's Execution Plans, Organisation Charts and Resumes of Contractor's Key Personnel, as issued in response to RFP Part 1 Appendix A13 Execution Plan.

An evaluation rating score for the Execution Plan evaluation criteria shall be determined and presented in the Overall Evaluation Scoring Matrix (See Appendix 3).

8.10 REVIEW BY THE MANAGEMENT TEAM

Upon completion of the technical and commercial evaluations, the Evaluation Team Leads convene a meeting with the Management Team to present the Team's evaluations. The Leads present each proposal using the Evaluation Forms, and discuss the strengths and weaknesses of each. They describe any pricing adjustments that were made during the technical and commercial evaluations to ensure a common basis for commercial evaluation.

9.0 CONTRACT NEGOTIATIONS

The Commercial Team Lead will develop a plan for negotiations with each Bidder. The plan shall include the specific goals of the negotiation including a list of primary and secondary items to be negotiated. This plan shall be based on the collective input of the Evaluation Team and input from the Management Team. This plan will be continually updated on the basis of the progress of the negotiations.

It is extremely important that the results of the initial evaluations, objectives of the proposed negotiations and the parties targeted for negotiation be treated as highly confidential. It must be stressed that there should be no communication with the Bidders, their subcontractors or any other related parties other than by the Contracts Administrator.

The evaluation of each Bidder's Proposal will be reviewed and updated on the basis of the information provided during the negotiations. This update should occur immediately after the negotiation session. As a result of this process, the relative standing of the Bidders may change several times until the conclusion of the negotiations. These negotiations will continue until the Negotiating Team feels it has derived the best value for the LCP and, is prepared to make a recommendation to the Management Team.

It is anticipated that given the short duration of the proposal evaluation period that there may need to be parallel technical and commercial negotiating sessions with the Bidders. This will be determined by the Evaluation Team Leads after a review of the Proposals. Negotiations of terms and conditions will be undertaken separately.

It is important that these negotiations with the Bidders be conducted in a fair and professional manner, reflecting the magnitude of effort that the Bidders have taken to submit Proposals as well as the profile of the Project.

A detailed record of evaluation/negotiation activities will be maintained by the Contracts Administrator.

10.0 AWARD PROCESS

A meeting may be arranged to review the completed Evaluation Reports including the priced Commercial Bid Evaluation Report. The successful Bidder will be nominated and will be included in the Evaluation Team's Bid Evaluation and Award Recommendation. The Recommendation for Award Summary Report (See Appendix 16) will be prepared by the Contract Administrator for sign off and approval by the Evaluation Team Leads. This report will identify the Bidder recommended for Agreement Award including the final negotiated Agreement prices.

The Recommendation for Award Summary Report, along with all supporting Evaluation Reports, will be submitted by the Contract Administrator for review and approval. At the same time, the Evaluation Team will commence preparation of the Agreement documentation including revision of all Commercial and Technical sections, where applicable. The Agreement, comprised of the Articles and Exhibits 1 to 14 inclusive, will be prepared by the Contract Administrator for review and approval by Nalcor. Upon receipt of the approved Recommendation for Award Summary Report and the approved Final Agreement, the Agreement will be issued first to the successful Bidder for execution. Authority to commence the Work will be issued after the Agreement has been signed and dated by both Contracting Parties.

11.0 NOTIFICATION OF UNSUCCESSFUL BIDDERS

The Contract Administrator will notify the unsuccessful bidders after the Agreement has been signed by both Parties.

12.0 APPENDICES

Appendix 1 – Confidentiality Agreement
Appendix 2 – Bid Opening Record
Appendix 3 – Overall Evaluation Scoring Matrix
Appendix 4 – Commercial Evaluation Report
Appendix 5 – Technical Evaluation Report
Appendix 6 – Quality Evaluation Report
Appendix 7 – Provincial Benefits Evaluation Report
Appendix 8 – Risk Management Evaluation Report
Appendix 9 – Health and Safety Evaluation Report
Appendix 10 – Environmental Evaluation Report
Appendix 11 - Commercial Proposal Clarification Form
Appendix 12 - Technical Proposal Clarification Form
Appendix 13 - Commercial Evaluation Matrix
Appendix 14 -Technical Evaluation Matrix
Appendix 15 - Schedule and Execution Plan Evaluation Matrix
Appendix 16 - Recommendation for Award Summary Report

APPENDIX 1

CONFIDENTIALITY AGREEMENT

Appendix 1 – Confidentiality Agreement

Lower Churchill Project
CH0032 Supply/Install Powerhouse Hydro/Mechanical Equipment

Confidentiality Protocol

The Project Team is currently evaluating proposals for the Supply and Installation of the Powerhouse Hydro/Mechanical Equipment for the Lower Churchill Project (**the "Project**). As part of the evaluation process, a team of representatives from SNC-Lavalin, Nalcor and their legal representatives "**Evaluation Team**") will be given access to technical and commercial information about the Proposal and Project that is commercially sensitive and confidential ("**Confidential Information**"). Accordingly, this document establishes the process and procedures for ensuring the confidentiality of the proposals.

(a) Evaluation Team members shall not use the Confidential Information except for the purpose of evaluating the Powerhouse Hydro/Mechanical Equipment Proposals for the Project.

(b) All Confidential Information must remain in confidence and kept in a secure location. Evaluation Team members shall not discuss nor disclose the Confidential Information (nor information that is reasonably derived there from) except to other Evaluation Team members or to employees of SNC-Lavalin, Nalcor, or their legal representatives who reasonably require information for the purpose of evaluating the Proposals for the Project and who are bound in writing by this Confidentiality Protocol.

(c) Copies of the Confidential Information can only be made with the consent of **Ed Over (Sr. Advisor – Commercial Strategies, SNC-Lavalin, Lower Churchill).**

Confidentiality Agreement

I, _____, have read and understand the procedures set out in the Confidentiality Protocol and agree to abide by them.

Per: _____ _____

Name (Print) Signature

_____ _____

(Insert Company Name) Date

APPENDIX 2

BID OPENING RECORD

Appendix 2

BID OPENING RECORD

nalcor energy / SNC·LAVALIN	Bid Opening Record **(Confidential)**	Project 505573	Com. «WBS»	Subject 5100 / 5200	Seq.	Rev.
	Client: NALCOR ENERGY		Date: 26-Mar-13		Page 1 of 1	
	Project Name & Location: Lower Churchill Project		RFP / Call No.: 505573- CH0032 Supply & Install Powerhouse Hydro/Mechanical Equipment			
Package Title: SUPPLY/INSTALL POWERHOUSE HYDRO/MECHANICAL EQUIPMENT			*INTERNAL Distribution (Name plus Discipline)*			
			Pat Hussey : Nalcor Supply Chain Manager .CONFIDENTIAL			

Budget:	BID CLOSING		BID OPENING	
$180 Million CAD$	Date:	March 28, 2013	Date:	April 17, 2013
Check Estimate: $	Time:	4pm NL	Time:	

Remarks:

«Bid_Opening_Notes»

Entries for these columns are to be handwritten

Bid Received		BIDDER	Currencies	UNEVALUATED PRICE	remarks
1		**ALSTOM Power & Transport Can** 1350. Chemin St-Roch Sorel- Tracy Quebec Canada J3R 5P9			
2		**ANDRITZ Hydro Canada Inc.** 6100 Trans Canada Highway Pointe- Claire Quebec. Canada H9R 1B9			
3		**BLACK & MACDONALD** 19A Dundee Ave Mount Pearl Newfoundland A1N 4R6			
4		**GANOTEC INC./CANMEC IND.** 1750 LaGrande St. Saguenay Quebec, Canada G7K 1H7			
5		**KOREA NUCLEAR** Suite 202, 90 Allstate Pkwy Markham Ontario, Canada L3R 6H3			

REMARKS:

PRESENT AT OPENING

name	title	signature	Bid Opening Date
			01-Apr-13

APPENDIX 3

OVERALL EVALUATION SCORING MATRIX

Appendix 3 **Overall Evaluation Scoring Matrix**

Package # 505573-CH0032: S/I Powerhouse Hydro/Mechanical Equipment

Contract Administrator: R Anderson
Lead Technical: Bruce Drover
Lead Commercial: Ed Over
Area Manager: Luc Turcotte

NOTE: Each subsection is rated on a scale 1 - 10 (rating) then multiplied by the weighted value (weighting) for the item (within the evaluation subsection) to get the item value.

Section 1 Commercial

Lead : Ed Over

Weighted value: 60%

	Criteria:	item wgtg	Bidder 1 Rating 0-10	Bidder 1 item value	Bidder 2 Rating 0-10	Bidder 2 item value	Bidder 3 Rating 0-10	Bidder 3 item value	Bidder 4 Rating 0-10	Bidder 4 item value	Bidder 5 Rating 0-10	Bidder 5 item value	Comments:
1	**Total Evaluated Cost comprising :**	65%		0.00		0.00		0.00		0.00		0.00	
	Proposal Price - (A) Intake & Draft Tube			0.00		0.00		0.00		0.00		0.00	
	Proposal Price - (B) Spillway			0.00		0.00		0.00		0.00		0.00	
	Proposal Price - A & B			0.00		0.00		0.00		0.00		0.00	
	Terms of Payment			0.00		0.00		0.00		0.00		0.00	
	Net Present Value			0.00		0.00		0.00		0.00		0.00	
	Milestone Payment Schedule			0.00		0.00		0.00		0.00		0.00	
	Delivery Schedule			0.00		0.00		0.00		0.00		0.00	
	Currency Exchange Costs			0.00		0.00		0.00		0.00		0.00	
	Estimated Inspection & Expediting Costs												
				0.00		0.00		0.00		0.00		0.00	
2	**Terms & Conditions comprising:**	35%		0.00		0.00		0.00		0.00		0.00	
	Limitation of Liability			0.00		0.00		0.00		0.00		0.00	
	Liquidated Damages			0.00		0.00		0.00		0.00		0.00	
	Title Transfer			0.00		0.00		0.00		0.00		0.00	
	Insurance			0.00		0.00		0.00		0.00		0.00	
	Performance Security			0.00		0.00		0.00		0.00		0.00	
	Ownership of I.P			0.00		0.00		0.00		0.00		0.00	
	Default			0.00		0.00		0.00		0.00		0.00	
	Exceptions			0.00		0.00		0.00		0.00		0.00	
	Overall compliance			0.00		0.00		0.00		0.00		0.00	
		100%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				X		X		X		X		X	
	Weighted value			60%		60%		60%		60%		60%	
	Points value			**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	

Section 2 Technical

Lead: Bruce Drover

Weighted value: 27.5%

	Criteria:	item wgtg	Bidder 1 Rating 0-10	Bidder 1 item value	Bidder 2 Rating 0-10	Bidder 2 item value	Bidder 3 Rating 0-10	Bidder 3 item value	Bidder 4 Rating 0-10	Bidder 4 item value	Bidder 5 Rating 0-10	Bidder 5 item value	Comments:
1	Spillway Hydro- Mechancial Acceptability	25%		0.00		0.00		0.00		0.00		0.00	
2	Spillway Electrical Building Acceptability	20%		0.00		0.00		0.00		0.00		0.00	
3	Intake Hydro-Machancial Acceptability	25%		0.00		0.00		0.00		0.00		0.00	
4	Draft Tube Hydro-Mechancial Acceptability	15%		0.00		0.00		0.00		0.00		0.00	
5	Trash Cleaner Acceptability	15%		0.00		0.00		0.00		0.00		0.00	
				0.00		0.00		0.00		0.00		0.00	
		100%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				X		X		X		X		X	
	Weighted value			27.5%		27.5%		27.5%		27.5%		27.5%	
	Points value			**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	

Section 3 Schedule & Execution Plan

Lead: _Bruce Drover

Weighted value: 10%

Criteria:	item wgtg	Bidder 1 Rating 0-10	Bidder 1 item value	Bidder 2 Rating 0-10	Bidder 2 item value	Bidder 3 Rating 0-10	Bidder 3 item value	Bidder 4 Rating 0-10	Bidder 4 item value	Bidder 5 Rating 0-10	Bidder 5 item value	Comments:
1 Work Schedule Milestones	30%		0.00		0.00		0.00		0.00		0.00	
2 Site Staff Schedule	10%		0.00		0.00		0.00		0.00		0.00	
3 Payment Schedule (against deliverables)	10%		0.00		0.00		0.00		0.00		0.00	
4 SDRL Compliant with Schedule	10%		0.00		0.00		0.00		0.00		0.00	
5 Schedule Quality	20%		0.00		0.00		0.00		0.00		0.00	
6 Execution Plan / Strategy	20%		0.00		0.00		0.00		0.00		0.00	
			0.00		0.00		0.00		0.00		0.00	
			0.00		0.00		0.00		0.00		0.00	
	100%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			X		X		X		X		X	
Weighted value			10%		10%		10%		10%		10%	
Points value			**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	

Section 4 NL Benefits

Lead : Maria Moran

Weighted value: 2.5%

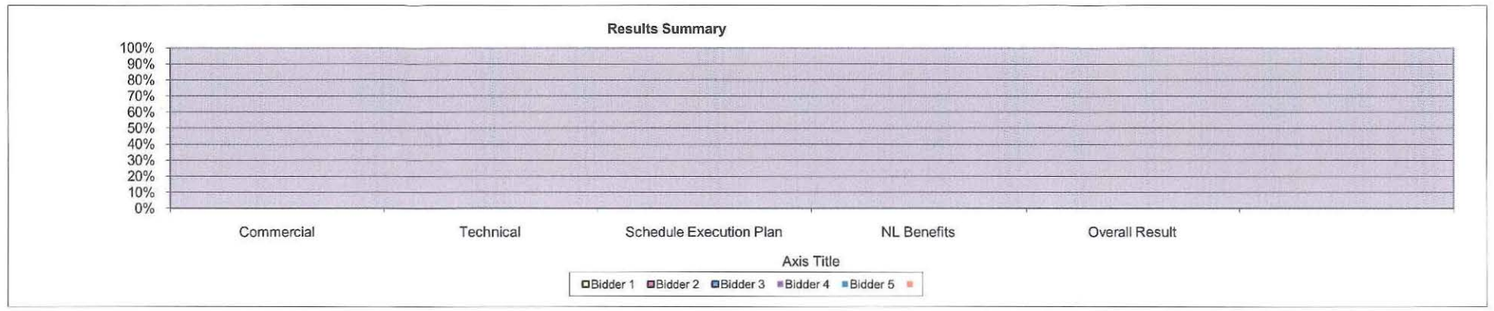
Criteria:	item wgtg	Bidder 1 Rating 0-10	Bidder 1 item value	Bidder 2 Rating 0-10	Bidder 2 item value	Bidder 3 Rating 0-10	Bidder 3 item value	Bidder 4 Rating 0-10	Bidder 4 item value	Bidder 5 Rating 0-10	Bidder 5 item value	Comments:
1 Refer to Bid Eval Plan Appendix 8	100%		0.00		0.00		0.00		0.00		0.00	
			0.00		0.00		0.00		0.00		0.00	
			0.00		0.00		0.00		0.00		0.00	
			0.00		0.00		0.00		0.00		0.00	
			0.00		0.00		0.00		0.00		0.00	
			0.00		0.00		0.00		0.00		0.00	
			0.00		0.00		0.00		0.00		0.00	
			0.00		0.00		0.00		0.00		0.00	
	100%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			X		X		X		X		X	
Weighted value			2.5%		2.5%		2.5%		2.5%		2.5%	
Points value			**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	

SUMMARY OF PROPOSAL RESULTS

Overall Comments:

	Bidder 1		Bidder 2		Bidder 3		Bidder 4		Bidder 5	
Points value of Section 1 Commercial	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00
Points value of Section 2 Technical	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00
Points value of Section 3 Schedule & Execution Plan	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00
Points value of Section 4 NL Benefits	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00
OVERALL RATING OF PROPOSALS	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0

		Bidder 1	Bidder 2	Bidder 3	Bidder 4	Bidder 5
1	Commercial	0%	0%	0%	0%	0%
2	Technical	0%	0%	0%	0%	0%
3	Schedule Execution Plan	0%	0%	0%	0%	0%
4	NL Benefits	0%	0%	0%	0%	0%
	Overall Result	**0%**	**0%**	**0%**	**0%**	**0%**
5	Risk Management	P/F	P/F	P/F	P/F	P/F
7	Health & Safety	P/F	P/F	P/F	P/F	P/F
8	Quality Assurance	P/F	P/F	P/F	P/F	P/F
9	Environmental	P/F	P/F	P/F	P/F	P/F



APPENDIX 4

COMMERCIAL EVALUATION REPORT

Appendix 4 - Commercial Evaluation Report

Nalcor Energy-Lower Churchill Project — Commercial Evaluation Report

Package No./ Description: 505573-CH0032 SUPPLY/INSTALL POWERHOUSE HYDRO/MECHANICAL EQUIPMENT								Date: 2013-MM-DD	Page 1 of 6
BIDDERS			Bidder 1	Bidder 2	Bidder 3	Bidder 4	Bidder 5	RECOMMENDED BIDDER AND AWARD VALUE:	
Proposal No.									
Proposal Date									
Proposal Validity									
Item	Qty	Description						Notes	
		Technical Data:							
		CONTRACT AWARD VALUE Scope A - Intake & Draft Tube (Converted to CAD$)	$ -	$ -	$ -	$ -	$ -		
		CONTRACT AWARD VALUE Scope B - Spillway (Converted to CAD$)	$ -	$ -	$ -	$ -	$ -		
		CONTRACT AWARD VALUE Scope A &B - Intake & Draft Tube & Spillway (Converted to CAD$)	$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
		Estimate for Required Spares (Converted to CAD$)	$ -	$ -	$ -	$ -	$ -		
		NET PRESENT VALUE	$ -	$ -	$ -	$ -	$ -		
		EVALUATED PRICE (CAD$)							
		CONTRACT AWARD VALUE (Converted to CAD$)							
		Schedule Adjustment	$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
		Estimate for any deviation to RFP Liquidated Damages	$ -	$ -	$ -	$ -	$ -		
		Foreign Exchange Adjustment	$ -	$ -	$ -	$ -	$ -		
		Estimated QA Surveillance Visits prior to Contract Award	$ -	$ -	$ -	$ -	$ -		
		Estimated Expediting costs	$ -	$ -	$ -	$ -	$ -		
		Estimated Inspection costs (QA during manufacturing)	$ -	$ -	$ -	$ -	$ -		
		Other Cost Adjustments (Site Costs)	$ -	$ -	$ -	$ -	$ -		
		TOTAL EVALUATED PRICE	$0.00	$0.00	$0.00	$0.00	$0.00		
		Currency / Currencies of Proposal							
		DDP Site, Muskrat Falls, Incoterms 2010 (Yes / No)						Non Selected Bidders:	
		Point(s) of Origin						1)	
		% Content - Newfoundland/Other Canadian/Foreign	%	%	%	%	%	2)	
		Required On Site Date (ROS)							
		Work & Milestone Schedule Compliance /Acceptance (Yes / No)							
		Acceptable Execution Plan (Yes / No)							
		Engineering Critical Doc. (Weeks ARO)						Declined Bidders: Not Applicable	
		Collective Agreement Expiry Date							
		Recommended Spares Info Supplied (Yes / No)							
		Acceptance of T & C's (including Warranty & Guarantees etc, Yes / No)						Agreement Award Value:	
		If no, approval received for acceptance of Bidder's Exceptions (Yes / No)						(options, if applicable)	
		Acceptance of Terms of Payment (Yes / No)						Total Authorization Amount:	
		Pricing Firm through Delivery & Installation (Yes / No)						Project Budget:	
		Financial Evaluation Acceptance (Yes / No)						Variance: Over Budget	
		Technical Compliance / Acceptance (Yes / No)							
		QA Compliance / Acceptance (Pass; must be > 60% Yes / No)						Approvals	Approvals
		Health & Safety Compliance / Acceptance (Pass; must be > 60 % Yes/ No)						Name / Signature / Date	Name / Signature / Date
		Environmental Compliance (Pass; must be > 70 % Yes / No)						Robert Anderson, Contract Administrator	Randy Koob Lead Engineer Mechanical
		Risk Management Compliance / Acceptance (Pass; must be > 60% Yes / No)						Bruce Drover, Pkg Lead	M.Peddle, QA Lead
		Any Changes to the Evaluation Plan (if applicable)						Ramiro Trillo Heavy Mechancial Engineer	Sean Lee Health & Safety Lead
		Weight of Major Components						Luc Turcotte, Area Manager Powerhouse	David Haley, Environmental Lead
		Dimension of Largest Component (length (m) X width (m) X height (m))						J.D. Tremblay, Risk Manager	Tony Scott Lead Planner
		Other Criteria (if applicable)						Serge Guerette, Project Controls Manager	Pat Hussey, Supply Chain Manager
		Other Criteria (if applicable)						Ed Over, Sr. Advisor Commercial Strategies	Scott O'Brien, Project Manager C1
		Other Criteria (if applicable)							Jason Kean Deputy Project Manager

Appendix 4 - Commercial Evaluation Report

CONFIDENTIAL

Nalcor Energy-Lower Churchill Project

Commercial Evaluation - Intake & Draft Tube (A)

Package No./ Description: 505573-CH0032 SUPPLY/INSTALL POWERHOUSE HYDRO/MECHANICAL EQUIPMENT													
		All Prices below are taken from the RFP Price Breakdown Schedule as submitted by the Bidders as part of their Proposal. The item numbers below also match the item numbers on the Price Breakdown Schedule.	Bidder 1		Bidder 2		Bidder 3		Bidder 4		Bidder 5		
Item	Quantity	Description	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Notes
A-1	1	Mobilization		$ -		$ -		$ -		$ -		$ -	
A-2	1	Management		$ -		$ -		$ -		$ -		$ -	
A-3	1	Employee Training		$ -		$ -		$ -		$ -		$ -	
A-4	1	Health & Safety Requirements		$ -		$ -		$ -		$ -		$ -	
A-5	1	Environmental Requirements		$ -		$ -		$ -		$ -		$ -	
A-6	1	Quality Assurance/Quality Control		$ -		$ -		$ -		$ -		$ -	
A-7	1	Letter of Credit (per Article 7 of Agreement)		$ -		$ -		$ -		$ -		$ -	
A-8	1	Parental Guarantee (per Article 7 of Agreement)		$ -		$ -		$ -		$ -		$ -	
A-9	1	Performance Bond (per Article 7 of Agreement)		$ -		$ -		$ -		$ -		$ -	
A-10	1	Insurance (per Article 18 of Agreement)		$ -		$ -		$ -		$ -		$ -	
A-11	1	Warranty (per Article 17 of Agreement)		$ -		$ -		$ -		$ -		$ -	
A-12	1	Demobilization		$ -		$ -		$ -		$ -		$ -	
3.1	1	Phase A - Intake & Draft Tube Engineering		$ -		$ -		$ -		$ -		$ -	
3.2	1	Phase B - Intake & Draft Tube Fabrication & Supply		$ -		$ -		$ -		$ -		$ -	
3.3	1	Phase C - Intake & Draft Tube Installation		$ -		$ -		$ -		$ -		$ -	
3.4	1	Phase D - Intake & Draft Tube Commissioning		$ -		$ -		$ -		$ -		$ -	
	1	Any Options (Required and Accepted)		$ -		$ -		$ -		$ -		$ -	
		SUB-TOTAL CONDITIONED PRICES	Currency	$0.00	Currency	$0.00	Currency	$0.00	Currency	$0.00	Currency	$0.00	
		CURRENCY EXCHANGE (As at MM-DD-YYYY)		1		1		1		1		1	
		TOTAL CONTRACT AWARD VALUE	CAD	$0.00	CAD	$0.00	CAD	$0.00	CAD	$0.00	CAD	$0.00	
		(carry to page 1)											
		OPTIONS (refer to Options Sheet for details of submitted prices)											

Appendix 4 - Commercial Evaluation Report

CONFIDENTIAL

Nalcor Energy-Lower Churchill Project

Commercial Evaluation - Spillway Hydro/Mechanical (B)

Package No./ Description: 505573-CH0032 SUPPLY/INSTALL POWERHOUSE HYDRO/MECHANICAL EQUIPMENT													
		All Prices below are taken from the RFP Price Breakdown Schedule as submitted by the Bidders as part of their Proposal. The item numbers below also match the item numbers on the Price Breakdown Schedule.	Bidder 1		Bidder 2		Bidder 3		Bidder 4		Bidder 5		
Item	Quantity	Description	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Notes
A-1	1	Mobilization		$ -		$ -		$ -		$ -		$ -	
A-2	1	Management		$ -		$ -		$ -		$ -		$ -	
A-3	1	Employee Training		$ -		$ -		$ -		$ -		$ -	
A-4	1	Health & Safety Requirements		$ -		$ -		$ -		$ -		$ -	
A-5	1	Environmental Requirements		$ -		$ -		$ -		$ -		$ -	
A-6	1	Quality Assurance/Quality Control		$ -		$ -		$ -		$ -		$ -	
A-7	1	Letter of Credit (per Article 7 of Agreement)		$ -		$ -		$ -		$ -		$ -	
A-8	1	Parental Guarantee (per Article 7 of Agreement)		$ -		$ -		$ -		$ -		$ -	
A-9	1	Performance Bond (per Article 7 of Agreement)		$ -		$ -		$ -		$ -		$ -	
A-10	1	Insurance (per Article 18 of Agreement)		$ -		$ -		$ -		$ -		$ -	
A-11	1	Warranty (per Article 17 of Agreement)		$ -		$ -		$ -		$ -		$ -	
A-12	1	Demobilization		$ -		$ -		$ -		$ -		$ -	
4.1	1	Phase A - Spillway Hydro/Mechanical Engineering		$ -		$ -		$ -		$ -		$ -	
4.2	1	Phase B - Spillway Hydro/Mechanical Fabrication & Supply		$ -		$ -		$ -		$ -		$ -	
4.3	1	Phase C - Spillway Hydro/Mechanical Installation		$ -		$ -		$ -		$ -		$ -	
4.4	1	Phase D - Spillway Hydro/Mechanical Commissioning		$ -		$ -		$ -		$ -		$ -	
5.0	2	Spillway Hydro/Mechanical Alternate Supply		$ -		$ -		$ -		$ -		$ -	
		SUB-TOTAL CONDITIONED PRICES	*Currency*	*$0.00*	*Currency*	*$0.00*	*Currency*	*$0.00*	*Currency*	*$0.00*	*Currency*	*$0.00*	
		CURRENCY EXCHANGE (As at MM-DD-YYYY)		*1*		*1*		*1*		*1*		*1*	
		TOTAL CONTRACT AWARD VALUE	*CAD*	*$0.00*	*CAD*	*$0.00*	*CAD*	*$0.00*	*CAD*	*$0.00*	*CAD*	*$0.00*	
		(carry to page 1)											
12.0		OPTIONS (refer to Options Sheet for details of submitted prices)											

Appendix 4 - Commercial Evaluation Report

CONFIDENTIAL

Nalcor Energy-Lower Churchill Project

Commercial Evaluation - A & B

Package No./ Description: 505573-CH0032 SUPPLY/INSTALL POWERHOUSE HYDRO/MECHANICAL EQUIPMENT													Page 4 of 6
		All Prices below are taken from the RFP Price Breakdown Schedule as submitted by the Bidders as part of their Proposal. The item numbers below also match the item numbers on the Price Breakdown Schedule.	Bidder 1		Bidder 2		Bidder 3		Bidder 4		Bidder 5		
Item	Quantity	Description	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Notes
AB-1	1	Mobilization		$ -		$ -		$ -		$ -		$ -	
AB-2	1	Management		$ -		$ -		$ -		$ -		$ -	
AB-3	1	Employee Training		$ -		$ -		$ -		$ -		$ -	
AB-4	1	Health & Safety Requirements		$ -		$ -		$ -		$ -		$ -	
AB-5	1	Environmental Requirements		$ -		$ -		$ -		$ -		$ -	
AB-6	1	Quality Assurance/Quality Control		$ -		$ -		$ -		$ -		$ -	
AB-7	1	Letter of Credit (per Article 7 of Agreement)		$ -		$ -		$ -		$ -		$ -	
AB-8	1	Parental Guarantee (per Article 7 of Agreement)		$ -		$ -		$ -		$ -		$ -	
AB-9	1	Performance Bond (per Article 7 of Agreement)		$ -		$ -		$ -		$ -		$ -	
AB-10	1	Insurance (per Article 18 of Agreement)		$ -		$ -		$ -		$ -		$ -	
AB-11	1	Warranty (per Article 17 of Agreement)		$ -		$ -		$ -		$ -		$ -	
AB-12	1	Demobilization		$ -		$ -		$ -		$ -		$ -	
3.1	1	Phase A - Intake & Draft Tube Engineering		$ -		$ -		$ -		$ -		$ -	
3.2	1	Phase B - Intake & Draft Tube Fabrication & Supply		$ -		$ -		$ -		$ -		$ -	
3.3	1	Phase C - Intake & Draft Tube Installation		$ -		$ -		$ -		$ -		$ -	
3.4	1	Phase D - Intake & Draft Tube Commissioning		$ -		$ -		$ -		$ -		$ -	
4.1	1	Phase A - Spillway Hydro/Mechanical Engineering		$ -		$ -		$ -		$ -		$ -	
4.2	1	Phase B - Spillway Hydro/Mechanical Fabrication & Supply		$ -		$ -		$ -		$ -		$ -	
4.3	1	Phase C - Spillway Hydro/Mechanical Installation		$ -		$ -		$ -		$ -		$ -	
.4	1	Phase D - Spillway Hydro/Mechanical Commissioning		$ -		$ -		$ -		$ -		$ -	
5.0	2	Spillway Hydro/Mechanical Alternate Supply		$ -		$ -		$ -		$ -		$ -	
		SUB-TOTAL CONDITIONED PRICES	***Currency***	***$0.00***	***Currency***	***$0.00***	***Currency***	***$0.00***	***Currency***	***$0.00***	***Currency***	***$0.00***	
		CURRENCY EXCHANGE (As at MM-DD-YYYY)		***1***		***1***		***1***		***1***		***1***	
		TOTAL CONTRACT AWARD VALUE	***CAD***	***$0.00***	***CAD***	***$0.00***	***CAD***	***$0.00***	***CAD***	***$0.00***	***CAD***	***$0.00***	
		(carry to page 1)											
12.0		**OPTIONS (refer to Options Sheet for details of submitted prices)**											

Appendix 4 - Commercial Evaluation Report

CONFIDENTIAL

Nalcor Energy-Lower Churchill Project

Commercial Evaluation - Spares

Package No./ Description: 505573-CH0032 SUPPLY/INSTALL POWERHOUSE HYDRO/MECHANICAL EQUIPMENT

		All Prices below are taken from the RFP Price Breakdown Schedule as submitted by the Bidders as part of their Proposal. The item numbers below also match the item numbers on the Price Breakdown Schedule.	Bidder 1		Bidder 2		Bidder 3		Bidder 4		Bidder 5		
Item	Quantity	Description (Need Technical input re list of spares)	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Unit Cost		
		OPTIONS											
		Required Spares											
48 13 20		Required Spare Parts for Gates, Stoplogs & Trashracks											
	2	Complete Wheel Assemblies of each type		$0.00		$0.00		$0.00		$0.00		$0.00	
	4	Sets of Anti-Friction Bearings of each type		$0.00		$0.00		$0.00		$0.00		$0.00	
	2	Complete Guide Roller Assemblies of each type incl. springs		$0.00		$0.00		$0.00		$0.00		$0.00	
	1	Leaf Spring of each type		$0.00		$0.00		$0.00		$0.00		$0.00	
	1	Length of J Seal of each type sufficient for 1 complete gate or stoplog		$0.00		$0.00		$0.00		$0.00		$0.00	
	1	Length of Flat Seal of each type suffienct for 2 complete gates or stoplogs		$0.00		$0.00		$0.00		$0.00		$0.00	
	4	Moulded J Seal Corners of each type		$0.00		$0.00		$0.00		$0.00		$0.00	
	1	Spillway Gate Blower/Heater		$0.00		$0.00		$0.00		$0.00		$0.00	
	1	Complete set (6 Heaters) of Spillway gate Sied Guide Heaters		$0.00		$0.00		$0.00		$0.00		$0.00	
	1	Additional Spare Parts recommended by Contractor		$0.00		$0.00		$0.00		$0.00		$0.00	
		Total Required Spares for Gates, Stoplogs & Trashracks		$0.00		$0.00		$0.00		$0.00		$0.00	
48 13 21		Required Spare Parts for Hoists and Cranes											
	1	Set of Brake Pads for each type of Brake		$0.00		$0.00		$0.00		$0.00		$0.00	
	1	Set of each type of Sheave		$0.00		$0.00		$0.00		$0.00		$0.00	
	2	Sets of each type of Bearings		$0.00		$0.00		$0.00		$0.00		$0.00	
	2	Sets of each type of Coupling		$0.00		$0.00		$0.00		$0.00		$0.00	
	20	Litres of each type of Gear Box Oil		$0.00		$0.00		$0.00		$0.00		$0.00	
	1	Brake Solenoid of each type		$0.00		$0.00		$0.00		$0.00		$0.00	
	1	Torque Rated Motor for Intake Gates		$0.00		$0.00		$0.00		$0.00		$0.00	
	1	Torque Rated Motor for Spillway Gates		$0.00		$0.00		$0.00		$0.00		$0.00	
		Total Required Spares for Hoists & Cranes		$0.00		$0.00		$0.00		$0.00		$0.00	
48 13 22		Required Spare Parts for Trash Cleaning System											
	1	HPU Motor and Pump		$0.00		$0.00		$0.00		$0.00		$0.00	
	2	Sets Replaceable Plastic Scrapers on the cleaning head, with fasteners		$0.00		$0.00		$0.00		$0.00		$0.00	
	4	Hydraulic quick connnects of each size & type		$0.00		$0.00		$0.00		$0.00		$0.00	
	1	Gantry Drive Motor		$0.00		$0.00		$0.00		$0.00		$0.00	
	2	Complete sets of each type of Brake Shoes		$0.00		$0.00		$0.00		$0.00		$0.00	
	2	Sets of Wheel Bearings		$0.00		$0.00		$0.00		$0.00		$0.00	
	1	Set of Bearings for Rotating Platform		$0.00		$0.00		$0.00		$0.00		$0.00	
		Total Required Spares for Trash Cleaning System		$0.00		$0.00		$0.00		$0.00		$0.00	
		Total Cost Required Spare Parts		**$0.00**		**$0.00**		**$0.00**					

Appendix 4 - Commercial Evaluation Report

CONFIDENTIAL

Nalcor Energy-Lower Churchill Project

Commercial Evaluation - Assistance

Package No./ Description: 505573-CH0032 SUPPLY/INSTALL POWERHOUSE HYDRO/MECHANICAL EQUIPMENT

			Bidder 1		Bidder 2		Bidder 3		Bidder 4		Bidder 5		
Item	Quantity	Description	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Notes
9.0		Technical Assistance - Start Up											
		Fixed Price for Technical Assistance											
		Technical Assistance: Standard per Diem Rate											
		Technical Assistance: Weekday Standard Hourly Rate											
		Technical Assistance: Weekday Overtime Rate											
		Technical Assistance: Weekend Overtime Rate											
		Technical Assistance: Daily Subsistence Rate											
		Days Supervision required for Installation (and Commissioning)											
		Days Supervision Required for Commissioning											
		Cost of Mobilization per engineer per visit											
		Number of Engineers Required -											
		Number of Visits											
		Total Man Days											
		Estimated Total for Technical Assistance											
		Training: Estimated Manhours (Total)											
		Cost per Man Hour											
		Total Cost for Training											
				-		-							
				-		-							
				-		-							
				-		-							
				-		-							
				-		-							
		- 20% upon submission of preliminary drawings for review, comments & approval											
		- 20% upon approval & release for manufacturing											
		- 20% upon receipt of all major materials at the factory											
		- 20% upon successful completion of factory acceptance test											
		- 10% upon issuance of release for shipment or arrival at site, as determined by the purchase order											
		- 10% upon submission of final as-build and O&M manuals											

APPENDIX 5

TECHNICAL EVALUATION REPORT

SNC·LAVALIN Bid Evaluation Plan Appendix 4 nalcor energy

Technical Bid Evaluation

Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title:	LCP-MUSKRAT FALLS	Rev. Date.:
Tag No.:		Client:	NALCOR	Project No.: 505573

		Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
1	**GENERAL TECHNICAL REQUIREMENTS**											
	The bidder must acknowledge that there are **no exceptions to the technical specifications (TS).**	ACCEPT										
	The bidder must acknowledge that there are **no exceptions to the scope of works (SOW).**	ACCEPT										
	The technical requirements of the bid and subsequent execution of the SOW are **summarized in the Supplier Document Requirements List (SDRL).**	ACCEPT										
	The bidder shall make all necessary arrangements to undertake the SOW within the overall project milestone as illustrated in the **Milestone Schedule (MS) – Exhibit 9.**	ACCEPT										
2	**GENERAL TECHNICAL QUESTIONNAIRE**											
	The bidder shall provide the information listed below to the extent that it describes the systems being provided. Information not provided shall be provided after Award as listed in the SDRL.	ACCEPT										
3	**SPILLWAY STOPLOGS**											
3.1	**SPILLWAY UPSTREAM STOPLOGS (TEMPORARY) - EMBEDDED PARTS**											
3.1.1	Weight of embedded parts (without anchors)	129 000 kg ea.										
3.1.2	Loaded support bumper path profile/depth/moment of inertia	mm4										
3.1.3	Guide support bumper path profile/depth/moment of inertia	VTS										
3.1.4	Back guide/roller paths profile/depth/moment of inertia	VTS										
3.1.5	Side guides profile/depth/moment of inertia	VTS										
3.1.6	Sill beam profile/depth/moment of inertia	mm4										
3.1.7	Lintel beam profile	N/A										
3.1.8	Loaded support bumper path anchors/vertical spacing	450 mm A-307										
3.1.9	Guide support bumper path anchors/vertical spacing	600 mm A-307										
3.1.10	Back roller/guide paths anchors/vertical spacing	600 mm A-307										
3.1.11	Side guides anchors/vertical spacing	600 mm A-307										
3.1.12	Sill beam anchors/ horizontal spacing	450 mm A-307										
3.1.13	Lintel beam anchors/ horizontal spacing	N/A										
3.1.14	Material specification of sealing faces	A-240 SS-304										
3.1.15	Thickness of sealing faces	10 mm										
3.1.16	Material specification of bumper tracks	300/350W										
3.1.17	Thickness of bumper tracks	12 mm										
3.1.18	Hardness of bumper tracks	92-107 BHN										
3.1.19	Material specification of backing members	VTS										
3.1.20	Second stage concrete volumes	570 m3										

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Bid Evaluation Plan Appendix 4

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Technical Bid Evaluation

Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title:	LCP-MUSKRAT FALLS	Rev. Date.:
Tag No.:		Client:	NALCOR	Project No.: 505573

			Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
3.1a	**SPILLWAY STOPLOGS (PERMANENT) - EMBEDDED PARTS**												
3.1a.1	Weight of embedded parts (without anchors)	30 500 kg ea.											
3.1a.2	Loaded support bumper path profile/depth/moment of inertia	mm4											
3.1a.3	Guide support bumper path profile/depth/moment of inertia	VTS											
3.1a.4	Back guide/roller paths profile/depth/moment of inertia	VTS											
3.1a.5	Side guides profile/depth/moment of inertia	VTS											
3.1a.6	Sill beam profile/depth/moment of inertia	mm4											
3.1a.7	Lintel beam profile	N/A											
3.1a.8	Loaded support bumper path anchors/vertical spacing	450 mm A-307											
3.1a.9	Guide support bumper path anchors/vertical spacing	600 mm A-307											
3.1a.10	Back roller/guide paths anchors/vertical spacing	600 mm A-307											
3.1a.11	Side guides anchors/vertical spacing	600 mm A-307											
3.1a.12	Sill beam anchors/ horizontal spacing	450 mm A-307											
3.1a.13	Lintel beam anchors/ horizontal spacing	N/A											
3.1a.14	Material specification of sealing faces	A-240 SS-304											
3.1a.15	Thickness of sealing faces	10 mm											
3.1a.16	Material specification of bumper tracks	300/350W											
3.1a.17	Thickness of bumper tracks	12 mm											
3.1a.18	Hardness of bumper tracks	92-107 BHN											
3.1a.19	Material specification of backing members	300W											
3.1a.20	Second stage concrete volumes	378 m3											
3.2	**SPILLWAY UPSTREAM STOPLOGS – TYPE S1 (THEN PERMANENT)**												
3.2.1	Number of stoplog sections – S1	10											
3.2.2	Material specification	300WT											
3.2.3	Thickness of skin plate	25 mm											
3.2.4	Minimum thickness of structural parts	10 mm											
3.2.5	Height of Stoplog sections (seals compressed)	2 330 mm											
3.2.6	Weight of each Stoplog section	13 700 kg											
3.2.7	Material and type of seals	Elastomer Solid J											
3.2.8	Side seal distance between seal centres	10 900 mm											
3.2.9	Lintel seal Elevation – bottom seals compressed	N/A											
3.2.10	Overall width of Stoplogs	11 200 mm											
3.2.11	Overall depth of Stoplogs (seal face to back of stoplog)	1 000 mm											
3.2.12	Load bearing guides centre distance	11 200 mm											
3.2.13	Load bearing guides loading – normal operating conditions	VTS											
3.2.14	Load bearing guides loading – unusual operation conditions	VTS											
3.2.15	Material specification of bumpers	VTS											
3.2.16	Bumper loading – normal operating conditions	VTS											
3.2.17	Bumper loading – unusual operation conditions	VTS											
3.2.18	Description of spring-loaded rollers	VTS											

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Technical Bid Evaluation

Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title:	LCP-MUSKRAT FALLS	Rev. Date.:
Tag No.:		Client:	NALCOR	Project No.: 505573

			Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
3.2.19	Material specification of Filling Valve	N/A											
3.2.20	Material specification of Filling Valve seat	N/A											
3.2.21	Hoist load required to lift Stoplog:												
3.2.21.1	At balanced pressure	19 000 kg											
3.2.21.2	At 2.0 m differential pressure	29 000 kg											
3.3	**SPILLWAY UPSTREAM STOPLOGS – TYPE S2**												
3.3.1	Number of stoplog sections – S2	8											
3.3.2	Material specification	300WT											
3.3.3	Thickness of skin plate	19 mm											
3.3.4	Minimum thickness of structural parts	10 mm											
3.3.5	Height of Stoplog sections (seals compressed)	2 900 mm											
3.3.6	Weight of each Stoplog section	13 700 kg											
3.3.7	Material and type of seals	Elastomer Solid J											
3.3.8	Side seal distance between seal centres	10 900 mm											
3.3.9	Lintel seal Elevation – bottom seals compressed	N/A											
3.3.10	Overall width of Stoplogs	11 200 mm											
3.3.11	Overall depth of Stoplogs (seal face to back of stoplog)	800 mm											
3.3.12	Load bearing guides centre distance	11 200 mm											
3.3.13	Load bearing guides loading – normal operating conditions	VTS											
3.3.14	Load bearing guides loading – unusual operation conditions	VTS											
3.3.15	Material specification of bumpers	VTS											
3.3.16	Bumper loading – normal operating conditions	VTS											
3.3.17	Bumper loading – unusual operation conditions	VTS											
3.3.18	Description of spring-loaded rollers	VTS											
3.3.19	Material specification of Filling Valve	N/A											
3.3.20	Material specification of Filling Valve seat	N/A											
3.3.21	Hoist load required to lift Stoplog:												
3.3.21.1	At balanced pressure	19 000 kg											
3.3.21.2	At 2.0 m differential pressure	36 000 kg											
3.4	**SPILLWAY UPSTREAM STOPLOGS – TYPE S3**												
3.4.1	Number of stoplog sections – S3	18											
3.4.2	Material specification	300WT											
3.4.3	Thickness of skin plate	29 mm											
3.4.4	Minimum thickness of structural parts	10 mm											
3.4.5	Height of Stoplog sections (seals compressed)	1 422 mm											
3.4.6	Weight of each Stoplog section	13 700 kg											
3.4.7	Material and type of seals	Elastomer Solid J											
3.4.8	Side seal distance between seal centres	10 900 mm											
3.4.9	Lintel seal Elevation – bottom seals compressed	N/A											
3.4.10	Overall width of Stoplogs	11 200 mm											

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Technical Bid Evaluation

Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title:	LCP-MUSKRAT FALLS	Rev. Date.:
Tag No.:		Client:	NALCOR	Project No.: 505573

			Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
3.4.11	Overall depth of Stoplogs (seal face to back of stoplog)	1 400 mm											
3.4.12	Load bearing guides centre distance	11 200 mm											
3.4.13	Load bearing guides loading – normal operating conditions	VTS											
3.4.14	Load bearing guides loading – unusual operation conditions	VTS											
3.4.15	Material specification of bumpers	VTS											
3.4.16	Bumper loading – normal operating conditions	VTS											
3.4.17	Bumper loading – unusual operation conditions	VTS											
3.4.18	Description of spring-loaded rollers	VTS											
3.4.19	Material specification of Filling Valve	N/A											
3.4.20	Material specification of Filling Valve seat	N/A											
3.4.21	Hoist load required to lift Stoplog												
3.4.22	At balanced pressure	19 000 kg											
3.4.23	At 2.0 m differential pressure	24 000 kg											
3.5	**SPILLWAY LIFT BEAM FOR S1, S2 & S3 STOPLOGS**												
3.5.1	Height of Lift Beam	1000 mm											
3.5.2	Weight of Lift Beam	5 000 kg											
3.5.3	Latching mechanism description												
3.6	**SPILLWAY DOWNSTREAM STOPLOGS - EMBEDDED PARTS**												
3.6.1	Weight of embedded parts (without anchors)	21 000 kg ea.											
3.6.2	Loaded support bumper path profile/depth/moment of inertia	mm4											
3.6.3	Guide support bumper path profile/depth/moment of inertia	VTS											
3.6.4	Back guide/roller paths profile/depth/moment of inertia	VTS											
3.6.5	Side guides profile/depth/moment of inertia	VTS											
3.6.6	Sill beam profile/depth/moment of inertia	mm4											
3.6.7	Lintel beam profile	N/A											
3.6.8	Loaded support bumper path anchors/vertical spacing	450 mm A-307											
3.6.9	Guide support bumper path anchors/vertical spacing	600 mm A-307											
3.6.10	Back roller/guide paths anchors/vertical spacing	600 mm A-307											
3.6.11	Side guides anchors/vertical spacing	600 mm A-307											
3.6.12	Sill beam anchors/ horizontal spacing	450 mm A-307											
3.6.13	Lintel beam anchors/ horizontal spacing	N/A											
3.6.14	Material specification of sealing faces	A-240 SS-304											
3.6.15	Thickness of sealing faces	10 mm											
3.6.16	Material specification of bumper tracks	300/350W											
3.6.17	Thickness of bumper tracks	12 mm											
3.6.18	Hardness of bumper tracks	92-107 BHN											
3.6.19	Material specification of backing members	300W											
3.6.20	Second stage concrete volumes	102 m3											

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Technical Bid Evaluation

Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title:	LCP-MUSKRAT FALLS	Rev. Date.:
Tag No.:		Client:	NALCOR	Project No.: 505573

			Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
3.7	**SPILLWAY DOWNSTREAM STOPLOGS – TYPE S4**												
3.7.1	Number of stoplog sections – S4	10											
3.7.2	Material specification	300WT											
3.7.3	Thickness of skin plate	19 mm											
3.7.4	Minimum thickness of structural parts	10 mm											
3.7.5	Height of Stoplog sections (seals compressed)	2 180 mm											
3.7.6	Weight of each Stoplog section	6 400 kg ??											
3.7.7	Material and type of seals	Elastomer Solid J											
3.7.8	Side seal distance between seal centres	12 500 mm											
3.7.9	Lintel seal Elevation – bottom seals compressed	N/A											
3.7.10	Overall width of Stoplogs	12 800 mm											
3.7.11	Overall depth of Stoplogs (seal face to back of stoplog)	1000 mm											
3.7.12	Load bearing guides centre distance	12 800 mm											
3.7.13	Load bearing guides loading – normal operating conditions	VTS											
3.7.14	Load bearing guides loading – unusual operation conditions	VTS											
3.7.15	Material specification of bumpers	VTS											
3.7.16	Bumper loading – normal operating conditions	VTS											
3.7.17	Bumper loading – unusual operation conditions	VTS											
3.7.18	Description of spring-loaded rollers	VTS											
3.7.19	Material specification of Filling Valve	N/A											
3.7.20	Material specification of Filling Valve seat	N/A											
3.7.21	Hoist load required to lift Stoplog:												
3.7.21.1	At balanced pressure	11 000 kg											
3.7.21.2	At 2.0 m differential pressure	22 000 kg											
3.8	**SPILLWAY LIFT BEAM FOR TYPE S4 STOPLOGS**												
3.8.1	Height of Lift Beam	500 mm											
3.8.2	Weight of Lift Beam	5 000 kg											
3.8.3	Latching mechanism description												
4	**SPILLWAY GATES**												
4.1	**SPILLWAY GATE**												
4.1.1	Material specification	300W											
4.1.2	Thickness of skin plate	29-25 mm											
4.1.3	Minimum thickness of structural parts	10 mm											
4.1.4	Height of Spillway Gate (seals compressed)	23 000 m											
4.1.5	Number of gate sections	5 - 6											
4.1.6	Lintel seal Elevation	N/A											
4.1.7	Overall width of gate	11 500 mm											
4.1.8	Overall depth of gate (seal face to back of gate)	1 500 mm											
4.1.9	Side seal distance between seal centres	10 800 mm											

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Technical Bid Evaluation

Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title:	LCP-MUSKRAT FALLS
Tag No.:		Client:	NALCOR
			Project No.: 505573

			Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
4.1.10	Material specification of wheel and BHN	ASTM A504-C 321/363 BHN											
4.1.11	Wheel path centre distance	11 000 mm											
4.1.12	Number of wheels each gate section	2 to 6											
4.1.13	Wheel diameter	650 mm											
4.1.14	Wheel shaft diameter	240 mm											
4.1.15	Wheel bearing make/model number	TIMKEN/SKF											
4.1.16	Wheel loading – normal operating conditions	125 000 kg											
4.1.17	Wheel loading – unusual operation conditions	130 000 kg											
4.1.18	Material specification of bumpers	VTS											
4.1.19	Bumper loading – normal operating conditions	VTS											
4.1.20	Bumper loading – unusual operation conditions	VTS											
4.1.21	Static weight of gate with seals	178 000 kg											
4.1.22	Maximum hoist load required to open gate	300 000 kg											
4.1.23	Maximum exceptional hoist load (with gate jammed)	VTS											
4.1.24	Maximum load applied to hoist during emergency closure	VTS											
4.1.25	Minimum residual closing force during emergency closure	VTS											
4.1.26	Lift pin diameter	VTS											
4.1.27	Material and type of seals	Elastomer PTFE											
4.1.28	Maximum hydrostatic load on gate	3 000 000 kg											
4.1.29	Force required to start gate	270 000 kg											
4.2	**SPILLWAY GATE - EMBEDDED PARTS**												
4.2.1	Weight of primary embedded anchors and template steel/gate	VTS											
4.2.2	Number of embedded anchors per lower lined side guide	VTS											
4.2.3	Number of embedded anchors per upper side guide	VTS											
4.2.4	Number of embedded anchors per sill beam	VTS											
4.2.5	Number of embedded anchors per lintel beam	VTS											
4.2.6	Weight of embedded parts (without anchors) per gate	71 500 kg											
4.2.7	Loaded roller paths profile/depth/moment of inertia	mm4											
4.2.8	Guide roller paths profile/depth/moment of inertia	VTS											
4.2.9	Back guide paths profile/depth/moment of inertia	VTS											
4.2.10	Side guides profile/depth/moment of inertia	VTS											
4.2.11	Sill beam profile/depth/moment of inertia	mm4											
4.2.12	Lintel beam profile	N/A											
4.2.13	Loaded roller path anchors/vertical spacing	450 mm A-325											
4.2.14	Guide roller path anchors/vertical spacing	600 mm A-307											
4.2.15	Back guide path anchors/vertical spacing	600 mm A-307											
4.2.16	Side guides anchors/vertical spacing	600 mm A-307											
4.2.17	Sill beam anchors/horizontal spacing	450 mm A-307											
4.2.18	Lintel beam anchors/ horizontal spacing	N/A											
4.2.19	Material specification of sealing faces	A-240 SS-304											

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Technical Bid Evaluation

Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title: LCP-MUSKRAT FALLS	Rev. Date.:
Tag No.:		Client: NALCOR	Project No.: 505573

			Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
4.2.20	Thickness of sealing faces	A-240 SS-304											
4.2.21	Material specification of wheel tracks	ASTM A514-F/Q											
4.2.22	Width of wheel tracks	VTS											
4.2.23	Thickness of wheel tracks	VTS											
4.2.24	Hardness of wheel tracks	235 - 270 BHN											
4.2.25	Material specification of backing members	300W											
4.2.26	Second stage concrete volumes	1 148 m3											
4.3	SPILLWAY GATE – HOISTS												
4.3.1	Overall height	VTS											
4.3.2	Overall length	VTS											
4.3.3	Overall width	VTS											
4.3.4	Total weight of hoist (inc. ropes and sheave blocks)	27 500 kg ea.											
4.3.5	Rated capacity	300 000 kg											
4.3.6	Rope Drums												
4.3.6.1	Material	300W											
4.3.6.2	Number of ropes per rope drum	2											
4.3.6.3	Diameter to bottom of grooves	30 x Rope diam.											
4.3.6.4	Rope drum length	VTS											
4.3.6.5	Grooved length (Left hand & right hand)	VTS											
4.3.6.6	Type of bearings	VTS											
4.3.6.7	Bearing capacity	VTS											
4.3.7	Wire Ropes	CSA G4-M											
4.3.7.1	Type of material	IPS Galv. w/SFC											
4.3.7.2	Country of manufacture	CANADA / US / EUR											
4.3.7.3	Factor of safety	5/0.5 to Design Load											
4.3.7.4	Construction	6 x 19 - 6 x 37											
4.3.7.5	Rope diameter	VTS											
4.3.7.6	Breaking load	VTS											
4.3.7.7	Number of falls	VTS											
4.3.7.8	Wire Rope Dead Ends	4											
4.3.9	Hoist drive												
4.3.9.1	Motor rating	60 kW @ 0.9 m/min											
4.3.9.2	Motor rated full load speed	1200 rpm											
4.3.9.3	Motor rated emergency lower speed	2400 rpm											
4.3.9.4	Rated voltage/# phase/frequency	575V/3P/60Hz											
4.3.9.5	Starting current	VTS											
4.3.9.6	Rated full load current	VTS											
4.3.9.7	Motor manufacturer	VTS											
4.3.9.8	Motor Class	VTS											
4.3.9.9	Locked-rotor current	VTS											

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Technical Bid Evaluation

Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title:	LCP-MUSKRAT FALLS	Rev. Date.:
Tag No.:		Client:	NALCOR	Project No.: 505573

			Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
4.3.9.10	Code letter	G											
4.3.9.11	Design letter	Design B											
4.3.9.12	Rated temperature rise	Class B											
4.3.9.13	Insulation system class	Class: F											
4.3.9.14	Rated ambient temperature	40 Degree C											
4.3.9.15	Time rating	Continuous											
4.3.9.16	Secondary volts/# phase/full load current (for wound-rotor induction motor)	VTS											
4.3.9.17	Motor Thermally protected (Yes or no)	VTS											
4.3.9.18	Motor Space Heater- rated voltage/#phase/watts	120V/1P/VTS											
4.3.9.19	Gear Box Space Heater- rated voltage/#phase/watts	120V/1P/VTS											
4.3.9.20	Motor full load efficiency	Premium high efficiency											
4.3.9.21	Power factor	VTS											
4.3.9.22	Service factor	1.15											
4.3.9.23	Enclosure type	TEFC											
4.3.9.24	NEMA Frame type	NEMA MG-1											
4.3.9.25	NEMA Design	VTS											
4.3.9.26	Inverter Duty (yes/no)	VTS											
4.3.10	Gearbox												
4.3.10.1	Gearbox manufacturer	SEW EUR (Equiv.)											
4.3.10.2	Gearbox drive ratio	Fully enclosed											
4.3.11	Brakes												
4.3.11.1	Holding brake manufacturer	ELEVANJA											
4.3.11.2	Holding brake type	Magnetic Drum											
4.3.11.3	Holding brake rated torque	VTS											
4.3.11.4	Fan Brake	Power absorption											
4.3.11.5	Fan brake manufacturer	SHELDONS											
4.3.11.6	Fan brake rated torque	VTS											
4.3.11.7	Fan brake speed during emergency lower	2 400 rpm											
4.3.11.8	Fan brake maximum rated speed	3 600 rpm											
4.3.12	Controls												
4.3.12.1	PLC (Programmable Logic Controller) (Make)	Schneider											
4.3.12.2	PLC (Programmable Logic Controller) (Model)	Modicon Quantum											
4.3.12.3	HMI (Human Machine Interface) display (Make)	Nematron											
4.3.12.4	HMI (Human Machine Interface) display (Model)	VTS											
4.3.12.5	Rotary limit switch manufacturer and model	VTS											
4.3.12.6	Control cabinet manufacturer	VTS											
4.3.12.7	Control power	dual 125 Vdc pwr supplies											
4.3.12.8	General Arrangement drawing of the hoist assembly.	VTS											
4.3.12.9	Details of fan brake	VTS											

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Tag No.:		Client:	NALCOR	Project No.: 505573

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Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
4.3.12.10	Details of motor	VTS											
4.3.12.11	Details of holding brake operation	VTS											
4.3.12.12	Extreme upper limit switch make and model	VTS											
4.3.12.13	Details of drum dogging device limit switch	VTS											
4.3.12.14	Continuous position indicator make and model	VTS											
4.3.12.15	Maintenance upper limit switch make and model	VTS											
4.3.12.16	Hoist load cell make and model	VTS											
4.3.12.17	Slack rope detection make and model	VTS											
4.3.12.18	Unbalance wire rope load detector make and model	VTS											
4.3.12.19	Horn make and model	VTS											
4.4	**SPILLWAY GATE HEATING CONTROL**												
4.4.1	Heating control panel manufacturer	VTS											
4.4.2	Temperature controller make and model	VTS											
4.4.3	TRIAC make and model	VTS											
4.4.4	Make and model of temperature sensor located inside the gate	VTS											
4.4.5	Make and model of temperature sensor for embedded part	VTS											
4.4.6	Make and model of temperature sensor for heating element	thermocouple											
4.4.7	Blower/heater type/description	VTS											
4.4.8	Heater Rating (each)	VTS											
4.4.9	Blower air flow rate (each)	VTS											
4.4.10	Number of Blower/heaters	minimum two (2)											
4.5	**SPILLWAY HOIST HOUSE – OVERHEAD CRANE**												
4.5.1	Rated capacity	1 000 kg min.											
4.5.2	Description	Electric Overhead - Double Brake											
4.6	**SPILLWAY GATE MOTOR CONTROL CENTRES**												
4.6.1	Manufacturer	VTS											
4.6.2	Model No.	VTS											
4.6.3	Rated Voltage	600 V/3P/60Hz											
4.6.4	Rated Bus Current	800 A minimum											
4.6.5	Enclosure Type	Indoor CSA 1 Gasketted Enclosure, Class 1 Type B (Suitable for installed enviroment)											
4.6.6	Bus Bracing	42kA											
4.6.7	Disconnecting Means (Fused Switch or Circuit Breaker)	Feeder-MCCB, MCP											
4.6.8	Overload relay Type	VTS											

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Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
4.7	SPILLWAY GATE - DOGGING DEVICES												
4.7.1	Dogging devise weight - each	VTS											
4.7.2	Dogging devise guide Weight - each	VTS											
4.7.3	Dogging beam profile/depth/moment of inertia	VTS											
4.7.4	Block-out profile	VTS											
4.7.5	Locking mechanism	VTS											
4.7.6	Operation description	VTS											
4.8	SPILLWAY HOIST HOUSE ELECTRICAL DISTRIBUTION												
4.8.1	Motor Control Center	N/A											
4.8.1.1	Manufacturer	N/A											
4.8.1.2	Model No.	N/A											
4.8.1.3	Rated Voltage	N/A											
4.8.1.4	Rated Bus Current	N/A											
4.8.1.5	Enclosure Type	N/A											
4.8.1.6	Bus Bracing	N/A											
4.8.1.7	Disconnecting Means (Fused Switch or Circuit Breaker)	N/A											
4.8.1.8	Overload Relay Type	N/A											
4.8.2	Dry Type Distribution Transformer												
4.8.2.1	Manufacturer	VTS											
4.8.2.2	Model No.	VTS											
4.8.2.3	Number per Hoist House	7											
4.8.2.4	Enclosure Type	CSA C 22.2, No. 94, Type 2.											
4.8.2.5	Voltage Ratio	600-208/120V, 600-600/347V (Lighting)											
4.8.2.6	Rated Capacity	30 kVA minimum											
4.8.3	Distribution Panelboards												
4.8.3.1	Manufacturer	VTS											
4.8.3.2	Model No.	VTS											
4.8.3.3	Number per Hoist House	7											
4.8.3.4	Enclosure Type	Suitable for installed environment											
4.8.3.5	Voltage Ratio	208/120V 3P, 4W (distribution) 600/347V 3P, 4W (lighting)											
4.8.3.6	Rated Capacity	100 A (42 cct) minimum											
4.8.3.7	Lighting Fixtures	VTS											
4.8.3.8	Manufacturer	VTS											
4.8.3.9	Model No.	VTS											
4.8.3.10	Number per Hoist House	VTS											

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Item Number	Description	Specified Value or Reference	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
4.8.3.11	Lamp Type	VTS										
4.8.3.12	Lamp Output	VTS										
4.8.4	Radiant Heaters											
4.8.4.1	Manufacturer	VTS										
4.8.4.2	Model No.	VTS										
4.8.4.3	Number per Hoist House	12										
4.8.4.4	Voltage	600V/3P/60Hz										
4.8.4.5	Rating	10kW										
4.9	**SPILLWAY GATE – TOWERS AND HOIST HOUSE ENCLOSURE**											
4.9.1	Overall tower height	VTS										
4.9.2	Tower width (c/c columns)	VTS										
4.9.3	Tower depth (c/c columns)	VTS										
4.9.4	Overall hoist house length	79.5 m										
4.9.5	Hoist house depth (inside)	VTS										
4.9.6	Hoist house height (inside)	VTS										
4.9.7	Total weight of towers (inc. stairs and hoist house)	660 000 kg										
4.9.8	Material specification of steel	300WT										
4.9.9	Number of embedded anchors per tower	6 min										
4.9.10	Maximum length of embedded anchors	3 m approx.										
4.9.11	Weight of embedded anchors per tower	VTS										
4.9.12	Main steel columns profile (columns)	VTS										
4.9.13	Typical steel profile (horizontal members)	VTS										
4.9.14	Typical steel profile (bracing members)	VTS										
4.9.15	Minimum thickness of structural parts	8 mm										
4.9.16	Maximum tower compression load (start gate opening)	VTS										
4.9.17	Maximum tower exceptional compression load (gate jammed)	VTS										
	Load reacions on deck level	VTS										
5	**INTAKE**											
5.1	**INTAKE TRASHRACK - EMBEDDED PARTS**											
5.1.1	Weight of embedded parts (without anchors)	90 000 kg ea. bay										
5.1.2	Loaded support bumper path profile/depth/moment of inertia	mm4										
5.1.3	Guide support bumper path profile/depth/moment of inertia	VTS										
5.1.4	Side guides profile/depth/moment of inertia	VTS										
5.1.5	Sill beam profile/depth/moment of inertia	mm4										
5.1.6	Loaded support bumper path anchors/vertical spacing	450 mm A-307										
5.1.7	Guide support bumper path anchors/vertical spacing	600 mm A-307										
5.1.8	Side guides anchors/vertical spacing	600 mm A-307										
5.1.9	Sill beam anchors/ horizontal spacing	450 mm A-307										
5.1.10	Material specification of embedded parts	300W										

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Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
5.1.11	Second stage concrete volumes	1 232 m3											
5.2	**INTAKE TRASHRACKS**												
5.2.1	Number of trashrack sections per water passage	8											
5.2.2	Material specification - trashrack bars	300W/350W											
5.2.3	Material specification - trashrack frame	300W											
5.2.4	Profile of trashrack bars	FB Rounded edge											
5.2.5	Thickness of trashrack bars	10-16 mm											
5.2.6	Depth of trashrack bars	100-150 mm											
5.2.7	Spacing between trashrack bars	> 100 mm											
5.2.8	Weight of each upper trashrack section	16 000 kg											
5.2.9	Weight of each lower trashrack section	15 000 kg											
5.2.10	Height of each upper trashrack sections	3 700 mm											
5.2.11	Height of each lower trashrack sections	3 600 mm											
5.2.12	Hoist load required to lift Trashrack top section	18 000 kg											
5.2.13	Hoist load required to lift Trashrack lower section	18 000 kg											
5.2.14	Bumper loading – normal operating conditions	VTS											
5.2.15	Maximum Passage Obstruction (MAX)	26.7%											
5.2.16	Maximum Unsupported distance of bars	720 mm											
5.2.17	Maximum Head Loss thru trash racks at rated load	50 mm											
5.3	**INTAKE TRASHRACK - LIFT BEAM**												
5.3.1	Height of Lift Beam	500 mm											
5.3.2	Weight of Lift Beam	3000 kg											
5.3.3	Latching mechanism description												
5.4	**INTAKE BULKHEAD GATE - EMBEDDED PARTS**												
5.4.1	Weight of embedded parts (without anchors)	104 000 kg ea. bay											
5.4.2	Loaded support bumper path profile/depth/moment of inertia	mm4											
5.4.3	Guide support bumper path profile/depth/moment of inertia	VTS											
5.4.4	Back guide/roller paths profile/depth/moment of inertia	VTS											
5.4.5	Side guides profile/depth/moment of inertia	VTS											
5.4.6	Sill beam profile/depth/moment of inertia	mm4											
5.4.7	Lintel beam profile	mm4											
5.4.8	Loaded support bumper path anchors/vertical spacing	300 mm A-307											
5.4.9	Guide support bumper path anchors/vertical spacing	600 mm A-307											
5.4.10	Back roller/guide paths anchors/vertical spacing	600 mm A-307											
5.4.11	Side guides anchors/vertical spacing	600 mm A-307											
5.4.12	Sill beam anchors/ horizontal spacing	450 mm A-307											
5.4.13	Lintel beam anchors/ horizontal spacing	450 mm A-307											
5.4.14	Material specification of sealing faces	A-240 SS-304											

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Item Number	Description	Specified Value or Reference	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
5.4.15	Thickness of sealing faces	10 mm										
5.4.16	Material specification of bumper tracks	300/350W										
5.4.17	Thickness of bumper tracks	12 mm										
5.4.18	Hardness of bumper tracks	92-107 BHN										
5.4.19	Material specification of backing members	300W										
5.4.20	Second stage concrete volumes	956 m3										
5.5	**INTAKE BULKHEAD GATES**											
5.5.1	Number of bulkhead gate sections	5										
5.5.2	Material specification	300W										
5.5.3	Thickness of skin plate	29 - 25 mm										
5.5.4	Minimum thickness of structural parts	10 mm										
5.5.5	Height of top bulkhead gate section (seals compressed)	4 150 mm										
5.5.6	Height intermediate bulkhead gate sections (seals compressed)	4 000 mm										
5.5.7	Height of bottom bulkhead gate sections (seals compressed)	4 000 mm										
5.5.8	Weight of each top bulkhead gate section	21 000 kg										
5.5.9	Weight of each intermediate bulkhead gate section	20 500 kg										
5.5.10	Weight of each bottom bulkhead gate section	20 500 kg										
5.5.11	Material and type of seals	Elastomer Solid J										
5.5.12	Side seal distance between seal centres	6 800 mm										
5.5.13	Lintel seal Elevation – bottom seals compressed	17.81 m										
5.5.14	Overall width of bulkhead gate	7 100 mm										
5.5.15	Overall depth of bulkhead gate (seal face to back of stoplog)	1 200 mm										
5.5.16	Load bearing guides centre distance	7 100 mm										
5.5.17	Load bearing guides loading – normal operating conditions	VTS										
5.5.18	Load bearing guides loading – unusual operation conditions	VTS										
5.5.19	Material specification of bumpers	VTS										
5.5.20	Bumper loading – normal operating conditions	VTS										
5.5.21	Bumper loading – unusual operation conditions	VTS										
5.5.22	Description of spring-loaded rollers	VTS										
5.5.23	Material specification of Filling Valve	VTS										
5.5.24	Material specification of Filling Valve seat	VTS										
5.5.25	Hoist load required to lift bulkhead gate sections:											
5.5.25.1	At balanced pressure	24 000 kg										
5.5.25.2	At 2.0 m differential pressure	41 000 kg										
5.6	**INTAKE BULKHEAD GATE - LIFT BEAM**											
5.6.1	Height of Lift Beam	500 mm										
5.6.2	Weight of Lift Beam	3000 kg										
5.6.3	Latching mechanism description											

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Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
5.7	INTAKE BULKHEAD GATE - DOGGING DEVICES												
5.7.1	Dogging devise Weight - each	VTS											
5.7.2	Dogging devise guide Weight - each	VTS											
5.7.3	Dogging beam profile/depth/moment of inertia	VTS											
5.7.4	Block-out profile	VTS											
5.7.5	Locking mechanism	VTS											
5.7.6	Operation description	VTS											
5.8	INTAKE GATE												
5.8.1	Material specification	300W											
5.8.2	Thickness of skin plate	32-29 mm											
5.8.3	Minimum thickness of structural parts	10 mm											
5.8.4	Height of Intake Gate (seals compressed)	20 300 mm											
5.8.5	Number of gate sections	4 - 5											
5.8.6	Lintel seal Elevation	14.05 m											
5.8.7	Overall width of gate	7 500 mm											
5.8.8	Overall depth of gate (seal face to back of gate)	1 200 mm											
5.8.9	Side seal distance between seal centres	6 800 mm											
5.8.10	Material specification of wheel and BHN	ASTM A504-C 321/363 BHN											
5.8.11	Wheel path centre distance	7 100 mm											
5.8.12	Number of wheels each gate section (TOTAL)	50 Total											
5.8.13	Wheel diameter	500 mm											
5.8.14	Wheel shaft diameter	200 mm											
5.8.15	Wheel bearing make/model number	TIMKEN/SKF											
5.8.16	Wheel loading – normal operating conditions	100 000 kg											
5.8.17	Wheel loading – unusual operation conditions	105 000 kg											
5.8.18	Material specification of bumpers	VTS											
5.8.19	Bumper loading – normal operating conditions	VTS											
5.8.20	Bumper loading – unusual operation conditions	VTS											
5.8.21	Weight of each gate section with seals												
5.8.21.1	Lower Section (Sill)	VTS											
5.8.21.2	Intermediate Section 1	VTS											
5.8.21.3	Intermediate Section 2	VTS											
5.8.21.4	Intermediate Section 3	VTS											
5.8.21.5	Upper Section (Top)	VTS											
5.8.22	Combined static weight of gate	125 000 kg											
5.8.23	Maximum hoist load required to open gate	290 000 kg											
5.8.24	Maximum exceptional hoist load (with gate jammed)	VTS											
5.8.25	Maximum load applied to hoist during emergency closure	VTS											
5.8.26	Minimum residual closing force during emergency closure	VTS											
5.8.27	Lift pin diameter	VTS											

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Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
5.8.28	Material and type of seals	Elastomer PTFE											
5.8.29	Maximum hydrostatic load on gate	5 000 000 kg											
5.8.30	Force required to start gate opening	260 000 kg											
5.9	**INTAKE GATE - EMBEDDED PARTS**												
5.9.1	Weight of primary embedded anchors and template steel/gate	VTS											
5.9.2	Number of embedded anchors per lower lined side guide	VTS											
5.9.3	Number of embedded anchors per upper side guide	VTS											
5.9.4	Number of embedded anchors per sill beam	VTS											
5.9.5	Number of embedded anchors per lintel beam	VTS											
5.9.6	Weight of embedded parts (without anchors) per gate	85 000 kg											
5.9.7	Loaded roller paths profile/depth/moment of inertia	mm4											
5.9.8	Guide roller paths profile/depth/moment of inertia	VTS											
5.9.9	Back guide paths profile/depth/moment of inertia	VTS											
5.9.10	Side guides profile/depth/moment of inertia	VTS											
5.9.11	Sill beam profile/depth/moment of inertia	mm4											
5.9.12	Lintel beam profile	mm4											
5.9.13	Loaded roller path anchors/vertical spacing	300 mm A-325											
5.9.14	Guide roller path anchors/vertical spacing	600 mm A-307											
5.9.15	Back guide path anchors/vertical spacing	600 mm A-307											
5.9.16	Side guides anchors/vertical spacing	600 mm A-307											
5.9.17	Sill beam anchors/horizontal spacing	450 mm A-307											
5.9.18	Lintel beam anchors/ horizontal spacing	450 mm A-307											
5.9.19	Material specification of sealing faces	A-240 SS-304											
5.9.20	Thickness of sealing faces	A-240 SS-304											
5.9.21	Material specification of wheel tracks	ASTM A514-F/Q											
5.9.22	Width of wheel tracks	VTS											
5.9.23	Thickness of wheel tracks	VTS											
5.9.24	Hardness of wheel tracks	235 - 270 BHN											
5.9.25	Material specification of backing members	VTS											
5.9.26	Second stage concrete volumes	1 343 m3											
5.10	**INTAKE GATE - DOGGING DEVICES**												
5.10.1	Dogging devise Weight - each	VTS											
5.10.2	Dogging devise guide Weight - each	VTS											
5.10.3	Dogging beam profile/depth/moment of inertia	VTS											
5.10.4	Block-out profile	VTS											
5.10.5	Locking mechanism	VTS											
5.10.6	Operation description												
5.11	**INTAKE GATE – HOISTS**												
5.11.1	Overall height	VTS											

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Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
5.11.2	Overall length	< 8000 mm											
5.11.3	Overall width	< 3200 mm											
5.11.4	Total weight of hoist (inc. ropes and sheave blocks)	25 000 kg											
5.11.5	Rated capacity	290 000 kg											
5.11.6	Rope drum												
5.11.6.1	Material	300/350W											
5.11.6.2	Diameter to bottom of grooves	30 x Rope diam.											
5.11.6.3	Rope drum length	VTS											
5.11.6.4	Grooved length (Left hand/ right hand)	VTS											
5.11.6.5	Type of bearings	VTS											
5.11.6.6	Bearing capacity	VTS											
5.11.7	Wire Ropes	CSA G4-M											
5.11.7.1	Type of material	IPS Galv. w/SFC											
5.11.7.2	Country of manufacture	CANADA / US / EUR											
5.11.7.3	Factor of safety	5/0.5 to Design Load											
5.11.7.4	Construction	6 x 19 - 6 x 37											
5.11.7.5	Rope diameter	mm											
5.11.7.6	Breaking load	kg											
5.11.7.7	Number of falls	VTS											
5.11.7.8	Wire Rope Dead Ends	2											
5.11.8	Hoist drive												
5.11.8.1	Motor rating	75 kW @ 1.2 m/min											
5.11.8.2	Motor rated full load speed	1200 rpm											
5.11.8.3	Motor rated emergency lower speed	2400 rpm											
5.11.8.4	Rated voltage/# phase/frequency	575V/3P/60Hz											
5.11.8.5	Starting current	VTS											
5.11.8.6	Rated full load current	VTS											
5.11.8.7	Motor manufacturer	VTS											
5.11.8.8	Motor Class	VTS											
5.11.8.9	Locked-rotor current	VTS											
5.11.8.10	Code letter	G											
5.11.8.11	Design letter	Design B											
5.11.8.12	Rated temperature rise	Class B											
5.11.8.13	Insulation system class	Class: F											
5.11.8.14	Rated ambient temperature	40 Degree C											
5.11.8.15	Time rating	Continuous											
5.11.8.16	Secondary volts/# phase/full load current (for wound-rotor induction motor)	VTS											
5.11.8.17	Motor Thermally protected (Yes or no)	VTS											
5.11.8.18	Motor Space Heater- rated voltage/#phase/watts	120V/1P/VTS											
5.11.8.19	Gear Box Space Heater- rated voltage/#phase/watts	120V/1P/VTS											

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			Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
5.11.8.20	Motor full load efficiency	Premium high efficiency											
5.11.8.21	Power factor	VTS											
5.11.8.22	Service factor	1.15											
5.11.8.23	Enclosure type	TEFC											
5.11.8.24	NEMA Frame type	NEMA MG-1											
5.11.8.25	NEMA Design	VTS											
5.11.8.26	Inverter Duty (yes/no)	VTS											
5.11.9	Gearbox												
5.11.9.1	Gearbox manufacturer	SEW EURODRIVE											
5.11.9.2	Gearbox drive ratio	Fully enclosed											
5.11.10	Brakes												
5.11.10.1	Holding brake manufacturer	ELEVANJA											
5.11.10.2	Holding brake type	Magnetic Drum											
5.11.10.3	Holding brake rated torque	VTS											
5.11.10.4	Fan Brake	Power absorption											
5.11.10.5	Fan brake manufacturer	SHELDONS											
5.11.10.6	Fan brake rated torque	VTS											
5.11.10.7	Fan brake speed during emergency lower	2 400 rpm											
5.11.10.8	Fan brake maximum rated speed	3 600 rpm											
5.11.11	Controls												
5.11.11.1	PLC (Programmable Logic Controller) (Make)	Schneider											
5.11.11.2	PLC (Programmable Logic Controller) (Model)	Modicon Quantum											
5.11.11.3	HMI (Human Machine Interface) display (Make)	Nematron											
5.11.11.4	HMI (Human Machine Interface) display (Model)	VTS											
5.11.11.5	Rotary limit switch manufacturer and model	VTS											
5.11.11.6	Control cabinet manufacturer	VTS											
5.11.11.7	Control power	dual 125 Vdc pwr supplies											
5.11.11.8	General Arrangement drawing of the hoist assembly.	VTS											
5.11.11.9	Details of fan brake	VTS											
5.11.11.10	Details of motor	VTS											
5.11.11.11	Details of holding brake operation	VTS											
5.11.11.12	Extreme upper limit switch make and model	VTS											
5.11.11.13	Details of drum dogging device limit switch	VTS											
5.11.11.14	Continuous position indicator make and model	VTS											
5.11.11.15	Maintenance upper limit switch make and model	VTS											
5.11.11.16	Hoist load cell make and model	VTS											
5.11.11.17	Slack rope detection make and model	VTS											
5.11.11.18	Unbalance wire rope load detector make and model	VTS											
5.11.11.19	Horn make and model	VTS											

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Item Number	Description	Specified Value or Reference	Bidder: 1 Proposed	Compliant	2 Proposed	Compliant	3 Proposed	Compliant	4 Proposed	Compliant	5 Proposed	Compliant
5.12	**INTAKE GATE MOTOR CONTROL CENTRES**											
5.12.1	Manufacturer	VTS										
5.12.2	Model No.	VTS										
5.12.3	Rated Voltage	600V/3P/60Hz										
5.12.4	Rated Bus Current	800 A min										
5.12.5	Enclosure Type	Indoor CSA 1 Gasketted Enclosure, Class 1 Type B (Suitable for installed enviroment)										
5.12.6	Bus Bracing	42kA										
5.12.7	Disconnecting Means (Fused Switch or Circuit Breaker)	MCCB, MCP										
5.12.8	Overload relay Type	VTS										
6	**POWERHOUSE DRAFT TUBE**											
6.1	**POWERHOUSE DRAFT TUBE STOPLOGS - EMBEDDED PARTS**											
6.1.1	Number of stoplog sections	N/A										
6.1.2	Weight of embedded parts (without anchors)	69 500 kg ea.bay										
6.1.3	Loaded support bumper path profile/depth/moment of inertia	mm4										
6.1.4	Guide support bumper path profile/depth/moment of inertia	VTS										
6.1.5	Back guide/roller paths profile/depth/moment of inertia	VTS										
6.1.6	Side guides profile/depth/moment of inertia	VTS										
6.1.7	Sill beam profile/depth/moment of inertia	mm4										
6.1.8	Lintel beam profile	mm4										
6.1.9	Loaded support bumper path anchors/vertical spacing	600 mm A-307										
6.1.10	Guide support bumper path anchors/vertical spacing	600 mm A-307										
6.1.11	Back roller/guide paths anchors/vertical spacing	600 mm A-307										
6.1.12	Side guides anchors/vertical spacing	600 mm A-307										
6.1.13	Sill beam anchors/ horizontal spacing	450 mm A-307										
6.1.14	Lintel beam anchors/ horizontal spacing	450 mm A-307										
6.1.15	Material specification of sealing faces	A-240 SS-304										
6.1.16	Thickness of sealing faces	10 mm										
6.1.17	Material specification of bumper tracks	300/350W										
6.1.18	Thickness of bumper tracks	12 mm										
6.1.19	Hardness of bumper tracks	92-107 BHN										
6.1.20	Material specification of backing members	300W										
6.1.21	Second stage concrete volumes	388 m3										
6.2	**POWERHOUSE DRAFT TUBE STOPLOGS**											
6.2.1a	Number of stoplog sections	4 ea. bay										

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Item Number	Description	Specified Value or Reference	Bidder: 1 Proposed	Compliant	2 Proposed	Compliant	3 Proposed	Compliant	4 Proposed	Compliant	5 Proposed	Compliant
6.2.1	Material specification	300W										
6.2.2	Thickness of skin plate	22 - 55 mm										
6.2.3	Minimum thickness of structural parts	10 mm										
6.2.4	Height of top gate sections (seals compressed)	2650 mm										
6.2.5	Height of intermediate gate sections (seals compressed)	2 600 mm										
6.2.6	Height of bottom gate sections (seals compressed)	2 600 mm										
6.2.7	Weight of top gate section	13 500 kg										
6.2.8	Weight of intermediate gate section	13 000 kg										
6.2.9	Weight of bottom gate section	13 000 kg										
6.2.10	Material and type of seals	Elastomer Solid J										
6.2.11	Side seal distance between seal centres	11 500 mm										
6.2.12	Lintel seal Elevation – bottom seals compressed	-17.08 m										
6.2.13	Overall width of gates	11 700 mm										
6.2.14	Overall depth of gates (seal face to back of stoplog)	1 400 mm ??										
6.2.15	Load bearing guides centre distance	11 700 mm										
6.2.16	Load bearing guides loading – normal operating conditions	VTS										
6.2.17	Load bearing guides loading – unusual operation conditions	VTS										
6.2.18	Material specification of bumpers	VTS										
6.2.19	Bumper loading – normal operating conditions	VTS										
6.2.20	Bumper loading – unusual operation conditions	VTS										
6.2.21	Description of spring-loaded rollers	VTS										
6.2.22	Hoist load required to lift top stoplog section:											
6.2.22.1	At balanced pressure	18 000 kg										
6.2.22.2	At 2.0 m differential pressure	32 000 kg										
6.2.23	Hoist load required to lift heaviest gate section	32 000 kg										
6.3	**POWERHOUSE DRAFT TUBE STOPLOGS - LIFT BEAM**											
6.3.1	Height of Lift Beam	1000 mm										
6.3.2	Weight of Lift Beam	5 000 kg										
6.3.3	Latching mechanism description											
6.4	**POWERHOUSE DRAFT TUBE STOPLOGS – DOGGING / STORAGE DEVICES**											
6.4.1	Dogging devise Weight - each	VTS										
6.4.2	Dogging devise guide Weight - each	VTS										
6.4.3	Dogging beam profile/depth/moment of inertia	VTS										
6.4.4	Block-out profile	VTS										
6.4.5	Top support mechanism	VTS										
6.4.6	Operation description	VTS										
6.5	**POWERHOUSE DRAFT TUBE OVERHEAD CRANE**											
6.5.1	Overall height (from top of rail)	< 1150 mm										

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Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
6.5.2	Overall length	VTS											
6.5.3	Overall width	VTS											
6.5.4	Crane rail centre distance	7 800 m											
6.5.5	Total weight of crane (inc. trolley, ropes and sheave blocks)	24 000 kg											
6.5.6	Total weight of trolley (inc. ropes and sheave blocks)	VTS											
6.5.7	Rated capacity	32 000 kg											
6.5.8	Rope drum(s)												
6.5.8.1	Material	300W											
6.5.8.2	Diameter to bottom of grooves	30 x Rope diam.											
6.5.8.3	Rope drum length	VTS											
6.5.8.4	Grooved length (Left hand/ right hand)	VTS											
6.5.8.5	Type of bearings	VTS											
6.5.8.6	Bearing capacity	VTS											
6.5.9	Wire ropes	CSA G4-M											
6.5.9.1	Type of material	IPS Galv. w/SFC											
6.5.9.2	Country of manufacture	CANADA / US / EUR											
6.5.9.3	Factor of safety	5/0.5 to Design Load											
6.5.9.4	Construction	6 x 19 - 6 x 37											
6.5.9.5	Rope diameter	VTS											
6.5.9.6	Breaking load	VTS											
6.5.9.7	Number of falls	VTS											
6.5.10	Hoist drive												
6.5.10.1	Motor rating	20 kW @ 3 m/min											
6.5.10.2	Motor rated full load speed	1200 rpm											
6.5.10.3	Rated voltage /# phase/frequency	575V/3P/60Hz											
6.5.10.4	Starting current	VTS											
6.5.10.5	Rated full load current	VTS											
6.5.10.6	Motor manufacturer	VTS											
6.5.10.7	Motor Class	VTS											
6.5.10.8	Locked-rotor current	VTS											
6.5.10.9	Code letter	G											
6.5.10.10	Design letter	Design B											
6.5.10.11	Rated temperature rise	Class B											
6.5.10.12	Insulation system class	Class: F											
6.5.10.13	Rated ambient temperature	40 Degree C											
6.5.10.14	Time rating	Continuous											
6.5.10.15	Secondary volts/# phase/full load current (for wound-rotor induction motor)	VTS											
6.5.10.16	Motor Thermally protected (Yes or no)	VTS											
6.5.10.17	Motor Space Heater- rated voltage/#phase/watts	120V/1P/VTS											
6.5.10.18	Gear Box Space Heater- rated voltage/#phase/watts	120V/1P/VTS											

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Item Number	Description	Specified Value or Reference	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
6.5.10.19	Motor full load efficiency	Premium high efficiency										
6.5.10.20	Power factor	VTS										
6.5.10.21	Service factor	1.15										
6.5.10.22	Enclosure type	TEFC										
6.5.10.23	NEMA Frame type	NEMA MG-1										
6.5.10.24	NEMA Design	VTS										
6.5.10.25	Inverter Duty (yes/no)	VTS										
6.5.11	Gearbox											
6.5.11.1	Gearbox manufacturer	SEW EUR. (Equiv.)										
6.5.11.2	Gearbox drive ratio	Fully enclosed										
6.5.12	Brakes											
6.5.12.1	Holding brake manufacturer	ELEVANJA										
6.5.12.2	Holding brake type	Magnetic Drum										
6.5.12.3	Holding brake rated torque	VTS										
6.5.13	Gantry drives											
6.5.13.1	Gantry travel speed	30 m/min										
6.5.13.2	Number of gantry drives	4										
6.5.13.3	Motor rating	VTS										
6.5.13.4	Motor rated full load speed	VTS										
6.5.13.5	Rated voltage /# phase/frequency	575V/3P/60Hz										
6.5.13.6	Starting current	VTS										
6.5.13.7	Rated full load current	VTS										
6.5.13.8	Motor manufacturer	VTS										
6.5.13.9	Motor Class	VTS										
6.5.13.10	Locked-rotor current	VTS										
6.5.13.11	Code letter	G										
6.5.13.12	Design letter	Design B										
6.5.13.13	Rated temperature rise	Class B										
6.5.13.14	Insulation system class	Class: F										
6.5.13.15	Rated ambient temperature	40 Degree C										
6.5.13.16	Time rating	Continuous										
6.5.13.17	Secondary volts/# phase/full load current (for wound-rotor induction motor)	VTS										
6.5.13.18	Motor Thermally protected (Yes or no)	VTS										
6.5.13.19	Motor Space Heater- rated voltage/#phase/watts	120V/1P/VTS										
6.5.13.20	Gear Box Space Heater- rated voltage/#phase/watts	120V/1P/VTS										
6.5.13.21	Motor full load efficiency	Premium high efficiency										
6.5.13.22	Power factor	VTS										
6.5.13.23	Service factor	1.15										
6.5.13.24	Enclosure type	TEFC										

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Item Number	Description	Specified Value or Reference	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
6.5.13.25	NEMA Frame type	NEMA MG-1										
6.5.13.26	NEMA Design	VTS										
6.5.13.27	Inverter Duty (yes/no)	VTS										
6.5.13.28	Gearbox manufacturer	SEW EUR. (Equiv.)										
6.5.13.29	Gearbox drive ratio	VTS										
6.5.13.30	Wheel diameter/spacing	VTS										
6.5.13.31	Wheel width inside flanges	VTS										
6.5.13.32	Wheel flange height	VTS										
6.5.13.33	Number of wheels per corner	VTS										
6.5.13.34	Maximum vertical load per wheel	VTS										
6.5.13.35	Maximum lateral load per wheel	VTS										
6.5.13.36	Maximum braking load per wheel	VTS										
6.5.13.37	Required gantry rail size	Beth 175#										
6.5.13.38	Gantry rail centres	9 050 mm										
6.5.13.39	Allowable rail centre tolerance	VTS										
6.5.13.40	Gantry spacing	VTS										
6.5.14	End Stops											
6.5.14.1	End Stops mounting length along crane beam	VTS										
6.5.14.2	End stop description/mounting details	VTS										
6.5.15	Power conductor											
6.5.15.1	Construction	Busbar										
6.5.15.2	Type	heated										
6.5.15.3	Length	VTS										
6.5.15.4	Incoming cable size	VTS										
6.5.16	Controls											
6.5.16.1	Control type	Pendant										
6.5.16.2	Rotary limit switch manufacturer	VTS										
6.5.16.3	Control cabinet manufacturer	VTS										
6.5.16.4	Control power	VTS										
6.5.16.5	General Arrangement drawing of the hoist assembly.	VTS										
6.5.16.6	Details of motor	VTS										
6.5.16.7	Details of holding brake operation	VTS										
6.5.16.8	Extreme upper limit switch make and model	VTS										
6.5.16.9	Details of drum dogging device limit switch	VTS										
6.5.16.10	Normal upper limit switch make and model	VTS										
6.5.16.11	Lower limit switch make and model	VTS										
6.5.16.12	Hoist load cell make and model	VTS										
6.5.16.13	Slack rope detection make and model	VTS										
6.5.16.14	Unbalance wire rope load detector make and model	VTS										
6.5.16.15	Proximity switches make and model (for end of travel)	VTS										
6.5.16.16	Overspeed detector make and model	VTS										

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Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
7	TRASH CLEANING SYSTEM												
7.1	TRASH CLEANER												
	Max. Intake Face Water Flow Velocity	1.1 m/s											
	Max. Side Velocity at Rack Bars' Face	0.5 m/s											
7.1.1	Weight of trash cleaner	100 000 kg											
7.1.2	Gantry structure rail centre distance	9 050 mm											
7.1.3	Length of gantry structure at upstream rail	VTS											
7.1.4	Length of gantry structure at downstream rail	VTS											
7.1.5	Height of machinery deck above gantry rails	VTS											
7.1.6	Height of raised trash rake above gantry rails	VTS											
7.1.7	Depth of extended trash rake below gantry rails	49 m											
7.1.8	Depth of extended trash buckets below gantry rails at 10 m upstream of Intake	49 m											
7.1.9	Rated debris load of trash rake at 10 m upstream of Intake	2 500 kg											
7.1.10	Rated debris load of trash buckets at 10 m upstream of Intake	2 500 kg											
7.1.11	Cycle: water surface to trashrack base to water surface	20 min											
7.1.12	Cycle: water surface to debris trap to 10 m upstream and back to water surface	20 min											
7.1.13	Cycle: water surface to trash receptacle to water surface	5 min											
7.1.14	Height of trash cleaner arm above gantry rails when raised	VTS											
7.1.15	Cleaner rake manufacturer/model no./width	MUHR M-7000											
7.1.16	Cleaner rake capacity	600 mm - 5 000 kg											
7.1.17	Cleaner clam bucket manufacturer/model no./width	2 m W x 1.2 m D											
7.1.18	Cleaner clam bucket capacity	5 000 kg											
7.1.19	Cleaner closed bucket manufacturer/model no./width	2.4 m W											
7.1.20	Cleaner closed bucket capacity	5 000 kg											
7.1.21	Machinery deck rotation speed	1 rpm											
7.1.22	Minimum radius of trash cleaner retracted	VTS											
7.1.23	Radius of trash cleaner counterweight	VTS											
7.1.24	Maximum radius of trash cleaner empty	16 m											
7.1.25	Maximum radius of trash cleaner 5000 kg load	10 m											
7.1.26	Maximum radius of trash cleaner 9000 kg load	N/A											
7.1.27	Height of underside hoist beam above gantry rails	7 500 mm											
7.1.28	Height of hoist/lift beam connections in raised position	VTS											
7.1.29	Power cable												
7.1.29.1	Reel diameter	VTS											
7.1.29.2	Cable length	VTS											
7.1.29.3	Cable type	VTS											
7.1.29.4	Cable manufacturer	VTS											
7.1.30	Gantry drives												
7.1.30.1	Gantry travel speed	30 m/min											

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7.1.30.2	Number of gantry drives	4										
7.1.30.3	Motor rating	VTS										
7.1.30.4	Motor rated full load speed	VTS										
7.1.30.5	Rated voltage /# phase/frequency	575V/3P/60Hz										
7.1.30.6	Starting current	VTS										
7.1.30.7	Rated full load current	VTS										
7.1.30.8	Motor manufacturer	VTS										
7.1.30.9	Motor Class	VTS										
7.1.30.10	Locked-rotor current	VTS										
7.1.30.11	Code letter	G										
7.1.30.12	Design letter	Design B										
7.1.30.13	Rated temperature rise	Class B										
7.1.30.14	Insulation system class	Class: F										
7.1.30.15	Rated ambient temperature	40 Degree C										
7.1.30.16	Time rating	Continuous										
7.1.30.17	Secondary volts/# phase/full load current (for wound-rotor induction motor)	VTS										
7.1.30.18	Motor Thermally protected (Yes or no)	VTS										
7.1.30.19	Motor Space Heater- rated voltage/#phase/watts	120V/1P/VTS										
7.1.30.20	Gear Box Space Heater- rated voltage/#phase/watts	120V/1P/VTS										
7.1.30.21	Motor full load efficiency	Premium high efficiency										
7.1.30.22	Power factor	VTS										
7.1.30.23	Service factor	1.15										
7.1.30.24	Enclosure type	TEFC										
7.1.30.25	NEMA Frame type	NEMA MG-1										
7.1.30.26	NEMA Design	VTS										
7.1.30.27	Inverter Duty (yes/no)	VTS										
7.1.30.28	Gearbox manufacturer	VTS										
7.1.30.29	Gearbox drive ratio	VTS										
7.1.30.30	Wheel diameter/spacing	VTS										
7.1.30.31	Wheel width inside flanges	VTS										
7.1.30.32	Wheel flange height	VTS										
7.1.30.33	Number of wheels per corner	2										
7.1.30.34	Maximum vertical load per wheel	VTS										
7.1.30.35	Maximum lateral load per wheel	VTS										
7.1.30.36	Maximum braking load per wheel	VTS										
7.1.30.37	Required gantry rail size	VTS										
7.1.30.38	Gantry rail centres	9050 mm										
7.1.30.39	Allowable rail centre tolerance	VTS										
7.1.30.40	Gantry pivot spacing along upstream rail	VTS										
7.1.30.41	Gantry pivot spacing along downstream rail	VTS										

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7.1.31	End Stops												
7.1.31.1	End Stops mounting length along crane beam	VTS											
7.1.31.2	End stop description/mounting details	VTS											
7.1.32	Power conductor												
7.1.32.1	Construction	VTS											
7.1.32.2	Type	VTS											
7.1.32.3	Length	VTS											
7.1.32.4	Incoming cable size	VTS											
7.1.33	Trash Cleaner hydraulic power unit (HPU)												
7.1.33.1	Nominal pressure	4000 psi											
7.1.33.2	Design pressure	6000 psi											
7.1.33.3	Minimum operating pressure	VTS											
7.1.33.4	HPU manufacturer	Rexroth (Equiv.)											
7.1.33.5	Number of hydraulic pumps	4											
7.1.33.6	Pump discharge	400 L/sec approx.											
7.1.33.7	Pump motor speed rated	rpm											
7.1.33.8	Gantry travel speed	> 20 m/min											
7.1.33.9	Number of gantry drives	4											
7.1.33.10	Motor rating	VTS											
7.1.33.11	Motor rated full load speed	VTS											
7.1.33.12	Rated voltage /# phase/frequency	575V/3P/60Hz											
7.1.33.13	Starting current	VTS											
7.1.33.14	Rated full load current	VTS											
7.1.33.15	Pump Motor manufacturer	VTS											
7.1.33.16	Pump Motor Class	VTS											
7.1.33.17	Locked-rotor current	VTS											
7.1.33.18	Code letter	G											
7.1.33.19	Design letter	Design B											
7.1.33.20	Rated temperature rise	Class B											
7.1.33.21	Insulation system class	Class: F											
7.1.33.22	Rated ambient temperature	40 Degree C											
7.1.33.23	Time rating	Continuous											
7.1.33.24	Secondary volts/# phase/full load current (for wound-rotor induction motor)	VTS											
7.1.33.25	Motor Thermally protected (Yes or no)	VTS											
7.1.33.26	Motor Space Heater- rated voltage/#phase/watts	120V/1P/VTS											
7.1.33.27	Oil Reservoir Heater- rated voltage/#phase/watts	120V/1P/VTS											
7.1.33.28	Motor full load efficiency	Premium high efficiency											
7.1.33.29	Power factor	VTS											
7.1.33.30	Service factor	1.15											
7.1.33.31	Enclosure type	TEFC											

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Tag No.:		Client: NALCOR	Project No.: 505573

Bidder:			1		2		3		4		5	
Item Number	Description	Specified Value or Reference	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
7.1.33.32	NEMA Frame type	NEMA MG-1										
7.1.33.33	NEMA Design	VTS										
7.1.33.34	Inverter Duty (yes/no)	VTS										
7.1.33.35	Sump tank dimensions: L/W/H	VTS										
7.1.33.36	Sump tank reservoir volume	VTS										
7.1.33.37	Total oil volume of high pressure oil system	VTS										
7.1.33.38	Schematic drawing	VTS										
7.1.34	Machine room dimensions: L/W/H	m x m x m										
7.1.35	Trash Cleaner slewing drives											
7.1.35.1	Slewing rotation speed	< 1 rpm										
7.1.35.2	Number of hydraulic motors	VTS										
7.1.35.3	Hydraulic slewing motor rating	VTS										
7.1.35.4	Motor speed rated	VTS										
7.1.35.5	Voltage	575V/3P/60Hz										
7.1.35.6	Starting current	VTS										
7.1.35.7	Full load current	VTS										
7.1.35.8	Motor manufacturer	VTS										
7.1.35.9	Motor Class	VTS										
7.1.35.10	Gearbox manufacturer	VTS										
7.1.35.11	Gearbox drive ratio	VTS										
7.1.36	Controls											
7.1.36.1	PLC (Programmable Logic Controller) (Make)	Schneider										
7.1.36.2	PLC (Programmable Logic Controller) (Model)	Modicon Quantum										
7.1.36.3	HMI (Human Machine Interface) display (Make)	Nematron										
7.1.36.4	HMI (Human Machine Interface) display (Model)	VTS										
7.1.36.5	Control cabinet manufacturer	VTS										
7.1.36.6	Detail of the control and instrumentation redundancy	VTS										
7.1.36.7	Detail of the manual control system	VTS										
7.2	**TRASH CLEANER HOIST**											
7.2.1	Hoist rail height above road deck	VTS										
7.2.2	Hoist rail length	VTS										
7.2.3	Hoist width	VTS										
7.2.4	Hoist rail centre distance	5 500 mm										
7.2.5	Total weight of hoist (inc. trolley, ropes and sheave blocks)	VTS										
7.2.6	Hoist rated capacity	50 000 kg										
7.2.7	Rope drum(s)											

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Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
7.2.7.1	Number of ropes	2											
7.2.7.2	Material	300WT											
7.2.7.3	Diameter to bottom of grooves	VTS											
7.2.7.4	Rope drum length	VTS											
7.2.7.5	Grooved length (Left hand/ right hand)	VTS											
7.2.7.6	Type of bearings	VTS											
7.2.7.7	Bearing capacity	VTS											
7.2.8	Wire ropes												
7.2.8.1	Type of material	IPS Galv. w/SFC											
7.2.8.2	Country of manufacture	CANADA / US / EUR											
7.2.8.3	Factor of safety	5/0.5 to Design Load											
7.2.8.4	Construction	6 x 19											
7.2.8.5	Rope diameter	VTS											
7.2.8.6	Breaking load	VTS											
7.2.8.7	Number of falls												
7.2.9	Hoist drive												
7.2.9.1	Motor rating	55 kW @ 6 m/min											
7.2.9.2	Motor rated full load speed	1 200 rpm											
7.2.9.3	Rated voltage /# phase/frequency	575V/3P/60Hz											
7.2.9.4	Starting current	VTS											
7.2.9.5	Rated full load current	VTS											
7.2.9.6	Motor manufacturer	VTS											
7.2.9.7	Motor Class	VTS											
7.2.9.8	Locked-rotor current	VTS											
7.2.9.9	Code letter	G											
7.2.9.10	Design letter	Design B											
7.2.9.11	Rated temperature rise	Class B											
7.2.9.12	Insulation system class	Class: F											
7.2.9.13	Rated ambient temperature	40 Degree C											
7.2.9.14	Time rating	Continuous											
7.2.9.15	Secondary volts/# phase/full load current (for wound-rotor induction motor)	VTS											
7.2.9.16	Motor Thermally protected (Yes or no)	VTS											
7.2.9.17	Motor Space Heater- rated voltage/#phase/watts	120V/1P/VTS											
7.2.9.18	Gear Box Space Heater- rated voltage/#phase/watts	120V/1P/VTS											
7.2.9.19	Motor full load efficiency	Premium high efficiency											
7.2.9.20	Power factor	VTS											
7.2.9.21	Service factor	1.15											
7.2.9.22	Enclosure type	TEFC											
7.2.9.23	NEMA Frame type	NEMA MG-1											

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Bidder:			1		2		3		4		5	
Item Number	Description	Specified Value or Reference	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
7.2.9.24	NEMA Design	VTS										
7.2.9.25	Inverter Duty (yes/no)	VTS										
7.2.10	Gearbox											
7.2.10.1	Gearbox manufacturer	SEW ERO. (Equiv.)										
7.2.10.2	Gearbox drive ratio	VTS										
7.2.11	Brakes											
7.2.11.1	Holding brake manufacturer	ELEVANJA										
7.2.11.2	Holding brake type	Magnetic Drum										
7.2.11.3	Holding brake rated torque	VTS										
7.2.12	Trolley drive											
7.2.12.1	Trolley travel speed	VTS										
7.2.12.2	Number of trolley drives	VTS										
7.2.12.3	Motor rating	VTS										
7.2.12.4	Motor rated full load speed	VTS										
7.2.12.5	Rated voltage /# phase/frequency	575V/3P/60Hz										
7.2.12.6	Starting current	VTS										
7.2.12.7	Rated full load current	VTS										
7.2.12.8	Motor manufacturer	VTS										
7.2.12.9	Motor Class	VTS										
7.2.12.10	Locked-rotor current	VTS										
7.2.12.11	Code letter	G										
7.2.12.12	Design letter	Design B										
7.2.12.13	Rated temperature rise	Class B										
7.2.12.14	Insulation system class	Class: F										
7.2.12.15	Rated ambient temperature	40 Degree C										
7.2.12.16	Time rating	Continuous										
7.2.12.17	Secondary volts/# phase/full load current (for wound-rotor induction motor)	VTS										
7.2.12.18	Motor Thermally protected (Yes or no)	VTS										
7.2.12.19	Motor Space Heater- rated voltage/#phase/watts	120V/1P/VTS										
7.2.12.20	Gear Box Space Heater- rated voltage/#phase/watts	120V/1P/VTS										
7.2.12.21	Motor full load efficiency	Premium high efficiency										
7.2.12.22	Power factor	VTS										
7.2.12.23	Service factor	1.15										
7.2.12.24	Enclosure type	TEFC										
7.2.12.25	NEMA Frame type	NEMA MG-1										
7.2.12.26	NEMA Design	VTS										
7.2.12.27	Inverter Duty (yes/no)	VTS										
7.2.12.28	Gearbox manufacturer	VTS										
7.2.12.29	Gearbox drive ratio	VTS										
7.2.12.30	Wheel diameter/spacing	VTS										

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Item Number	Description	Specified Value or Reference	Bidder: 1 Proposed	Compliant	2 Proposed	Compliant	3 Proposed	Compliant	4 Proposed	Compliant	5 Proposed	Compliant
7.2.12.31	Wheel width inside flanges	VTS										
7.2.12.32	Wheel flange height	VTS										
7.2.12.33	Number of wheels per corner	VTS										
7.2.12.34	Maximum vertical load per wheel	VTS										
7.2.12.35	Maximum lateral load per wheel	VTS										
7.2.12.36	Maximum braking load per wheel	VTS										
7.2.13	End Stops											
7.2.13.1	End Stops mounting length along crane beam	VTS										
7.2.13.2	End stop description/mounting details	VTS										
7.2.14	Power conductor											
7.2.14.1	Construction	VTS										
7.2.14.2	Type	VTS										
7.2.14.3	Length	VTS										
7.2.14.4	Incoming cable size	VTS										
7.2.15	Controls											
7.2.15.1	Control type	control panel & radio remote										
7.2.15.2	Rotary limit switch manufacturer	VTS										
7.2.15.3	Control cabinet manufacturer	VTS										
7.2.15.4	Control power	VTS										
7.2.15.5	General Arrangement drawing of the hoist assembly	VTS										
7.2.15.6	Details of motor	VTS										
7.2.15.7	Details of holding brake operation	VTS										
7.2.15.8	Extreme upper limit switch make and model	VTS										
7.2.15.9	Details of drum dogging device limit switch	VTS										
7.2.15.10	Normal upper limit switch make and model	VTS										
7.2.15.11	Lower limit switch make and model	VTS										
7.2.15.12	Hoist load cell make and model	VTS										
7.2.15.13	Slack rope detection make and model	VTS										
7.2.15.14	Unbalance wire rope load detector make and model	VTS										
7.2.15.15	Overspeed detector make and model	VTS										
7.2.15.16	Radio remote control make and model	VTS										
8	**SPILLWAY ELECTRICAL BUILDING**											
8.1	**BUILDING STRUCTURAL STEEL**											
8.1.1	Weight of building steel	VTS										
8.1.2	Weight of exterior and interior architectural finishes	VTS										
8.1.3	Manufacturer:	VTS										
8.1.4	Autres	VTS										

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Item Number	Description	Specified Value or Reference	Bidder: 1 Proposed	Compliant	2 Proposed	Compliant	3 Proposed	Compliant	4 Proposed	Compliant	5 Proposed	Compliant
9	SPILLWAY ELECTRICAL BUILDING – ELECTRICAL AUXILIARIES											
9.1	ELECTRICAL DISTRIBUTION SYSTEM FOR DIVERSION PHASE											
9.1.1	600 kW Diesel Generator											
9.1.1.1	Unit Rating & Performance Data:											
9.1.1.1.1	Manufacturer:	VTS										
9.1.1.1.2	Duty to ISO 8528:	VTS										
9.1.1.1.3	Prime Running Power (PRP) in accordance with ISO 8528 (brake)	VTS										
9.1.1.1.4	Limited Time Running Power (LTP) in accordance with ISO 8528 (brake)	VTS										
9.1.1.1.5	Continuous Operating Power (COP) in accordance with ISO 8528 (brake)	600 kW										
9.1.1.1.6	Rated speed	VTS										
9.1.1.1.7	Rated power factor:	0.8										
9.1.1.1.8	Rated voltage:	600V, 3P 4W										
9.1.1.1.9	Rated frequency:	60 Hz										
9.1.1.1.10	Overload Rating to ISO 3046-1, 1 out of 12 hours:	10%										
9.1.1.2	Engine Basic Data											
9.1.1.2.1	Manufacturer	VTS										
9.1.1.2.2	Fuel Stop Power in accordance with ISO 3046-1 (brake)	VTS										
9.1.1.2.3	Speed	VTS										
9.1.1.2.4	Aspiration (natural or turbo charged)	VTS										
9.1.1.2.5	Number of cylinders	VTS										
9.1.1.2.6	Minimum recommended light load	VTS										
9.1.1.2.7	Duration light load can be applied per 24 hr period	VTS										
9.1.1.2.8	Maximum sound level@ 1 m	105 dBA										
9.1.1.2.9	Fuel consumption at PRP rating	VTS										
9.1.1.3	Engine Fuel System											
9.1.1.3.1	Fuel type	Diesel										
9.1.1.3.2	Day tank type	VTS										
9.1.1.3.3	Day tank capacity	To be sized for 8 hrs at 75% Load										
9.1.1.3.4	Day tank run time at PRP rating	8hrs.										
9.1.1.4	Engine Starting System											
9.1.1.4.1	Battery type	Heavy Duty Lead Acid										
9.1.1.4.2	Starting system voltage	24 V DC										
9.1.1.4.3	Number of batteries	VTS										
9.1.1.4.4	Battery capacity	VTS										
9.1.1.5	Generator Data											

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		Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
9.1.1.5.1	Manufacturer	VTS										
9.1.1.5.2	Rated full load current	VTS										
9.1.1.6	Excitation System											
9.1.1.6.1	Manufacturer	VTS										
9.1.1.6.2	Voltage regulator manufacturer	VTS										
9.1.1.6.3	Steady State voltage regulation(±)	+/- 0,5%										
9.1.1.6.4	Descriptive information for Excitation systems and voltage regulator to be provided	Brushless Type with rotating rectifier & with PM exciter. Solid state fail safe AVR										
9.1.1.7	Governor											
9.1.1.7.1	Manufacturer	Woodward or equivalent										
9.1.1.7.2	Frequency regulation(±)	VTS										
9.1.1.7.3	Confirm that governor is capable of operation in Island mode (Isochronous): Yes/No	Yes										
9.1.1.7.4	Confirm that governor is capable of operation in parallel with Utility grid (Droop): Yes/No	VTS										
9.1.1.7.5	Provide descriptive information for Governor	VTS										
9.1.1.8	Control Panel											
9.1.1.8.1	Manufacturer	VTS										
9.1.1.8.2	NEMA Enclosure type	VTS										
9.1.1.8.3	Control power supply by Supplier (yes/no)	VTS										
9.1.1.8.4	Automatic Synchroniser Manufacturer	N/A										
9.1.1.8.5	Suitable for paralleling with Utility grid: Yes/No	VTS										
9.1.1.9	Genset Dimensions											
9.1.1.9.1	Length	<4500										
9.1.1.9.2	Width	<1800										
9.1.1.9.3	Height	<2300										
9.1.1.9.4	Weight	VTS										
9.1.1.10	Diesel Genset Main Fuel Tank And Transfer System											
9.1.1.10.1	Manufacturer	VTS										
9.1.1.10.2	Tank type	VTS										
9.1.1.10.3	Tank capacity	20,000 L										
9.1.1.10.4	Main fuel tank run time with Spillway and similar rated Powerhouse generating units operating at PRP rating	72 hrs										
9.1.1.10.5	Transfer Pump Capacity	VTS										
9.1.1.10.6	Transfer Piping Design	double wall										
9.1.1.10.7	Transfer Pipe Material	VTS										
9.1.1.10.8	Transfer Pipe Class	VTS										
9.1.1.10.9	Motor Rating	VTS										
9.1.1.10.10	Motor speed rated	VTS										

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Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
9.1.1.10.11	Voltage	600 Vac											
9.1.1.10.12	Starting current	VTS											
9.1.1.10.13	Full load current	VTS											
9.1.1.10.14	Motor manufacturer	VTS											
9.1.1.10.15	Motor Insulation Class	Class: F											
9.1.1.10.16	Motor Environmental Protection	VTS											
9.1.1.10.17	NEMA Frame Size	NEMA MG-1											
9.1.1.10.18	NEMA Design	VTS											
9.1.1.10.19	Inverter Duty (yes/no)	VTS											
9.1.2	25 kV Load Break Switch												
9.1.2.1	Manufacturer	VTS											
9.1.2.2	Model	VTS											
9.1.2.3	Rated voltage	25 kV 3P 60Hz											
9.1.2.4	Rated current	600 A											
9.1.2.5	Current Interrupting Rating	600 A											
9.1.2.6	Lightning Impulse Withstand (BIL)	125 kV											
9.1.2.7	Width	<1200											
9.1.2.8	Depth	<1500											
9.1.2.9	Height	<2300											
9.1.3	Dry Type Power Transformer With OLTC												
9.1.3.1	Manufacturer	VTS											
9.1.3.2	Model	VTS											
9.1.3.3	Voltage Ratio	24.94 kV-0.6 kV											
9.1.3.4	Rated current	VTS											
9.1.3.5	Winding Configuration	Dyn11											
9.1.3.6	Rating Capacity	1250 kVA ANN											
9.1.3.7	HV Winding Lightning Impulse Withstand (BIL)	125kV											
9.1.3.8	HV Winding Lightning Impulse Withstand (BIL)	10kV											
9.1.3.9	OLTC Range – Number and size of steps	+2 x 2.5% to -4 x 2.5%											
9.1.3.10	Width	<2800											
9.1.3.11	Depth	<2500											
9.1.3.12	Height	<2600											
9.1.4	600 V Switchgear												
9.1.4.1	Manufacturer	VTS											
9.1.4.2	Model	VTS											
9.1.4.3	Rated voltage	600V, 3P 3W											
9.1.4.4	Rated current	1600 A											
9.1.4.5	Interrupting Current Rating	42 kA											
9.1.4.6	Electronic Overload Relay Manufacturer and Model	VTS											
9.1.4.7	Air Circuit Breaker Manufacturer and Model	VTS											
9.1.4.8	Air Circuit Breaker Frame Rating	1600 A											

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Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
9.1.4.9	Width	<800											
9.1.4.10	Depth	<1700											
9.1.4.11	Height	<2300											
9.1.5	Motor Control Centre												
9.1.5.1	Manufacturer	VTS											
9.1.5.2	Model	VTS											
9.1.5.3	Rated voltage	600V, 3P 3W											
9.1.5.4	Main bus rated current	1600 A											
9.1.5.5	Vertical Bus rated current	VTS											
9.1.5.6	Withstand Current Rating	42 kA											
9.1.5.7	Unit disconnect (switch or MMCB/MCP)	Feeder-MCCB, MCP											
9.1.5.8	Overload Relay Manufacturer and Model	VTS											
9.1.5.9	No. of Vertical Sections	VTS											
9.1.5.10	Width	500 (each vertical section)											
9.1.5.11	Depth	500 (each vertical section)											
9.1.5.12	Height	<2300											
9.1.6	600 V Busway												
9.1.6.1	Manufacturer	VTS											
9.1.6.2	Model	VTS											
9.1.6.3	Enclosure Type	CSA Enclosure 1											
9.1.6.4	Rated voltage	600V 3P 60 Hz											
9.1.6.5	Rated current	1600A											
9.1.6.6	Width	VTS											
9.1.6.7	Height	VTS											
9.1.6.8	Length	VTS											
9.1.7	Manual Transfer Switch For Mobile Genset												
9.1.7.1	Manufacturer	VTS											
9.1.7.2	Model	VTS											
9.1.7.3	Enclosure Type	VTS											
9.1.7.4	Rated voltage	600V 3P 4W 60 Hz											
9.1.7.5	Rated current	800 A											
9.1.7.6	Width	VTS											
9.1.7.7	Height	VTS											
9.1.7.8	Depth	VTS											
9.1.8	Receptacle For Mobile Genset												
9.1.8.1	Manufacturer	VTS											
9.1.8.2	Model	VTS											
9.1.8.3	CSA Configuration	VTS											
9.1.8.4	Enclosure Type	NEMA 4											
9.1.8.5	Rated voltage	600V 3P 4W 60 Hz											

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Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title: LCP-MUSKRAT FALLS	Rev. Date.:
Tag No.:		Client: NALCOR	Project No.: 505573

			Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
9.1.8.6	Rated current	800 A											
9.1.8.7	Width	VTS											
9.1.8.8	Height	VTS											
9.1.8.9	Length	VTS											
9.1.9	Dry Type Distribution Transformers												
9.1.9.1	Manufacturer	VTS											
9.1.9.2	Model	VTS											
9.1.9.3	Enclosure Type	CSA C 22.2 No. 94.2 (Suitable for installed environment)											
9.1.9.4	Rated voltage	VTS											
9.1.9.5	Voltage Ratio	600-600/347 V, 600-208/120V											
9.1.9.6	No. of Phases	3											
9.1.9.7	Rated Capacity (list number and sizes of all distribution transformers)	45kVA 600-600/347V-2 no, 30kVA 600-208/120V-2 nos											
9.1.9.8	Width	VTS											
9.1.9.9	Height	VTS											
9.1.9.10	Depth	VTS											
9.1.10	Panel Boards												
9.1.10.1	Manufacturer	VTS											
9.1.10.2	Model	VTS											
9.1.10.3	Rated voltage	600/347, 208/120V											
9.1.10.4	Rated bus current	225A, 100A											
9.1.10.5	No. of phases/wires	3P 4W											
9.1.10.6	Withstand Current Rating	600V -18kA, 208V-14kA											
9.1.10.7	Circuit breaker interrupting current	600V -18kA, 208V-14kA											
9.1.10.8	Circuit Breaker Manufacturer	VTS											
9.1.10.9	Circuit Breaker Model	VTS											
9.1.10.10	Main Circuit Breaker Rating	225A, 100A											
9.1.10.11	No. of branch circuit pole positions	42P											
9.1.10.12	Width	VTS											
9.1.10.13	Height	VTS											
9.1.10.14	Length	VTS											
9.1.11	Safety Switch For Trash Cleaner												
9.1.11.1	Manufacturer	VTS											
9.1.11.2	Model	VTS											
9.1.11.3	Enclosure Type	CSA Enclosure 1											
9.1.11.4	Rated voltage	600V 3P 4W 60Hz											

SNC·LAVALIN Bid Evaluation Plan Appendix 4 nalcor energy

Technical Bid Evaluation

Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title:	LCP-MUSKRAT FALLS	Rev. Date.:
Tag No.:		Client:	NALCOR	Project No.: 505573

			Bidder:	1		2		3		4		5	
Item Number		Description	Specified Value or Reference	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
9.1.11.5		Rated current	200 A minimum										
9.1.11.6		Width	VTS										
9.1.11.7		Height	VTS										
9.1.11.8		Length	VTS										
9.1.12		125 V DC Batteries And Rack											
9.1.12.1		Manufacturer	VTS										
9.1.12.2		Model	VTS										
9.1.12.3		Type	VTS										
9.1.12.4		Voltage	125 V DC										
9.1.12.5		Current rating	70 Ahr minimum, bidder to complete the DC load list submitted with clarification										
9.1.12.6		No. of cells	60 Cells										
9.1.12.7		Width	VTS										
9.1.12.8		Height	VTS										
9.1.12.9		Length	VTS										
9.1.13		125 V DC Battery Chargers											
9.1.13.1		Manufacturer	VTS										
9.1.13.2		Model	VTS										
9.1.13.3		Rated input voltage	600V 3P 3W 60 Hz										
9.1.13.4		Rated output voltage	125 V DC										
9.1.13.5		Rated output current	20 A minimum (bidder to complete the DC load list submitted with clarification)										
9.1.13.6		Battery recharge time	12hrs										
9.1.13.7		Width	VTS										
9.1.13.8		Height	VTS										
9.1.13.9		Length	VTS										
9.1.14		125 V DC Panelboards 'A' And 'B'											
9.1.14.1		Manufacturer	VTS										
9.1.14.2		Model	VTS										
9.1.14.3		Rated voltage	125 V DC										
9.1.14.4		Rated bus current	VTS										
9.1.14.5		No. of phases/wires	2W										
9.1.14.6		Withstand Current Rating	VTS										
9.1.14.7		Circuit breaker interrupting current	VTS										
9.1.14.8		Circuit Breaker Manufacturer	VTS										
9.1.14.9		Circuit Breaker Model	VTS										

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Technical Bid Evaluation

Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title: LCP-MUSKRAT FALLS	Rev. Date.:
Tag No.:		Client: NALCOR	Project No.: 505573

			Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
9.1.14.10	Main Circuit Breaker Rating	40 A minimum (bidder to complete the DC load list submitted with clarification)											
9.1.14.11	No. of branch circuit pole positions	42P											
9.1.14.12	Width	VTS											
9.1.14.13	Depth	VTS											
9.1.14.14	Height	VTS											
9.1.15	High Voltage Power Cable												
9.1.15.1	Manufacturer	VTS											
9.1.15.2	CSA Type	Teck 90 3C+ G											
9.1.15.3	Rated voltage	25 kV											
9.1.15.4	Conductor Material	Stranded, annealed soft bare Cu											
9.1.15.5	Insulation Material	XLPE 100%											
9.1.15.6	Armour Material	Interlocked Al armour											
9.1.15.7	Jacket Material	-40 Deg C PVC jacket											
9.1.16	Low Voltage Power Cable												
9.1.16.1	Manufacturer	VTS											
9.1.16.2	CSA Type	FR Teck 90 3C+ G											
9.1.16.3	Rated voltage	VTS											
9.1.16.4	Conductor Material	Stranded, annealed soft bare Cu											
9.1.16.5	Insulation Material	XLPE											
9.1.16.6	Armour Material	Interlocked Al armour											
9.1.16.7	Jacket Material	-40 Deg C PVC jacket											
9.1.17	Control Cables												
9.1.17.1	Manufacturer	VTS											
9.1.17.2	CSA Type	FR Teck Shielded multiconductor											
9.1.17.3	Rated voltage	600V											
9.1.17.4	Conductor Material	Stranded, annealed soft bare Cu											
9.1.17.5	Insulation Material	XLPE											
9.1.17.6	Armour Material	Al armour											
9.1.17.7	Jacket Material	-40 Deg C PVC jacket											
9.1.18	Fire Alarm System												
9.1.18.1	Fire Alarm Panel Manufacturer	VTS											

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Technical Bid Evaluation

Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title:	LCP-MUSKRAT FALLS	Rev. Date.:
Tag No.:		Client:	NALCOR	Project No.: 505573

			Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference		Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
9.1.18.2	Model	VTS											
9.1.18.3	Type	VTS											
9.1.18.4	Rated input voltage	120 V 1P 60 Hz											
9.1.18.5	Width	VTS											
9.1.18.6	Depth	VTS											
9.1.18.7	Height	VTS											
10	SPILLWAY ELECTRICAL BUILDING – MECHANICAL AUXILIARIES												
10.1	HVAC SYSTEM												
10.1.1	Vibration and Seismic Control Manufacturer												
10.1.2	Operating Dampers												
10.1.2.1	Manufacturer												
10.1.2.2	Damper Model (Insulated)												
10.1.2.3	Damper Model (Non-insulated)												
10.1.3	Fire Dampers												
10.1.3.1	Manufacturer												
10.1.3.2	Damper Model												
10.1.4	Emergency Generator Room Ventilation Fan												
10.1.4.1	Manufacturer												
10.1.4.2	Model												
10.1.4.3	Airflow	L/s											
10.1.4.4	Static Pressure	Pa											
10.1.4.5	Motor	HP											
10.1.4.6	Octave Band Center Sound Power	dB											
10.1.4.7	Inlet Filter MERV Rating												
10.1.4.8	Inlet Filter Static Pressure Drop	Pa											
10.1.5	Electrical Room Wall Exhausters												
10.1.5.1	Manufacturer												
10.1.5.2	Model												
10.1.5.3	Airflow (each)	L/s											
10.1.5.4	Static Pressure	Pa											
10.1.5.5	Motor (each)	HP											
10.1.5.6	Octave Band Center Sound Power	dB											
10.1.6	Engine Exhaust System												
10.1.6.1	Manufacturer												
10.1.6.2	Model												
10.1.6.3	Temperature Rating	oC											
10.1.6.4	Insulation Rating												
10.1.7	Louvers												
10.1.7.1	Manufacturer												

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Bid Evaluation Plan Appendix 4

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Technical Bid Evaluation

Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment		Revision No.:
Package No.:	CH0032	Project Title: LCP-MUSKRAT FALLS	Rev. Date.:
Tag No.:		Client: NALCOR	Project No.: 505573

Item Number	Description	Specified Value or Reference	Bidder: 1 Proposed	Compliant	2 Proposed	Compliant	3 Proposed	Compliant	4 Proposed	Compliant	5 Proposed	Compliant
10.1.7.2	Model											
10.1.7.3	Material Finish											
10.1.7.4	Performance Requirments											
10.1.7.5	Free Area											
10.1.7.6	Static Pressure Drop	Pa										
10.1.8	Electrical Room Inlet Air Filter											
10.1.8.1	Manufacturer											
10.1.8.2	Model											
10.1.8.3	Thickness	mm										
10.1.8.4	Airflow	L/s										
10.1.8.5	Filter Face Velocity	m/s										
10.1.8.6	Static Pressure Drop (Initial)	Pa										
10.1.8.7	Static Pressure Drop (Final)	Pa										
10.1.8.8	Filter MERV Rating											
10.1.9	Duct Mounted Electric Heater											
10.1.9.1	Manufacturer											
10.1.9.2	Model											
10.1.9.3	Coil Material											
10.1.9.4	Airflow	L/s										
10.1.9.5	Capacity / Output	kW										
10.1.9.6	Control Type											
10.1.9.7	Control Signal											
10.1.10	HVAC Control System											
10.1.10.1	PLC (Programmable Logic Controller) Manufacturer											
10.1.10.2	PLC (Programmable Logic Controller) Model											
10.1.10.3	HMI (Human Machine Interface) display Manufacturer											
10.1.10.4	HMI (Human Machine Interface) display Model											
10.1.10.5	Control Panel Manufacturer											
10.1.10.6	Instrumentation / Sensor Manufacturer											
10.1.10.7	Damper Actuator Manufacturer											
10.1.10.8	Damper Actuator Model											

Specification Compliance Summary

	Bidder:	1	2	3	4	5
Compliant	Y	0	0	0	0	0
Technically Acceptable with Negotiated and Approved Deviations	K	0	0	0	0	0
Non Compliant and Not Acceptable	N	0	0	0	0	0
Not applicable to evaluation	N/A	0	0	0	0	0
Vendor to Specify	VTS	0	0	0	0	0

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Technical Bid Evaluation			Title	Supply / Install Powerhouse and Spillway Hydro-Mechanical Equipment			Revision No.:
			Package No.:	CH0032	Project Title:	LCP-MUSKRAT FALLS	Rev. Date.:
			Tag No.:		Client:	NALCOR	Project No.: 505573

		Bidder:	1		2		3		4		5	
Item Number	Description	Specified Value or Reference	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant	Proposed	Compliant
Approvals	Signature	Date	Remarks		Remarks		Remarks		Remarks		Remarks	
Lead Engineer		Date										
Mechanical Lead		Date										
Electrical Lead		Date										
Engineering Manager		Date										
Package Lead		Date										
C1 Manager		Date										

Recommendation:

APPENDIX 6

QUALITY EVALUATION REPORT

Appendix 6 - Quality Evaluation Report

RFP #: **CH0032**

RFP Name: **S/I Powerhouse Hydro/Mechanical Equipment**

Quality Questionnaire - RFP Appendix A7	Weight	Max Score	Bidder 1		Bidder 2		Bidder 3		Bidder 4		Bidder 5	
			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Quality Management System												
1i) Bidder's quality policy statement and list of current quality objectives.	0.2	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
1ii)Bidder's Master Documents List or the Table of Contents of your policy and procedures manual.	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
1iii) Bidder's current Internal / External Audit Schedules.	1.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
1iv)Bidder's third party ISO 9000 registration, if available.	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
1v) Most Recent Management Review Minutes of Meeting.	1.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
1vi) If ISO 9001:2008 registration is held, a copy of last third party surveillance report.	0.3	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Contract Review and Quality Planning												
2) Briefly describe any processes employed to plan the activities related to the requested **products / services.** If available, provide typical examples of **Quality Plans and / or Inspection and Test Plans.**	0.4	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Capacity and Resources												
3) Describe how this work relates to the total annual productive capacity of Bidder's company and that of Bidder's main suppliers.	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Design Control												

RFP #: **CH0032**		RFP Name: **S/I Powerhouse Hydro/Mechanical Equipment**									
Quality Questionnaire - RFP Appendix A7	**Weight**	**Max Score**	**Bidder 1**		**Bidder 2**		**Bidder 3**		**Bidder 4**		**Bidder 5**	
			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
4) Briefly describe the processes used to control the design of the **products / services** to be supplied. Include references to the following processes: • Design Planning • Design Review • Design Verification • Design Validation • Design Changes	1.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Supplier/Subcontractor Management												
5) Briefly describe the Bidder's **Supplier / Sub-contractor** selection process and any processes employed to monitor continued performance against contract requirements. In Bidder's response include a list of any services associated with the scope of work that would be sub-contracted out and where appropriate, the contract details for that Sub-Contractor.	1.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Quality Control												
6) What techniques does the Bidder employ to verify that the **product / service** have been delivered appropriately and in accordance with the contract requirements? What verification records are generated?	0.4	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Documentation/Records and Material Traceability												
7) Briefly describe the Bidder's records retention system and the normal records retained (or supplied to the client) as part of this **product / service** delivery. Bidder's response should make reference to records such as Material Test Reports, Non-destructive examination records, in process inspections and Factory Acceptance tests.	0.2	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Control of Inspection, Measuring & Test Equipment												

RFP #: **CH0032**		RFP Name: **S/I Powerhouse Hydro/Mechanical Equipment**									
Quality Questionnaire - RFP Appendix A7	**Weight**	**Max Score**	**Bidder 1**		**Bidder 2**		**Bidder 3**		**Bidder 4**		**Bidder 5**	
			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
8) What processes does the Bidder employ to ensure that Inspection is performed and Measuring and Test Equipment is fully calibrated and functioning appropriately?	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Management of Nonconformities (Indentification & Disposition)												
9) When **products / services** do not meet requirements, what processes are employed to ensure timely resolution of the problem? If so, what records of the problem and solution are generated?	0.2	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Continuous Improvement												
10) Does the Bidder employ any continuous improvement processes or other methods to monitor evaluate and improve the quality of **products / services** provided? If so, briefly describe them. Include in your response details on the following: • Processes to monitor and measure effects of continuous improvement changes. • Processes for the evaluation and implementation of innovative and cost reduction ideas.	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Internal/External Audits												
11) Does the Bidder employ any processes to monitor internal / external activities to ensure conformance to procedures? If so, briefly describe them.	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Training & Competency Management												
12) Briefly describe the Bidder's Training Policy and any controls used to ensure personnel are competent to perform their defined functions and responsibilities.	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Servicing												

RFP #: **CH0032**		RFP Name: **S/I Powerhouse Hydro/Mechanical Equipment**									
Quality Questionnaire - RFP Appendix A7	**Weight**	**Max Score**	**Bidder 1**		**Bidder 2**		**Bidder 3**		**Bidder 4**		**Bidder 5**	
			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
13) Briefly describe any **servicing and / or product** support **required / recommended** as part of the delivery of this **equipment / service**.	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Customer Satisfaction												
14) Briefly describe any processes employed to monitor Customer Satisfaction and how these processes will be applied to the proposed scope of work.	0.2	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Contract Quality Requirements												
15) The Bidder shall confirm that it has reviewed and can comply with any Quality Assurance requirements outlined in the contract agreement and that the responses to this questionnaire are true and accurate.	0.1	5.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Total Weighed Score	10.0			0.00		0.00		0.00		0.00		0.00
Total Weighed Score as % of Max Weighted Score**				0.0		0.0		0.0		0.0		0.0
Score-Based Conclusion**												

****Proponent must achieve a minimum Total Weighted Score of 60 percent to be considered acceptable.**

Quality Representative: _____

Date: _____

Comments:

Scoring Guide:

0 - Question not answered or no relevant information provided in response
1 - Response does not meet key criteria
2 - Response only meets a few of the key criteria
3 - Response meets a majority of the key criteria
4 - Response meets all key criteria
5 - Response meets and exceeds key criteria

APPENDIX 7

PROVINCIAL BENEFITS EVALUATION REPORT

Provincial Benefits (including INNU Content)

RFP # CH0032 Title Supply / Install Powerhouse Hydro / Mechanical Equipment

Section	Description / Expectation				Weighting Assigned	Score Given	Weighted Score
2.1	**Contracting and Procurement (7.5%)**						
2.1 a)	Describe Bidder's experience with implementing local benefits strategies and agreements				2.5		
2.1 b)	Describe Bidder's procurement policies and procedures that will ensure reasonable advance notice to NL supply community of all procurement opportunities				2.5		
2.1 c)	Describe Bidder's familiarity with NL contractor/supply capabilities. If Bidder is not currently familiar with these capabilities, describe proposed steps to ensure familiarity				2.5		
2.2	**Employment (5%)**						
2.2 a)	Describe Bidder's familiarity with NL workforce				2.5		
2.2 b)	Describe Bidder's human resource policies that will optimize NL employment benefits				2.5		
2.3	**Gender Equity and Diversity (5%)**						
2.3 a)	Describe Bidder have gender equity and diversity plans? If so, describe Bidder's policies, including harassment and discrimination policies that support gender equity and diversity				2.5		
2.3 b)	Describe Bidder's human resource policies enable the voluntary identification of members of under represented groups				2.5		
2.4	**NL Benefits Reporting (5%)**						
2.4 a)	Indicate Bidder's previous experience at capturing employment and expenditure data as they relate to local benefits monitoring				2.5		
2.4 b)	Indicate who, within Bidders organization, will be responsible for benefits monitoring and reporting				2.5		
	Scoring Grid	**Scoring Guidance for Section 2 (above)**					
	5	Response meets and exceeds all key criteria					
	4	Response meets all key criteria					
	3	Response meets a majority of all key criteria					
	2	Response meets only a few of the key criteria					
	1	Response meets none of the key criteria					
3.0	**Innu Content (17.5%)**						
3.0 a)	Is Bidder a registered Innu Company?		Yes = 5	No = 0	5		
3.0 b)	Use of registered Innu subcontractors?		Yes = 5	No = 0	5		
3.0 c)	A named person for Innu /IBA monitoring is provided.		Yes = 5	No = 0	2.5		
3.0 d)	Bidder has members of Innu Nation as part of Bid.		Yes = 5	No = 0	2.5		
3.0 e)	Bidder has experience working with aboriginal IBAs		Yes = 5	No = 0	2.5		
4.0 a)	**NL BENEFITS CONTENT - PERSON HOUR ESTIMATE by Residency (22.5%)**				22.5		
	Score = 5	If NL percentage of total hours is > 80%					
	Score = 4	If NL percentage of total hours is 60 to 80 %					
	Score = 3	If NL percentage of total hours is 40 to 60 %					
	Score = 2	If NL percentage of total hours is 20 to 40 %					
	Score = 1	If NL percentage of total hours is < 20%					
4.0 b)	**NL BENEFITS CONTENT - PERSON HOUR ESTIMATE by Location of Work (12.5%)**				12.5		
	Score = 5	If NL percentage of total hours is > 80%					
	Score = 4	If NL percentage of total hours is 60 to 80 %					
	Score = 3	If NL percentage of total hours is 40 to 60 %					
	Score = 2	If NL percentage of total hours is 20 to 40 %					
	Score = 1	If NL percentage of total hours is < 20%					
5.0	**NL BENEFITS CONTENT - EXPENDITURE ESTIMATE (25%)**				25		
	Score = 5	If NL percentage of total expenditures is > 80%					
	Score = 4	If NL percentage of total expenditures is 60 to 80 %					
	Score = 3	If NL percentage of total expenditures is 40 to 60 %					
	Score = 2	If NL percentage of total expenditures is 20 to 40 %					
	Score = 1	If NL percentage of total expenditures is < 20%					

Scored By:	_____	Total	100	0
Date:	_____	Sectional Weighting	5%	0
		Ranking		1

APPENDIX 8

RISK MANAGEMENT EVALUATION REPORT

Nalcor Energy
Lower Churchill Project

BID EVALUATION
DISCIPLINE SCORE SHEETS

RFP - Risk Management Questionnaire Evaluation

Package Number:	Package Name:
CH0032	Supply and Install Powerhouse Hydro-Mechanical Equipment

Scoring Guide:

0 - Question not answered or no relevant information provided in response
1 - Response does not meet key Criteria
2 - Response only meets a few of the key criteria
3 - Response meets a majority of the key criteria
4 - Response meets all key criteria
5 - Response meets and exceeds key criteria

		Question Weight (%)	Bidder 1			Bidder 2		
			Answer	Score	Comments	Answer	Score	Comments
Item	Risk Management							
1	Risk Management system in place.	5		0			0	
2	Risk Management Plan sample	5		0			0	
3	Top 5 Risks - Identification	5		0			0	
4	Magnitude of Scope	10		0			0	
5	Loss Control Plan	3		0			0	
6	Involvement of Subs in Risk Management	3		0			0	
7	Historical Records-Successful delivery	2		0			0	
8	Report and root cause of unsuccessful deliveries	2		0			0	
9	Discussion on Schedule Critical Path	10		0			0	
10	Production Workload forecast	10		0			0	
11	Mobilization strategy	5		0			0	
12	Mitigation of lower productivity due to adverse weather	5		0			0	
13	Strategy and plan for successful installation of the Work in extreme weather.	5		0			0	
14	Strike or lock-out history	5		0			0	
15	Summary of Health & Safety Mgt Plan	2		0			0	
16	Summary of QA/QC Mgt Plan	2		0			0	
17	Critical Skills, number of people and turn-over	5		0			0	
18	Attraction and retention of skilled labour	5		0			0	
19	Logistics strategy and plan	10		0			0	
20	Responsibility statement	1		0			0	
	Score - transfer to Technical Summary	100	0.00			0.00		
		Total Percentage	**0.00%**			**0.00%**		

Scored By:	Jean-Daniel Tremblay - Interface & Risk Coordinator
Date:	

APPENDIX 9

HEALTH & SAFETY EVALUATION REPORT

Health and Safety Scoring Guide:		
0 - Question not answered or no relevant information provided in response 1 - Response does not meet key Criteria 2 - Response only meets a few of the key criteria 3 - Response meets a majority of the key criteria 4 - Response meets all key criteria 5 - Response meets and exceeds key criteria		**Package Name:** Suply & Installation: Powerhouse Hydro/Mechanical Equipment **Package No.:** CH0032 **Project :** Lower Churchill Project

	Question Weight (%)							Bidder		Bidder		Bidder	
		Answer	Score	Answer	Score	Answer	Score	Answer	Score	Answer	Score	Answer	Score
Health and Safety													
2.0 HEALTH AND SAFETY MANAGEMENT PERFORMANCE - Please provide the following safety statistics, referencing the attached incident definitions and frequency calculation.	10		0		0		0		0		0		0
3.0 WORKER'S COMPENSATION - Indicate the jurisdiction where you are registered. List your overall Worker's Compensation Industry rating for the current year and past three (3) years. Attach a WCB clearance letter and experience rating statements for the past three years.	3		0		0		0		0		0		0
4.1 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Do you have a certificate of recognition or is your health and safety management system certified by an outside agency? (OHSAS 18001, CSA Z-1000 etc.) If yes, provide a copy of the certificate.	2		0		0		0		0		0		0
4.2 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Does your health and safety program have a policy statement that clearly outlines the Company's commitment to health and safety?	3		0		0		0		0		0		0
4.3 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Has your company received an occupational health and safety stop work order, charges or equivalent from any regulator in the last three (3) years? If yes, provide details.	3		0		0		0		0		0		0
4.4 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Please list the highest ranking safety professional in your organization: (attach résumé). Do you plan to have a safety representative(s) for this Work full time or part time (Y or N)? If "Yes", provide a résumé(s).	3		0		0		0		0		0		0
4.5 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Does your health and safety management system address the following key elements? Management leadership and commitment; hazard/risk identification, evaluation and control; risk assessments on all critical and non-routine jobs/job functions; a permit to work system; ongoing inspection. If yes to any of these, reference appropriate Health and Safety manual section(s).	8		0		0		0		0		0		0
4.6 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Does your health and safety management system include work practices and procedures, such as: Lockout and tagout; traffic control; excavation and trenching; confined space entry; hoisting and rigging; working near power lines; handling and transporting hazardous substances; unloading large/long materials (such as piles); vehicle recovery. If yes to any of these, reference appropriate Health and Safety manual section(s).	8		0		0		0		0		0		0

	Question Weight (%)							Bidder		Bidder		Bidder	
		Answer	Score	Answer	Score	Answer	Score	Answer	Score	Answer	Score	Answer	Score
Health and Safety													
4.7 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Do you have written programs for the following? Duty to refuse work; fall protection; noise management; workplace violence; working alone; personal protective equipment (PPE); WHMIS (Workplace Hazardous Materials Information System); respiratory protection. If yes to any of these, reference appropriate Health and Safety manual section(s). In regards to respiratory protection, have your employees been: trained? fit tested? medically approved?.	8		0		0		0		0		0		0
4.8 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Do you conduct medical exams for the following? Pre-employment; replacement job capacity; pulmonary; respiratory. If yes to any of these, reference appropriate Health and Safety manual section(s).	2		0		0		0		0		0		0
4.9 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Do you have a drug and alcohol program? If "Yes", does it include the following? Pre-employment testing; testing for cause; post incident testing; formalized arrangements with a collection and testing agency (if "Yes", provide testing agency information); does your drug and alcohol policy follow the guidelines as laid out in The Canadian Model for Providing A Safe Workplace – Alcohol and Drug Guidelines and Work Rule Version 2 – Effective October 1, 2010? If yes to any of these, reference appropriate Health and Safety manual section(s).	3		0		0		0		0		0		0
4.10 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Equipment (Tools, Supplies, Machinery and Sanitary Facilities): Do you have a written list of equipment requiring pre-use inspections? Do you have a documented list of equipment requiring scheduled servicing in accordance with manufacturer's recommendations, legislated requirements, and industry standards? Is frequency of equipment inspections and maintenance identified? Are corrections of deficiencies documented? Do you have follow-up mechanism for corrective actions? If yes to any of these, reference appropriate Health and Safety manual section(s).	4		0		0		0		0		0		0
4.11 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Orientation Program: Do you have a health and safety orientation program? Does the program include new, transferred and temporary workers? Does the program provide instruction on the following: employer health and safety responsibilities; employee health and safety responsibilities; obligation to refuse imminent danger work; progressive discipline policies and procedures; safe work practices and/or procedures; emergency response procedures; first-aid procedures; incident/near miss reporting; does you orientation program include a quiz? If yes to any of these, reference appropriate Health and Safety manual section(s).	5		0		0		0		0		0		0
4.12 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Incident Investigation: Do you have a written procedure for incident reporting and investigation?; Do you utilize a root cause determination process such as "Tap-Root"? If yes to any of these, reference appropriate Health and Safety manual section(s).	5		0		0		0		0		0		0
4.13 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Do you have an emergency response plan related to activities and specific locations? If yes reference appropriate Health and Safety manual section(s).	4		0		0		0		0		0		0

	Question Weight (%)							Bidder		Bidder		Bidder	
		Answer	Score	Answer	Score	Answer	Score	Answer	Score	Answer	Score	Answer	Score
Health and Safety													
4.14 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Do you have a policy pertaining to prohibited items on (e.g. knives, firearms)? Are all employees made aware of the prohibited items policy and is it enforced? If yes to any of these, reference appropriate Health and Safety manual section(s).	1		0		0		0		0		0		0
4.15 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Do you make reference to following legislative requirements where work is being performed?; violence policies and procedures; harassment policies and procedures. If yes to any of these, reference appropriate Health and Safety manual section(s).	1		0		0		0		0		0		0
4.16 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Do you have a policy or specific rules with respect to the use of personnel protective equipment (PPE)? Do you have a formal process in place for determining PPE requirements? If yes to any of these, reference appropriate Health and Safety manual section(s).	3		0		0		0		0		0		0
4.17 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Contractor Management: Do you pre-qualify subcontractors?; Do you include subcontractors in: orientations, health and safety meetings, inspections, audits. If yes to any of these, reference appropriate Health and Safety manual section(s).	5		0		0		0		0		0		0
4.18 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Communications: Do you inform employees and subcontractors on Health and Safety alerts, programs, practices, procedures, rules, revisions and related information ? Do you have a joint Health and Safety committee? Do you hold scheduled safety meetings, such as weekly general safety meetings for all crew and weekly departmental meetings for each department at all worksites? Are Health and Safety meeting minutes and attendance recorded? If yes to any of these, reference appropriate Health and Safety manual section(s).	5		0		0		0		0		0		0
4.19 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Does your Health and Safety program outline the requirements for supervisors and employees to conduct regular Health and Safety inspections of equipment and work conditions at all worksite(s)? If yes reference appropriate Health and Safety manual section(s).	3		0		0		0		0		0		0
4.20 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Does your Health and Safety program require the prompt reporting of hazardous conditions at all worksite(s)? If yes reference appropriate Health and Safety manual section(s).	5		0		0		0		0		0		0
4.21 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Health and Safety Training: Have your employees received the required Health and Safety training and retraining? Do you have a specific Health and Safety training program for supervisors? If yes to any of these, reference appropriate Health and Safety manual section(s).	3		0		0		0		0		0		0
4.22 HEALTH AND SAFETY SUPPLEMENTARY QUESTIONS - Training Records: Do you have Health and Safety training records for your employees? How do you verify competency of the training (job monitoring? written test? competency check? oral test? other?). Are all training records available upon request? If yes to any of these, reference appropriate Health and Safety manual section(s).	3		0		0		0		0		0		0
Score	100	0.00		0.00		0.00		0.00		0.00		0.00	
	Percentage	**0.00%**		**0.00%**		**0.00%**		**0.00%**		**0.00%**		**0.00%**	
PASS/FAIL		**PASS**		**PASS**		**PASS**							

Minimum Pass Score is 70%

	Question Weight (%)							Bidder		Bidder		Bidder	
		Answer	Score	Answer	Score	Answer	Score	Answer	Score	Answer	Score	Answer	Score
Health and Safety													

Evaluated By	
Reviewed By	
Review Date	

APPENDIX 10

ENVIRONMENTAL EVALUATION REPORT

RFP - Environmental Evaluation

RFP #: **CH0032** | **RFP Name: S/I Powerhouse Hydro/Mechanical Equipment**

	Weight	Max Score	BIDDER1		BIDDER2		BIDDER 3		*Scoring Instructions*
Bid Evaluation Plan Appendix 10			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	*(Pass Mark 70%)*
1. MANAGEMENT INVOLEMENT, LEADERSHIP AND ADMINISTRATION									
1.1 Environmental Management System (ISO or Not)?	3.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*If ISO Score 5, If not ISO Score 3, If No System score 0*
1.1a Adequacy of TOC (if provided)	3.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
1.1b Adequacy of Environmental Policy (if provided)	3.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
1.3 Are environmental targets developed and reviewed on a regular basis?	3.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
1.3a Adequacy of Environmental targets	3.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
1.4 Has a formal system, including the use of audits and inspections, been developed to define responsibilities for verifying that environmental performance objectives are met?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
1.4a Adequacy of audit and inspection information	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*

RFP - Environmental Evaluation

RFP #: CH0032 **RFP Name: S/I Powerhouse Hydro/Mechanical Equipment**

	Weight	Max Score	BIDDER1		BIDDER2		BIDDER 3		*Scoring Instructions*
Bid Evaluation Plan Appendix 10			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	*(Pass Mark 70%)*
2. ENVIRONMENTAL HAZARD IDENTIFICATION AND RISK MANAGEMENT									
2.1 Does the Bidder conduct formal risk assessments when planning and implementing operations and activities?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
2.2 If "Yes", does that risk assessment include environmental risks?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
2.2a adequacy of risk management system	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
2.3 Has a formal hazard observation program been implemented at the Bidder's worksites?	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
2.3a Adequacy of hazard observation program	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*

RFP - Environmental Evaluation

RFP #: **CH0032** **RFP Name: S/I Powerhouse Hydro/Mechanical Equipment**

	Weight	Max Score	BIDDER1		BIDDER2		BIDDER 3		*Scoring Instructions*
Bid Evaluation Plan Appendix 10			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	*(Pass Mark 70%)*
3. ORGANIZATIONAL RULES AND WORK PROCEDURES									
3.1 Does the Bidder have documented environmental protection plans for all jobs/work activities?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
3.1a adequacy of EPP	2.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
3.2 Does the Bidder have environmental contingency plans?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
3.2a adequacy of contingency plans/Does the plan outline responsibilities, available resources and actions to be taken in the event of an environmental incident?	2.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*

RFP - Environmental Evaluation

RFP #: **CH0032** **RFP Name: S/I Powerhouse Hydro/Mechanical Equipment**

	Weight	Max Score	BIDDER1		BIDDER2		BIDDER 3		*Scoring Instructions*
Bid Evaluation Plan Appendix 10			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	*(Pass Mark 70%)*
4. EMPLOYEE KNOWLEDGE, TRAINING AND AWARENESS									
4.1 Does the Bidder have an environmental awareness program?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
4.1a Adequacy of Program?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
4.2 Does the Bidder provide environmental awareness training to supervisory staff?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
4.3 What is frequency of environmental awareness training?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Score 1-5. If monthly score 5; If bimonthly score 4; If quarterly score 3; if biannually score 2; If annually score 1*
4.3a Adequacy of content environmental awareness training	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*

RFP - Environmental Evaluation

RFP #: **CH0032** | **RFP Name: S/I Powerhouse Hydro/Mechanical Equipment**

	Weight	Max Score	BIDDER1		BIDDER2		BIDDER 3		*Scoring Instructions*
Bid Evaluation Plan Appendix 10			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	*(Pass Mark 70%)*
5. PERSONAL COMMUNICATIONS AND ENVIRONMENTAL MEETINGS									
5.1 Are personal communications conducted to impart environmental awareness with other workers and thereby reducing the likelihood of non compliances or environmental incidents?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
5.2 Is there a system for sharing best practices and procedures, incidents and other information across the Bidder's organization?	1.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
5.3 Is there an environment committee in place?	1.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
5.4 Are regular (minimum monthly) environmental meetings held at all facilities to maintain effective communication of environmental information throughout the organization and with Bidder's contractors?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
5.4a Adequacy of content and frequency of environmental meetings?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
5.5 Are minutes and records of attendance of these meetings maintained?	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
5.5a Adequacy of meeting minutes	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
5.6 Does the Bidder respond in writing to environmental concerns raised at environmental meetings?	1.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*

RFP - Environmental Evaluation

RFP #: CH0032 **RFP Name: S/I Powerhouse Hydro/Mechanical Equipment**

	Weight	Max Score	BIDDER1		BIDDER2		BIDDER 3		Scoring Instructions
Bid Evaluation Plan Appendix 10			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	*(Pass Mark 70%)*
6. ENVIRONMENTAL MONITORING AND REPORTING									
6.1 Has the Bidder developed specific procedures for environmental monitoring and reporting on incidents that occur at its worksites?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
6.1a Adequacy of monitoring and incident procedure	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
6.2 Does the Bidder use an EMS system to establish standards, reporting and follow up and corrective action?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
6.2a Adequacy of this process	1.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
6.3 Does the Bidder have dedicated environmental personnel?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
6.3a Adequacy of personnel and responsibilities	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
6.4 Are supervisors formally trained in accident/investigations?	1.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
6.4a Adequacy of training program and frequency	0.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*

RFP - Environmental Evaluation

RFP #: **CH0032** | **RFP Name: S/I Powerhouse Hydro/Mechanical Equipment**

	Weight	Max Score	BIDDER1		BIDDER2		BIDDER 3		*Scoring Instructions*
Bid Evaluation Plan Appendix 10			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	*(Pass Mark 70%)*
7. ENVIRONMENTAL INCIDENT ANALYSIS									
7.1 Does the Bidder have in place a formal system for the collection, analysis, trending and evaluation of environmental incident data and statistical analysis?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
7.2 Does the Bidder develop monthly environmental incident analysis reports, which are reviewed during management review meetings?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
7.3 Does senior management review and comment on serious and significant environmental incidents?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
7.4 Are all incident reports followed through from recommendations to completion and closure?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
8. LEADERSHIP TRAINING									
8.1 Does Bidder's management receive formal environmental management training which provides a thorough understanding of the philosophies and principles behind environmental management?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
8.1a Adequacy of environmental management training	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
8.2 Does the Bidder's management receive an orientation to the Bidder's Environmental Management System that includes an introduction to individual accountabilities and responsibilities?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
8.2a Adequacy of orientation	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*

RFP - Environmental Evaluation

RFP #: **CH0032** **RFP Name: S/I Powerhouse Hydro/Mechanical Equipment**

	Weight	Max Score	BIDDER1		BIDDER2		BIDDER 3		*Scoring Instructions*
Bid Evaluation Plan Appendix 10			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	*(Pass Mark 70%)*
9. ENVIRONMENTAL AUDITS, INSPECTIONS AND PREVENTATIVE MAINTENANCE									
9.1 Is there a documented process for performing environmental audits?	2.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
9.2 Has a formal process been developed to ensure routine environmental monitoring?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
9.3 Does the Bidder have planned preventative measures in place to prevent environmental incidents?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
10. CRITICAL OPERATION AND TASK ANALYSIS									
10.1 Has a systematic approach been developed to identify and inventory all tasks based on mandatory rules, regulations and applicable codes, guidelines and standards?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
10.2 Is there a formal process to assess the environmental requirements associated with the tasks and to mitigate the risk to ensure compliance with the requirements?	2.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
11. SYSTEM REVIEW AND EVALUATION									
11.1 Do the Bidder's senior management conduct regular reviews of the Environmental Management System, at least annually or at more frequent intervals, as the organization may deem necessary?	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*
11.1a Adequacy of reviews	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Rank adequacy 1 - 5; If not provided Score 0*
11.2 Do these reviews include environmental management policies and procedures and other inputs such as the results and recommendations from environmental audits, monitoring and surveys and analysis of incident investigations?	1.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*Yes = 5; No = 0*

RFP - Environmental Evaluation

RFP #: **CH0032**

RFP Name: S/I Powerhouse Hydro/Mechanical Equipment

	Weight	Max Score	BIDDER1		BIDDER2		BIDDER 3		*Scoring Instructions*
Bid Evaluation Plan Appendix 10			Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	*(Pass Mark 70%)*
12. STATISTICS									
12.1 Number and type of directives from clients or regulators	1.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*For 3 yr period: >= 5 score 0; 4 score 1; 3 score 2; 2 score 3; 1 score 4; 0 score 5*
12.2 Oil spill incidents;	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*For 3 yr period: >= 5 score 0; 4 score 1; 3 score 2; 2 score 3; 1 score 4; 0 score 5*
12.3 Waste management incidents;	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*For 3 yr period: >= 5 score 0; 4 score 1; 3 score 2; 2 score 3; 1 score 4; 0 score 5*
12.4 Hazardous materials incidents;	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*For 3 yr period: >= 5 score 0; 4 score 1; 3 score 2; 2 score 3; 1 score 4; 0 score 5*
12.5 Water degradation incidents;	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*For 3 yr period: >= 5 score 0; 4 score 1; 3 score 2; 2 score 3; 1 score 4; 0 score 5*
12.6 Air degradation incidents; and	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*For 3 yr period: >= 5 score 0; 4 score 1; 3 score 2; 2 score 3; 1 score 4; 0 score 5*
12.7 Soil degradation incidents.	1.5	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*For 3 yr period: >= 5 score 0; 4 score 1; 3 score 2; 2 score 3; 1 score 4; 0 score 5*
12.8 Total Environmental Incidents	1.0	5.0	0.0	0.00	0.0	0.00	0.0	0.00	*For 3 yr period: >= 5 score 0; 4 score 1; 3 score 2; 2 score 3; 1 score 4; 0 score 5*
Total Weighed Scores	100.0			0.00		0.00		0.00	

Comments:

Environmental Manager:

Date:

APPENDIX11

COMMERCIAL PROPOSAL CLARIFICATION FORM

nalcor energy LOWER CHURCHILL PROJECT

Appendix 11 - COMMERCIAL PROPOSAL CLARIFICATION FORM

SNC·LAVALIN

Date:	DD-MM-2013	Package No. Bidder's Proposal. No.	505573-CH0032 [Enter]	Package Title:	Supply/Install Powerhouse Hydro/Mechanical Equipment
Bidder:					

	Date DD-MM-2013	SLI Comments/Questions	Bidder Answer / Response	SLI comments on Bidders response
1				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

nalcor energy LOWER CHURCHILL PROJECT

Appendix 11 - COMMERCIAL PROPOSAL CLARIFICATION FORM

SNC·LAVALIN

Date:	DD-MM-2013	Package No. Bidder's Proposal. No.	505573-CH0032 [Enter]	Package Title:	Supply/Install Powerhouse Hydro/Mechanical Equipment
Bidder:					

	Date DD-MM-2013	SLI Comments/Questions	Bidder Answer / Response	SLI comments on Bidders response
19				
20				
21				
22				
23				
24				
25				
		B. COST REDUCTION OPPORTUNITIES		
1				
2				
3				
4				
5				

USER NOTES:

A. COMMERCIAL

- CA/Buyer is to insert commercial comments/questions identified during the commercial review of the Proposal, complete with reference to the relevant RFP clause / annexes/ exhibit etc.
- CA/Buyer to issue to the relevant Bidder by e-mail requesting response by a specified date.
- On receipt of Bidder's response, CA will enter SLI comments to the response in the designated column

B. COST REDUCTION OPPORTUINITIES

- Use as needed

NOTE:

- This form will be completed on an ongoing basis throughout the evaluation period until all technical and or commercial questions have been answered. The completed form will also form part of the Agenda for all Bidder Clarification Meetings held during the evaluation period

APPENDIX 12

TECHNICAL PROPOSAL CLARIFICATION FORM

nalcor energy
LOWER CHURCHILL PROJECT

Appendix 12 - TECHNICAL PROPOSAL CLARIFICATION FORM

SNC·LAVALIN

Date:	DD-MM-2013	Package No. Bidder's Proposal. No.	505573-CH0032 [Enter]	Package Title:	Supply/Install Powerhouse Hydro/Mechanical Equipment
Bidder:					

	Date DD-MM-2013	SLI Comments/Questions	Bidder Answer / Response	SLI comments on Bidders response
1				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				

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Appendix 12 - TECHNICAL PROPOSAL CLARIFICATION FORM

SNC·LAVALIN

Date:	DD-MM-2013	Package No. Bidder's Proposal. No.	505573-CH0032 [Enter]	Package Title:	Supply/Install Powerhouse Hydro/Mechanical Equipment
Bidder:					

Date DD-MM-2013		SLI Comments/Questions	Bidder Answer / Response	SLI comments on Bidders response
20				
21				
22				
23				
24				
25				

USER NOTES:

A. TECHNICAL

- SLI Package Engineer is to insert technical comments/questions identified during the technical review of the Proposal, complete with reference to the relevant specification / drawings.
- Once completed, Package Engineer is to forward to the designated CA/Buyer for incorporation of any Commercial questions prior to issue to the Bidder.
- On receipt of Bidder's response from the CA/Buyer, Package Engineer to enter SLI comments to the response in designated column

B. COST REDUCTION OPPORTUINITIES

- Use as needed

NOTE:

- This form will be completed on an ongoing basis throughout the evaluation period until all technical and or commercial questions have been answered. The completed form will also form part of the Agenda for all Bidder Clarification Meetings held during the evaluation period

APPENDIX 13

COMMERCIAL EVALUATION MATRIX

Appendix 13 Commercial Evaluation Matrix

Package # 505573-CH0032 Package Description: S/I Powerhouse Hydro/Mechanical Equipment Scope - A & B

Contract Administrator: R Anderson
Lead Technical: Bruce Drover
Lead Commercial: E. Over
Area Managers: L. Turcotte

NOTE: Each subsection is rated on a scale 1 - 10 (rating) then multiplied by the weighted value (weighting) for the item (within the evaluation subsection) to get the item value.

Section 1 Commercial

Lead : Ed Over

				Bidder 1		Bidder 2		Bidder 3		Bidder 4		Bidder 5	
	Weighted value:	60%											
	Criteria:	item wgtg		Rating 0-10	item value	Rating 0-10	item value	Rating 0-10	item value	Rating 0-10	item value	Rating 0-10	item value
1	**Total Evaluated Cost comprising :**	65%	x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
	Proposal Prices		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
	Terms of Payment		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
	Net Present Value		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
	Delivery Schedule		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
	Currency Exchange Costs		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
	Estimated Inspection & Expediting Costs		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
			x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
2	**Terms & Conditions comprising:**	35%	x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
	Limitation of Liability		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
	Liquidated Damages Cap		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
	Liquidated Damages amounts		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
	Title Transfer		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
	Insurance		x		0.00		0.00		0.00		0.00		0.00
	Security		x		0.00		0.00		0.00		0.00		0.00
	Ownership of I.P		x		0.00		0.00		0.00		0.00		0.00
	Default		x		0.00		0.00		0.00		0.00		0.00
	Overall compliance		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00
		100%		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
					X		X		X		X		X
	Weighted value				60%		60%		60%		60%		60%
	Points value				**0.00**		**0.00**		**0.00**		**0.00**		**0.00**

Comments:

SUMMARY OF PROPOSAL RESULTS

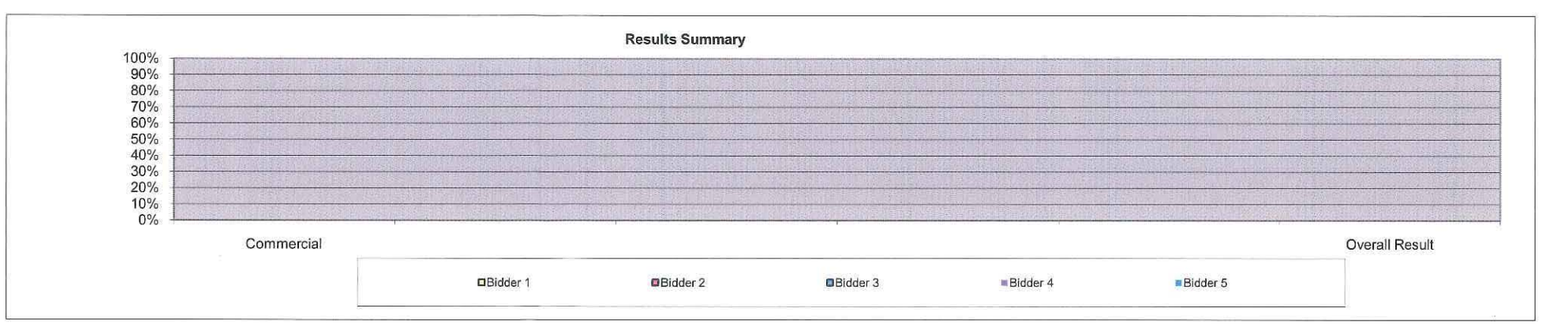
Overall Comments:

	Bidder 1	Bidder 2	Bidder 3	Bidder 4	Bidder 5
Points value of Section 1 Commercial	0% 0.00	0% 0.00	0% 0.00	0% 0.00	0% 0.00
OVERALL RATING OF PROPOSALS	0% **0.0**	0% **0.0**	0% **0.0**	0% **0.0**	0% **0.0**

Note 1: The lowest total evaluated price will receive full marks (10). For each 2% difference between the lowest evaluated price and the other evaluated prices the Bidder will lose one point.
Example if second lowest evaluated price is 4% higher than the lowest evaluated price that Bidder will receive an 8 out of 10

Note 2: The assessment of the terms and conditions will be more subjective. The Bidder offering the best package of terms and conditions will score 10. These terms and conditions will be the benchmark used to compare those submitted in the other Proposals. If all three Bidders are offering similar conditions they will all receive a score of 10. Proposals offering less attractive terms will be down scored accordingly depending on the extent of their non compliances.

		Bidder 1	Bidder 2	Bidder 3	Bidder 4	Bidder 5
1	Commercial	0%	0%	0%	0%	0%
2						
3						
4						
5						
6	**Overall Result**	**0%**	**0%**	**0%**	**0%**	**0%**



Appendix 13 Commercial Evaluation Matrix

Package # 505573-CH0032 Package Description: S/I Powerhouse Hydro/Mechanical Equipment
Scope A - Power Facilities

Contract Administrator: R Anderson
Lead Technical : Bruce Drover
Lead Commercial: E. Over
Area Managers: L. Turcotte & Scott O'Brien

NOTE: Each subsection is rated on a scale 1 - 10 (rating) then multiplied by the weighted value (weighting) for the item (within the evaluation subsection) to get the item value.

Section 1 Commercial

Lead : Ed Over

				Bidder 1		Bidder 2		Bidder 3		Bidder 4		Bidder 5		
	Weighted value:	60%												
	Criteria:	item wgtg		Rating 0-10	item value	Rating 0-10	item value	Rating 0-10	item value	Rating 0-10	item value	Rating 0-10	item value	**Comments:**
1	**Total Evaluated Cost comprising :**	65%	x		0.00		0.00		0.00		0.00		0.00	
	Proposal Prices		x		0.00		0.00		0.00		0.00		0.00	
	Terms of Payment		x		0.00		0.00		0.00		0.00		0.00	
	Net Present Value		x		0.00		0.00		0.00		0.00		0.00	
	Delivery Schedule		x		0.00		0.00		0.00		0.00		0.00	
	Currency Exchange Costs		x		0.00		0.00		0.00		0.00		0.00	
	Estimated Inspection & Expediting Costs		x		0.00		0.00		0.00		0.00		0.00	
			x		0.00		0.00		0.00		0.00		0.00	
2	**Terms & Conditions comprising:**	35%	x		0.00		0.00		0.00		0.00		0.00	
	Limitation of Liability		x		0.00		0.00		0.00		0.00		0.00	
	Liquidated Damages Cap		x		0.00		0.00		0.00		0.00		0.00	
	Liquidated Damages amounts		x		0.00		0.00		0.00		0.00		0.00	
	Title Transfer		x		0.00		0.00		0.00		0.00		0.00	
	Insurance		x		0.00		0.00		0.00				0.00	
	Security		x		0.00		0.00		0.00				0.00	
	Ownership of I.P		x		0.00		0.00		0.00				0.00	
	Default		x		0.00		0.00		0.00				0.00	
	Overall compliance		x		0.00		0.00		0.00		0.00		0.00	
		100%		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					X		X		X		X		X	
	Weighted value				60%		60%		60%		60%		60%	
	Points value				**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	

SUMMARY OF PROPOSAL RESULTS

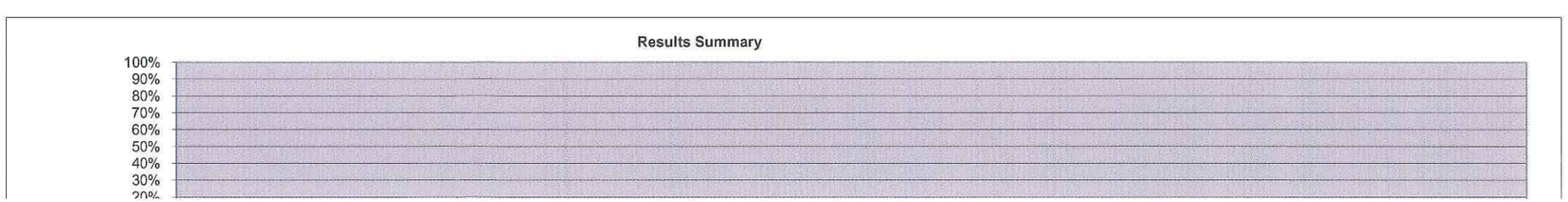
Overall Comments:

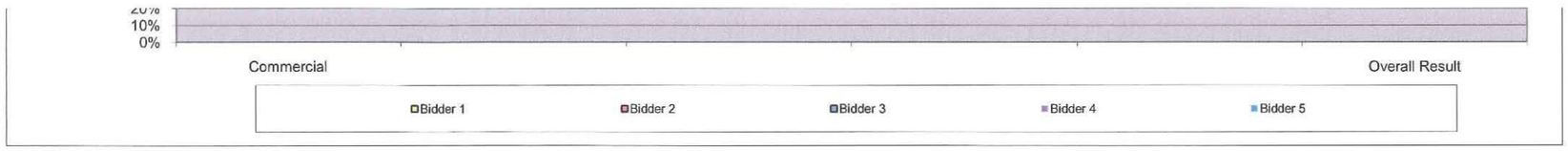
	Bidder 1	Bidder 2	Bidder 3	Bidder 4	Bidder 5
Points value of Section 1 Commercial	0% **0.00**	0% **0.00**	0% **0.00**	0% **0.00**	0% **0.00**
OVERALL RATING OF PROPOSALS	0% **0.0**	0% **0.0**	0% **0.0**	0% **0.0**	0% **0.0**

Note 1: The lowest total evaluated price will receive full marks (10). For each 2% difference between the lowest evaluated price and the other evaluated prices the Bidder will lose one point.
Example if second lowest evaluated price is 4% higher than the lowest evaluated price that Bidder will receive an 8 out of 10

Note 2: The assessment of the terms and conditions will be more subjective. The Bidder offering the best package of terms and conditions will score 10. These terms and conditions will be the benchmark used to compare those submitted in the other Proposals. If all three Bidders are offering similar conditions they will all receive a score of 10. Proposals offering less attractive terms will be down scored accordingly depending on the extent of their non compliances.

		Bidder 1	Bidder 2	Bidder 3	Bidder 4	Bidder 5
1	Commercial	0%	0%	0%	0%	0%
2						
3						
5						
6	**Overall Result**	**0%**	**0%**	**0%**	**0%**	**0%**




20%
10%
0%
Commercial
Overall Result
Bidder 1
Bidder 2
Bidder 3
Bidder 4
Bidder 5

Appendix 13 Commercial Evaluation Matrix

Package # 505573-CH0032 Package Description: S/I Powerhouse Hydro/Mechanical Equipment
Scope B - Spillway

Contract Administrator: R Anderson
Lead Technical : Bruce Drover
Lead Commercial: E. Over
Area Managers: L. Turcotte & Scott O'Brien

NOTE: Each subsection is rated on a scale 1 - 10 (rating) then multiplied by the weighted value (weighting) for the item (within the evaluation subsection) to get the item value.

Section 1 Commercial

Lead : Ed Over

	Criteria:	Weighted value: / item wgtg		Bidder 1 Rating 0-10	Bidder 1 item value	Bidder 2 Rating 0-10	Bidder 2 item value	Bidder 3 Rating 0-10	Bidder 3 item value	Bidder 4 Rating 0-10	Bidder 4 item value	Bidder 5 Rating 0-10	Bidder 5 item value	Comments:
1	**Total Evaluated Cost comprising :**	65%	x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
	Proposal Prices		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
	Terms of Payment		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
	Net Present Value		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
	Delivery Schedule		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
	Currency Exchange Costs		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
	Estimated Inspection & Expediting Costs		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
			x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
2	**Terms & Conditions comprising:**	35%	x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
	Limitation of Liability		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
	Liquidated Damages Cap		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
	Liquidated Damages amounts		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
	Title Transfer		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
	Insurance		x		0.00		0.00		0.00		0.00		0.00	
	Security		x		0.00		0.00		0.00		0.00		0.00	
	Ownership of I.P		x		0.00		0.00		0.00		0.00		0.00	
	fault		x		0.00		0.00		0.00		0.00		0.00	
	.erall compliance		x		= 0.00		= 0.00		= 0.00		= 0.00		= 0.00	
		100%		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Weighted value				X 60%		X 60%		X 60%		X 0%		X 0%	
	Points value				**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	

SUMMARY OF PROPOSAL RESULTS

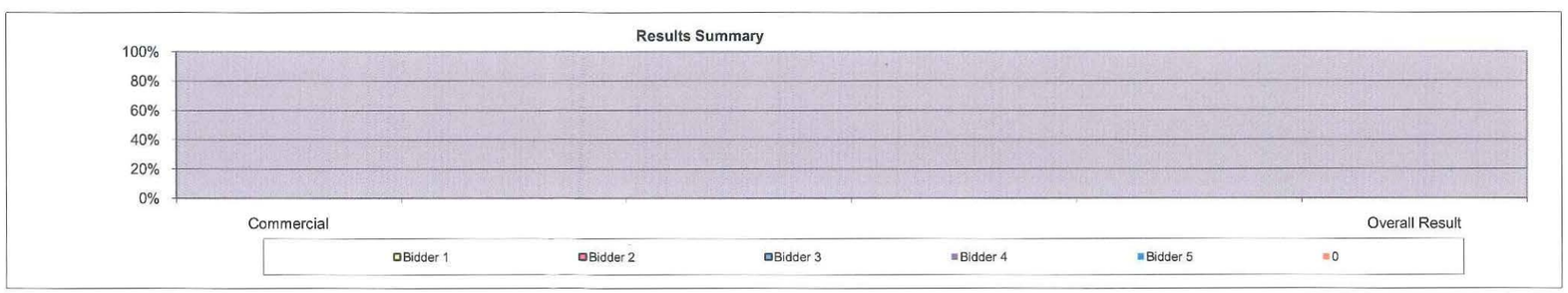
Overall Comments:

	Bidder 1	Bidder 2	Bidder 3	Bidder 4	Bidder 5
Points value of Section 1 Commercial	0% 0.00	0% 0.00	0% 0.00	0% 0.00	0% 0.00
OVERALL RATING OF PROPOSALS	0% **0.0**	0% **0.0**	0% **0.0**	0% **0.0**	0% **0.0**

Note 1: The lowest total evaluated price will receive full marks (10) For each 2% difference between the lowest evaluated price and the other evaluated prices the Bidder will lose one point.
Example if second lowest evaluated price is 4% higher than the lowest evaluated price that Bidder will receive an 8 out of 10

Note 2: The assessment of the terms and conditions will be more subjective. The Bidder offering the best package of terms and conditions will score 10. These terms and conditions will be the benchmark used to compare those submitted in the other Proposals. If all three Bidders are offering similar conditions they will all receive a score of 10. Proposals offering less attractive terms will be down scored accordingly depending on the extent of their non compliances.

		Bidder 1	Bidder 2	Bidder 3	Bidder 4	Bidder 5
1	Commercial	0%	0%	0%	0%	0%
2						
3						
4						
5						
6	**Overall Result**	**0%**	**0%**	**0%**	**0%**	**0%**



APPENDIX 14

TECHNICAL EVALUATION MATRIX

Appendix 14A - Technical Backup to Weighted Evaluation Criteria

RFP CH0032	RFP Name:	S/I Powerhouse Hydro-Mechanical Equipment				
		Bidder 1	Bidder 2	Bidder 3	Bidder 4	Bidder 5
Evaluation Plan Appendix 14a	Max Score	Score	Score	Score	Score	Score
A. Spillway Hydro-Mechanical						
1. Experience with design type & capacity	6.00					
2. Selection of material and components	8.00					
3. Proven design and reliability	8.00					
4. Maintainability	2.00					
5. Spare parts availability	1.00					
Score	25.00	0	0	0	0	0
6. Compliance with Specifications (Pass/Fail Multiplier)	(1 or 0)					
Total Evaluated Score (Score x Multiplier)		-	-	-	-	-
B. Spillway Electrical Building						
1. Experience with design type & capacity	5.00					
2. Selection of material and components	6.00					
3. Proven design and reliability	6.00					
4. Maintainability	2.00					
5. Spare parts availability	1.00					
Score	20.00	0	0	0	0	0
6. Compliance with Specifications (Pass/Fail Multiplier)	(1 or 0)					
Total Evaluated Score (Score x Multiplier)		-	-	-	-	-
C. Intake Hydro-Mechanical						
1. Experience with design type & capacity	6.00					
2. Selection of material and components	8.00					
3. Proven design and reliability	8.00					
4. Maintainability	2.00					
5. Spare parts availability	1.00					
Score	25.00	0	0	0	0	0
6. Compliance with Specifications (Pass/Fail Multiplier)	(1 or 0)					
Total Evaluated Score (Score x Multiplier)		-	-	-	-	-

Appendix 14A - Technical Backup to Weighted Evaluation Criteria						
RFP CH0032	RFP Name: S/I Powerhouse Hydro-Mechanical Equipment					
		Bidder 1	Bidder 2	Bidder 3	Bidder 4	Bidder 5
Evaluation Plan Appendix 14a	Max Score	Score	Score	Score	Score	Score
D. Draft Tube Hydro-Mechanical						
1. Experience with design type & capacity	4.00					
2. Selection of material and components	4.00					
3. Proven design and reliability	4.00					
4. Maintainability	2.00					
5. Spare parts availability	1.00					
Score	15.00	0	0	0	0	0
6. Compliance with Specifications (Pass/Fail Multiplier)	(1 or 0)					
Total Evaluated Score (Score x Multiplier)		-	-	-	-	-
E. Trash Cleaner						
1. Experience with design type & capacity	4.00					
2. Selection of material and components	3.00					
3. Proven design and reliability	3.00					
4. Maintainability	4.00					
5. Spare parts availability	1.00					
Score	15.00	0	0	0	0	0
6. Compliance with Specifications (Pass/Fail Multiplier)	(1 or 0)					
Total Evaluated Score (Score x Multiplier)		-	-	-	-	-
Score-Based Conclusion	100.00	???	???	???	???	???

APPENDIX 15

SCHEDULE & EXECUTION PLAN EVALUATION MATRIX

Appendix 15 Schedule and Execution Plan Evaluation Matrix
Package # 505573-CH0032 Description: S/I Powerhouse Hydro/Mechanical Equipment

Contract Administrator.: R .Anderson
Lead Technical : Bruce Drover
Lead Commercial: E. Over
Lead Planner: Tony Scott
Area Managers: Luc Turcotte

NOTE: Each subsection is rated on a scale 1 - 10 (rating) then multiplied by the weighted value (weighting) for the item (within the evaluation subsection) to get the item value.

Section 3 Schedule & Execution Plan

Lead Planner: Tony Scott

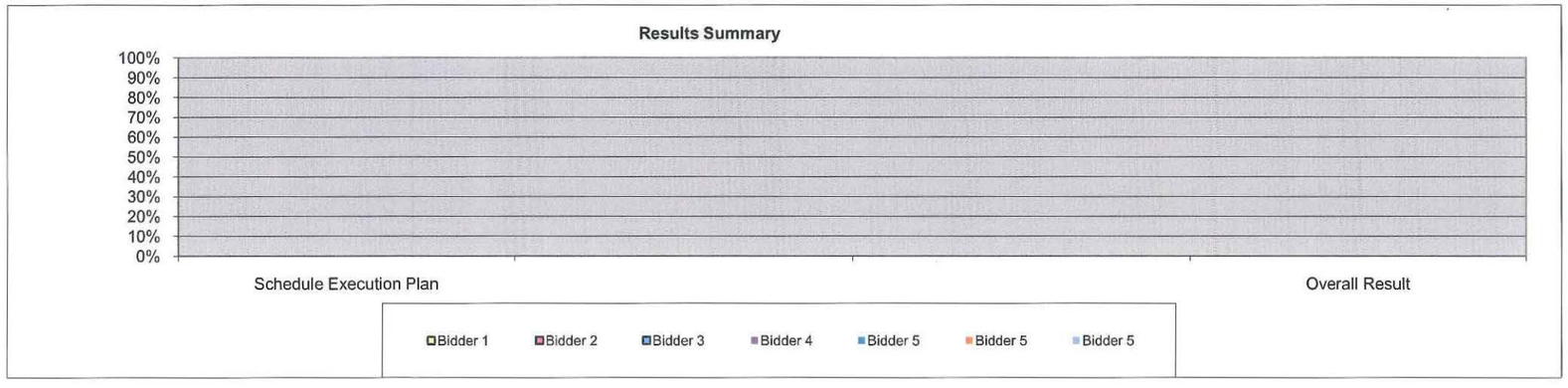
	Weighted value:	10%	Bidder 1		Bidder 2		Bidder 3		Bidder 4		Bidder 5		
	Criteria:	item wgtg	Rating 0-10	item value	Rating 0-10	item value	Rating 0-10	item value	Rating 0-10	item value	Rating 0-10		**Comments:**
1	Work Schedule Milestones	30%		0.00		0.00		0.00		0.00		0.00	
2	Site Staff Schedule	10%		0.00		0.00		0.00		0.00		0.00	
3	Payment Schedule (against deliverables)	10%		0.00		0.00		0.00		0.00		0.00	
4	SDRL Compliant with Schedule	10%		0.00		0.00		0.00		0.00		0.00	
5	Schedule Quality	20%		0.00		0.00		0.00		0.00		0.00	
6	Execution Plan / Strategy	20%		0.00		0.00		0.00		0.00		0.00	
				0.00		0.00		0.00		0.00		0.00	
				0.00		0.00		0.00		0.00		0.00	
		100%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				X		X		X		X		X	
	Weighted value			10%		10%		10%		10%		10%	
	Points value			**0.00**		**0.00**		**0.00**		**0.00**		**0.00**	

SUMMARY OF RESULT

Overall Comments:

	Bidder 1		Bidder 2		Bidder 3		Bidder 4		Bidder 5	
Points value of Section 3 Schedule & Execution Plan	0%	**0.00**	0%	**0.00**	0%	**0.00**	0%	**0.00**	0%	**0.00**
OVERALL RATING OF PROPOSALS	0%	**0.00**	0%	**0.00**	0%	**0.00**	0%	**0.00**	0%	**0.00**

	Bidder 1	Bidder 2	Bidder 3	Bidder 4	Bidder 5
Schedule Execution Plan	0%	0%	0%	0%	0%
Overall Result	**0%**	**0%**	**0%**	**0%**	**0%**



APPENDIX 16

RECOMMENDATION FOR AWARD SUMMARY REPORT

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BID EVALUATION PLAN APPENDIX 16

Lower Churchill Project

RECOMMENDATION FOR AWARD

SUMMARY REPORT

CH0032: Supply & Install Powerhouse Hydro/Mechanical Equipment

	NAME	TITLE	SIGNATURE	DATE
PREPARED BY:	*Robert Anderson*	Contract Administrator		
REVIEWED BY:	*Greg Synder*	Engineering Mgr. C-1		
REVIEWED BY:	*Ed Over*	Sr. Advisor – Commercial Strategies		
REVIEWED BY:	*Bruce Drover*	Package Leader		
REVIEWED BY:	*Serge Guerette*	Project Cost Controls Manager		
REVIEWED BY:	*Scott O'Brien*	Project Manager – C1		
REVIEWED BY:	*Jason Kean*	Deputy Project General Manager		
APPROVED BY:	*Pat Hussey*	Supply Chain Manager		
APPROVED BY:	*Ron Power*	General Project Manager		

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1 INTRODUCTION

1.1 PACKAGE NO.:

CH0032

1.2 PACKAGE TITLE:

SUPPLY & INSTALL POWERHOUSE HYDRO/MECHANICAL EQUIPMENT

1.3 PACKAGE SCOPE OF WORK BRIEF DESCRIPTION:

Contractor will be responsible for the Design, Fabrication, Shop Testing, Delivery, Installation, Worksite Testing, Commissioning and Guarantee of:

Enter brief description of scope of Work

1.4 ESTIMATE:

CAD$ XXXXX

1.5 CONTRACTING PARTIES:

Nalcor Energy and the successful Bidder (Contractor)

1.6 AGREEMENT TYPE:

Supply & Install

1.7 APPROVED BIDDERS LIST:

- ALSTOM
- ANDRITZ
- BLACK & MACDONALD
- GANOTEC/CANMEC
- KOREA HYDRO
- HMI (DECLINED TO BID)

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1.8 RFP KEY DATES AND VALIDITY:

- Issue RFP: 7 December, 2012
- Site Visits NONE
- Proposal Closing Date: 26 March 2013
- RFP validity 120 DAYS

1.9 RFP ADDENDUMS AND BIDDER CLARIFICATIONS

During the RFP period all Bidders received a total of Qty XX separate RFP Addendums and Qty XX SLI / Nalcor responses to Bidder's Technical and Commercial Clarifications.

2 EVALUATION OF PROPOSALS

2.1 EVALUATION LEADS

Following the receipt, opening and distribution of Proposals the SLI / Nalcor Integrated Evaluation Team commenced a detailed analysis of the Proposals in accordance with the Package approved Bid Evaluation Plan.

The Technical Evaluation including an analysis of the Technical Scope of Work, Schedule, Execution Plan, Quality, Environment, Health and Safety was led by XXXXX with support from project discipline representatives from both the local project office and Montreal.

The Commercial Evaluation including Risk Assessment and Newfoundland & Labrador Benefits was led by XXXXX with support from XXXXXX (Legal Company XXXX), Name XXX (Contract Administrator) and Name XXXX (Risk Manager)

2.2 BIDDER CLARIFICATION MEETINGS

Off Site Technical and Commercial Clarification Meetings were arranged with Qty XX Bidders. During these meetings Senior Representatives were invited to deliver Technical and Commercial Presentations to support their respective Proposals:

- ALSTOM: Day Month 2013
- ANDRITZ: Day Month 2013
- BLACK & MACDONALD: Day Month 2013
- GANOTEC/CANMEC Day Month 2013
- KOREA HYDRO Day Month 2013

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2.3 PREFERRED BIDDER STATUS

2.4 EVALUATION REPORTS

A complete set of Evaluation Reports are attached, please refer to Appendices for details

3 SUMMARY OF FINAL BIDDER PRICES

	ALSTOM	ANDRITZ	BLACK & MACDONALD	GANOTEC /CANMEC	KOREA HYDRO
Total Proposal Price Converted to CAD$	$	$	$	$	$
Cost Adders for Technical Non Conformances	$	$	$	$	$
Estimate for Trades Labour Travel & Costs	$	$	$	$	$
Estimated Total Proposal Price Converted to CAD$	**$**	**$**	**$**	**$**	**$**
Estimated Performance Efficiency Adjustment	$	$	$	$	$
Estimated Other Technical costs example Civil costs (if applicable)	$	$	$	$	$
Estimated Expediting Costs	$	$	$	$	$
Estimated Inspection Cost (QA during manufacturing)	$	$	$	$	$
Estimated Total Evaluated Costs in CAD$	**$**	**$**	**$**	**$**	**$**

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4 RECOMMENDATION FOR AWARD

In consideration of the Evaluation Reports detailed in Section 5.0 including the summary of final proposal prices detailed in Section 3 above, the Evaluation Team recommend awarding a Supply & Install Contract to:

XXXXXXXX for the following fixed contract prices:

- CAD$
- US $
- Euros
- Other currencies if applicable

All prices detailed above exclude HST

In addition to above, an allowance of $ XXX will be included for trades labour travel costs. These costs will be invoiced and paid as actual costs incurred outside of the contract price.

Above pricing based on trades labour rates provided in the Request for Proposal. Pricing will be adjusted based on budgeted person hours between assumed and actual trade's labour rates without any adjustment for overhead and profit.

5 APPENDICES:

- Commercial Evaluation Reports
- Technical Evaluation Reports
- Quality Evaluation Reports
- Health & Safety Evaluation Reports
- Environmental Evaluation Reports
- Schedule & Execution Plan Evaluation Reports
- Newfoundland & Labrador Benefits Evaluation Reports
- Risk Management Evaluation Reports
- Overall Evaluation Scoring Matrix Report