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**Subject:** \*Confidential: IE Report (October 21) - Email 2 of 2  
**Date:** Tuesday, November 5, 2013 5:24:31 PM  
**Attachments:** [.png](#)  
[IE Report - Section 4 \(Draft\) \(October 22, 2013\).PDF](#)

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You owe it to yourself, and your family, to make it home safely every day. What have you done today so that nobody gets hurt?

----- Forwarded by James Meaney/NLHydro on 11/05/2013 05:24 PM -----

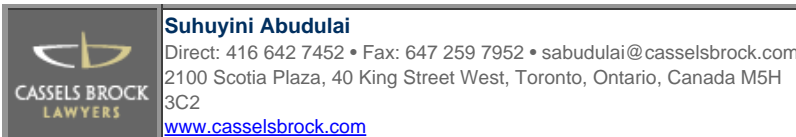
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Date: 11/02/2013 02:41 PM  
Subject: LCRP - Confidential - IE Report (October 21) - Email 2 of 2 [IWOV-Legal.FID1816602]

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Hi Jim,

Further to my email below, attached is Section 4 of the IE Report.

Suhuyini



**From:** Abudulai, Suhuyini  
**Sent:** Saturday, November 02, 2013 1:10 PM  
**To:** 'JamesMeaney@nalcorenergy.com'  
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**Subject:** LCRP - Confidential - IE Report (October 21) - Email 1 of 2 [IWOV-Legal.FID1816602]  
**Importance:** High


Hi Jim,

In light of your comments to the O/S items list, it has come to our attention that you are not in receipt of the latest version of the IE Report dated October 21. In the interest of time, due to the calls and meetings commencing on Monday, we have attached the latest version to this email and ask that you keep it confidential and do not relay this information or confirm to any other parties that you are in receipt of this report. We are in process of finding out why it was not provided to you and obtaining MWH's okay to pass it along (which should not be an issue but again, as noted above, time is of the essence and so we are sending it along now).

I am sending the report in two separate emails. This attachment contains all of the report but for section 4, which will follow in my next email.

Many thanks,

Suhuyini

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IE Report - Section 4 (Draft) (October 22, 2013).PDF

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# **INDEPENDENT ENGINEER'S REPORT LOWER CHURCHILL PROJECT**

**DRAFT- OCTOBER 21, 2013**

Prepared for:

Government of Canada

Prepared by:

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# **SECTION 4**

## **CONSTRUCTION PLAN AND SCHEDULE**

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**SECTION 4****CONSTRUCTION PLAN AND SCHEDULE****4.1 EPCM (ENGINEERING, PROCUREMENT, AND CONSTRUCTION MANAGEMENT) CONTRACT REVIEW**

We note that Nalcor advised MWH that they have revised a pure EPCM Model to an Integrated Project Team Model. According to Nalcor, they have not revised their project delivery model that required transition from the terms of their agreement with SNC-L. Section 4.1.1 discusses the Integrated Project Team Model.

**4.1.1 Responsibilities of Parties**

The EPCM Services Agreement (EPCM Agreement) for the Muskrat Falls Hydroelectric Development between Nalcor and SNC-L is a well prepared and comprehensive contract that places the responsibility for design of a successful project on SNC-L, in MWH's opinion. The effective date of the Agreement is February 1, 2011.

The EPCM Agreement does not give SNC-L the authority to issue any change order, no matter how small it may be, but requires all changes to be submitted to, and approved by, Nalcor's Project Manager. This process constricts the EPCM process of quickly facilitating resolutions of day-to-day issues by very experienced managers in SNC-L who have many years of hydropower practice experience, and appears to be an issue that may cause unnecessary and preventable delays to the project schedule. Experience has shown that on other large EPCM projects, when the EPCM Project Manager is authorized to issue change orders, usually provided with a reasonable "cap," this allows the process to proceed more quickly. Change orders above the cap would require authorization of Nalcor's Project Manager. For the LCP, we would recommend the SNC-L Project Manager be given the authority to authorize charging for work valued up to \$200,000. This would eliminate our initial impression that SNC-L has been given responsibility to deliver the project in a timely manner, but has not been given any level of authority over cost-control. However, given that an Integrated Project Team Model is now being used, the extent of the perceived restricted facilitation of resolution of delays by the IE may not be warranted.

Late in 2012, Nalcor made a strategic decision to adjust its organizational model as it moved through Decision Gate 3 (DG3). At this decision point, the bulk of strategic front-end deliverables that were the focus of Nalcor (i.e., environmental approvals) had been achieved, while the LCP was transitioning from the engineering and procurement phase into the construction phase. A change in the working organizational model was also considered by Nalcor to be key to ensure clarity on roles and responsibilities, while fully leveraging the collective organization resources to achieve priority activities.

Leveraging the strength of Nalcor’s Owner’s Team, combined with the significant resources of SNC-L as EPCM Consultant, the execution model has transitioned from a pure EPCM model to an Integrated Project Team Model, or Option 2 to Option 1 in Figure 4-1. The mantra, according to Nalcor, is “One Team. One Vision.” The organizational model shift is viewed as a key enabler of team effectiveness, which is considered imperative for delivery of this megaproject.

<b><u>Project Delivery Methods</u></b>				
<b>Activity</b>	<b>Option 1</b>	<b>Option 2</b>	<b>Option 3</b>	
Oversight / Project Controls / Audit	<b>Integrated Project Team</b>	<b>Nalcor</b>	<b>Nalcor</b>	
Detailed Engineering & Design		<b>Engineering Consultant</b>	<b>EPCM Consultant</b>	
Project Management, Engineering, Procurement, Project Services				<b>EPC Contractor</b>
Overall Site and Contractor Management				
Construction of the Physical Works	<b>Construction Contractors</b>	<b>Construction Contractors</b>		

**Figure 4-1 Project Delivery Methods<sup>1</sup>**

This Integrated Project Team, or Project Delivery Organization, consists of Nalcor and SNC-L resources as well as various third party consultants, including Hatch, AMEC, Stantec, and independent consultants. Broadening the potential sourcing base for resources has facilitated the ability to secure scarce PM and Construction Management resources within

<sup>1</sup> Figure 4-1 Project Delivery Methods was furnished to MWH by Nalcor for use in the IER.

Labrador/Newfoundland’s heated resource-based economy. Nalcor advised MWH that within this Integrated Project Delivery Organization a Nalcor person can report to a SNC-L person, and vice versa. The objective is to avoid duplication, fully leverage available resources, right-size the project team, and ensure an organizational structure that supports empowerment, accountability, and delegation of authority, according to Nalcor.

Nalcor contends that strong project governance and leadership is achieved by the establishment of an Integrated Management Team that is led by a Project Director. The Nalcor Project Director reports to the LCP VP and Executive Committee. Figure 4-2 gives the high-level organization and governance structure for the LCP.

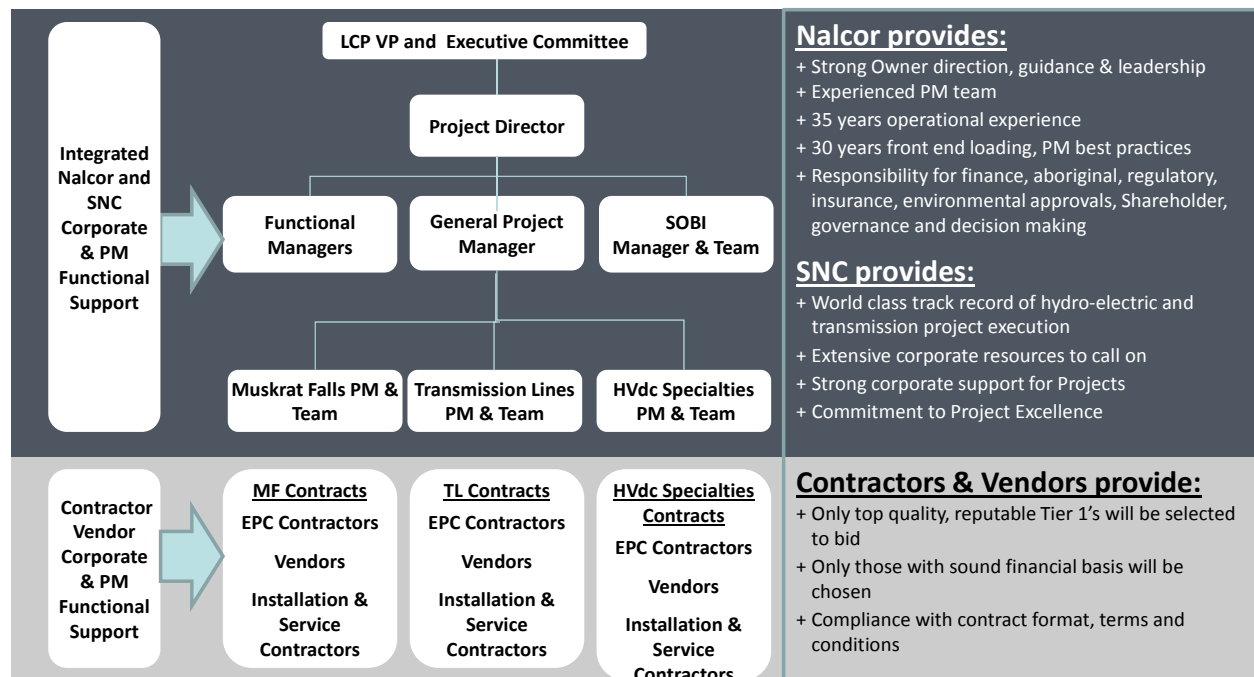


Figure 4-2 LCP Organization and Governance<sup>2</sup>

Consistent with the premises stated within the Overarching Contracting Strategy, this Project Delivery Organization is the Integrator of all contractor works. The Project Delivery Organization must fulfill all obligations that were previously defined for each of Nalcor and for SNC-L as EPCM Consultant.

Within the model, SNC-L remains solely responsible for the completion of all engineering and design, and for assurance of the quality of all engineering with standard engineering practice as previously stated in Section 4.1.2. The SNC-L Senior Manager has accountability to ensure SNC-L’s engineering and design practices are upheld.

<sup>2</sup> Figure 4-2 LCP Organization and Governance was furnished to MWH by Nalcor for use in the IER.

Nalcor has advised MWH that the Project Delivery Organization relies heavily on the processes and systems offered by SNC-L, in particular as it relates to project control. SNC-L's project management enterprise system, PM+, has been fully implemented on the LCP. To that effect, SNC-L provides a substantive resource base to support the Project Delivery Organization.

As can be seen in the organization figure, the organizational design consists of three PMs reporting to a General PM. A deputy PM supports each PM, while overall delivery, including scope, cost, and schedule management, of a particular project component or physical area, is the responsibility of the Area Managers. Reporting to each Area Manager are Package Leaders (i.e., sub-Area Managers), package engineers, and contract administrators. This Area-based management approach has remained consistent since the engagement of SNC-L in early 2011, and underpins the overall delivery strategy.

The Marine Crossings Team, responsible for the SOBI work, is led by a designated PM who reports directly to the Project Director, but maintains day-to-day working relationships with the three Component PMs and all functional managers.

Figure 4-3<sup>3</sup> presents the organizational chart for the Integrated Management Team reporting to the Project Director.

MWH requested Nalcor to provide a revised agreement with SNC-L for review; however, Nalcor advised that no revised agreement will be prepared.

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<sup>3</sup> Figure 4-3 Integrated Management Team Organization Chart was furnished to MWH by Nalcor for use in the IER.

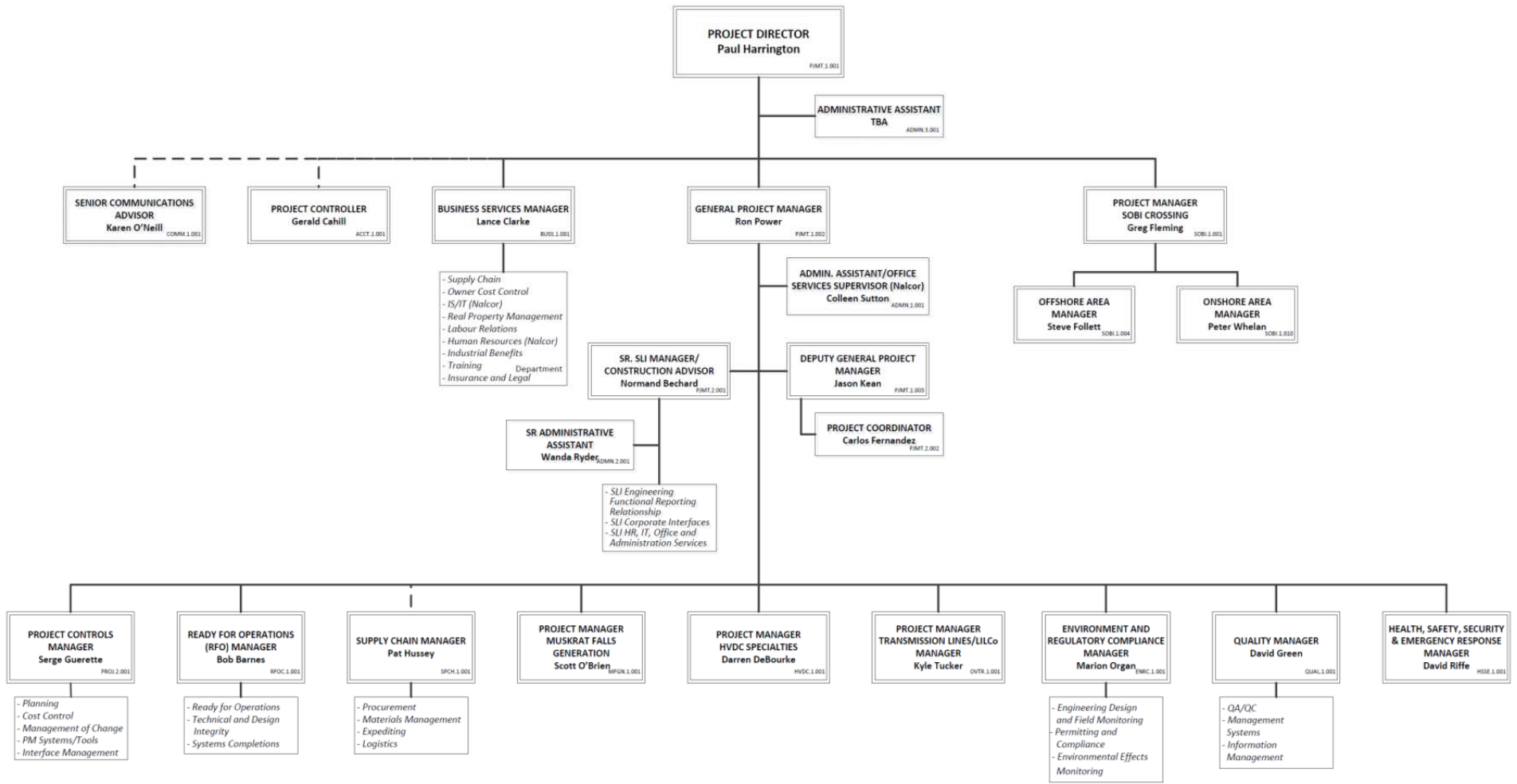


Figure 4-3 Integrated Management Team Organization Chart

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#### 4.1.2 Scope of Work Requirements

Nalcor has included in Exhibit 6 of the Agreement with SNC-L, a listing of documents that define the previous work performed for the LCP and details the studies conducted for the LCP that are available and set out to guide SNC-L in their work. SNC-L is responsible for all of the work for the design, and for the assurance of the quality of all engineering with standard engineering practice, provides the personnel and tools (software) for project control (PM+), and construction management services for the power station and transmission system except the work associated with the high voltage DC cable procurement and installation for the SOBI crossing, which Nalcor is administrating (Contract LC-SB-003).

SNC-L will provide the design and specification development for the over 110 contracts that are the responsibility of the Integrated Project Delivery Organization to issue and administer for the work. Key contracts include:

CH0006 – Bulk Excavation

CH0007 – Muskrat Falls Complex [Intake & Powerhouse, Spillway & Transition Dams]

CH0030 – Turbines and Generators Design, Supply and Install Agreement

PH0014 (RFP) – Generator Step-Up Transformers

CD0501 (RFP) – Converters and Cable Transition Compounds

CT0327 – 350 kV HVdc Transmission Line---Section 1

CT0346 – 350 kV HVdc Transmission Line—Section 2

PH0016 (RFP) – Generator Circuit Breakers

CD0502 – Construction of AC Substations

A list of the other contracts is provided in Appendix D of this report for ease of reference by the reader.

Nalcor, through the Integrated Project Delivery Organization, is responsible for obtaining any necessary license, permit, or approval for the work under the EPCM Agreement, while SNC-L provides the relevant technical input to obtain these permits.

#### 4.1.3 Liability

SNC-L is responsible and assumes weather risk up to and including 20-year return period storm events.

The EPCM Agreement provides for the following protection of Nalcor:

1. A Parent Company Guarantee
2. A Letter of Credit equal to 5 percent of the Agreement Price (\$15 Million)
3. Professional Errors and Omissions Liability Insurance (\$5 Million)
4. Commercial Liability Insurance (limit of \$10 Million)
5. Project-specific Commercial General Liability Insurance (\$20 Million)
6. Automobile Liability Insurance (\$2 Million)
7. Any Reconstruction Costs incurred by Nalcor (\$2 Million)

SNC-L's Limit of Liability was fixed at 16 percent of the Agreement Price (Section 27.2), or \$48 Million.

When a change is required, as ordered by Nalcor, SNC-L has 14 days to respond to the request and is required to furnish a budget and schedule.

The compensation for changes entitles SNC-L to obtain additional compensation for reimbursable costs and additional fixed fees incurred in relation to the Change Order or Change Request. Changed conditions are clearly detailed in Section 23 of the EPCM Agreement, in MWH's opinion.

#### **4.1.4 Communication and Interface Requirements**

The EPCM Agreement provides throughout the text in different sections, information pertaining to how the parties will be communicating. Several of these sections are discussed hereafter.

Section 11 allows for Nalcor to conduct performance reviews of SNC-L's work periodically. Nalcor decides if a Performance Report is required and is delivered after the review has been completed. The Performance Report would describe any actions that Nalcor directs to remedy any failure in the performance of the Services that is apparent from the review. SNC-L is required to comply and remedy the issues found.

Section 31 discusses Public Communications and the constraints placed on SNC-L regarding communicating project information to the public without the written consent of Nalcor. SNC-L is restricted from addressing any media questions, and must revert to Nalcor for any communications that would take place.

Section 32 clearly spells out, in MWH's opinion, the requirement of the parties regarding how they communicate with each other as to the following when giving a notice (communication): it must be written; it must be addressed to Representative for the Party to whom the notice is addressed; when issued by Nalcor, it must be signed or authorized by a company representative, a director or company secretary, or duly authorized representative; where given by SNC-L, it must be signed or authorized by SNC-L's Representative, a director or company



secretary, or duly authorized representative, and be delivered by post, by hand or facsimile to Party; it must be sent or delivered to the specified numbers and addresses in the EPCM Agreement. This section also requires that electronic mail can be used for day-to-day communication, but shall not be used to give notice for Claims, Application for Payments, and termination. It further notes that verbal communication will not constitute formal communications or notice under the EPCM Agreement.

Exhibit 5, Coordination Procedures, spells out numerous details regarding how the parties must coordinate their respective work through different management practices: Technical Interface; Health and Safety; Quality; Procurement; Contracting and Materials; Cost; Project Change; Risk; Construction; Project Completions; Invoicing and Payment; Province Benefits Obligations and Reporting; Information; Regulatory and Environment; and Schedule Management. MWH's opinion is that Exhibit 5 clearly outlines the responsibilities of both parties regarding how they must communicate as required by the EPCM Agreement. With the transition to an Integrated Project Delivery Organization, the formal coordination methods described in Exhibit 5 have become practically superseded since the team is working under a model that reflects a combined Nalcor/SNC-L management system.

Under the Integrated Project Team Model, we anticipate that the communication and interface requirements will work more effectively.

#### **4.1.5 Dispute Resolution Provision**

Defects in the Services are required to be rectified by SNC-L as given in Section 26 of the EPCM Agreement. When an issue arises, Section 28 of the EPCM Agreement would be implemented (Section 28 Dispute Resolution).

Disputes, claims, differences of opinion are handled by the following procedures as given in the EPCM Agreement: Party notifies other Party in writing within 30 days of the dispute; within 30 days, Parties shall attempt to resolve differences through the Project Change Management Process as given in Exhibit 5, Sections 8 and 9 of the EPCM Agreement; if not resolved through the process, Parties shall meet at the following levels: Senior Project Managers within 15 days of receipt of dispute; if not resolved by Senior Project Managers, then Project Sponsor level would be required to be involved within 15 days of the Senior Project Managers' meeting to discuss; if the dispute is not resolved by the Project Sponsor-level individuals, then the issue is addressed by the Chief Executive Officers of Nalcor and SNC-L with 30 days of the meeting of the Project Sponsors; if the dispute is still not resolved within 120 days from the delivery of the dispute to the other Party, the Party filing the dispute may take whatever action is deemed appropriate pursuant to the EPCM Agreement.

Based on MWH's review of the resolution process, as described above, it is our opinion that the dispute resolution procedure is satisfactory and appropriate. Furthermore, under the Integrated Project Team Model, issues will probably be identified earlier and resolved more quickly in MWH's opinion.

#### 4.1.6 Ability to Integrate Each Project with Other Projects

Because Nalcor, through the Integrated Project Delivery Organization, has overall responsibility for all of the projects including the SOBI cable procurement and installation, and has the organizational structure and authority to monitor the different contracts, and with the aid of their critical path schedule will be able to observe where interface issues may arise during the work, MWH is of the opinion that the EPCM Agreement provides the safeguards necessary to achieve successful integration of the meshing contracts.

The relevant Area Construction Manager, who reports to both the Construction Manager and the Area Manager, would be the individual who would identify delays or issues. The Area Construction Manager, in collaboration with the Site Controls Manager, would develop an appropriate specific strategy to address the issue(s) and develop the implementation plan to facilitate the corrections.

The Integrated Planning and Scheduling Team track and monitor the critical and subcritical paths within the three projects, including the SOBI work. The Planning and Scheduling Team also monitors and tracks the critical and subcritical paths for the combination of the projects--interfacing and completions (Ready for Operations) activities. This team also monitors, tracks, and analyzes the contractor-supplied schedules, which include the critical and subcritical paths including key interfaces between each of the contract packages. This activity, according to Nalcor helps ensure the visibility of all internal and external interfaces under the responsibility of the team.

The integration of the SOBI crossing work and the HVdc Specialties-work, for which SNC-L is performing the design, is led by Nalcor's Project Engineer (Drover) with the Marine Crossings Team. Nalcor utilizes the interface management system that is guided by Nalcor's Change and Technical Interface Coordinator (Gillis) for all three components of the LCP for which SNC-L is responsible for the design, but mostly with the Nalcor Project Manager HVdc Specialties and the Nalcor Project Manager Overland Transmission. Regular bi-weekly interface meetings between these parties occur to address open interfaces. There are a defined number of interfaces that are well understood, and as a result personnel from both the Onshore and Offshore functions of the Marine Crossing Team are deeply involved with the interfaces as well. MWH concurs that the system to promulgate a successful interface of the work should be able to address the rather limited number of instances where an interface issue would occur and is suitable for its intended purpose of expediting solutions to any issues that may occur during design and construction.

The Procurement Team is responsible for establishing contracts and facilitating the delivery of the system. The quality assurance function provides the necessary level of shop surveillance to minimize the likelihood of an unforeseen event occurring. The LCP's overall quality assurance program combined with logistics functions is expected to work to minimize losses during shipment or damage to components being shipped.

#### 4.1.7 Potential Legal Issues

Issues that the IE is aware of have surfaced in the press and in documents published by the World Bank surrounding the conduct of SNC-L representatives in Libya, Bangladesh, Montreal, and France. Allegations of bribery to win projects and aiding a banned government representative have been raised, with a senior executive of SNC-L currently imprisoned in Switzerland and the former SNC-L CEO arrested in Canada along with several senior representatives of SNC-L being forced to leave the company because of these activities. A pending billion dollar lawsuit by shareholders of the company is also being promulgated. The lawsuit alleges the bribery issues have driven the SNC-L stock price lower, which caused shareholders to lose money. All of this negative publicity associated with the possible legal problems facing SNC-L is required to be surfaced by the IE since the outcome of any legal action could affect the performance of the staff assigned to the LCP. Since the IE cannot give legal opinions, nor is required or qualified to comment on the outcome of any findings by the Royal Canadian Mounted Police or the World Bank in their preliminary findings, and the investigations are currently under way, MWH will not give any opinions on these matters other than what we have noted above. We have discussed the issue with Nalcor representatives and they recognize the need to present this information, but have noted to MWH that they are fully supportive of the SNC-L staff they have been working with on the LCP and will continue to work with them, barring any unforeseen issues that surface after investigations by legal authorities have been completed. Nalcor has recently revised the project delivery methods, as noted previously, to an Integrated Project Team working more closely with SNC-L that supports their trust in the staff working with them. In the unlikely event that SNC-L is not able to perform for any reason, there are other capable firms that could take over SNC-L's responsibilities.

#### 4.2 BULK EXCAVATION CONTRACT REVIEW – CH0006

The Bulk Excavation Contract was started on November 9, 2012, shortly before Nalcor received notification that the LCP received Government Sanction on December 17, 2012, since a further delay due to waiting for the full Sanction would have severely delayed the start of the contract and the entire project. Contract CH0006 was awarded to a group of four contractors including the following firms, each of which is well known in Canada: HT O'Connell, EBJ, Nielson, and Kiewit. The current contract amount that was agreed to by the parties is \$112,942,295.00 (Rev 3). The reader is advised that within this report, all dollars given are Year-2012 and Year-2013 Canadian Dollars, depending on the award date. The Contract Substantial Completion Date is December 31, 2013.

Since the IE, by its Agreement with Nalcor, is only required to review certain contracts out of the 113 separate contracts currently identified (March 2013) that Nalcor and MWH believe are the main contracts that need to be reviewed as part of the IE's technical and environmental evaluations, MWH has developed a standard format that addresses the questions contained in the Agreement task descriptions to standardize its responses. Since additional information is

also specifically requested in other sections of the IER, some information may be repeated or expanded, as required by the Agreement.

**Table 4-1**

**CONTRACT CH0006**

**BULK EXCAVATION**

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
1	QUALIFICATIONS OF CONTRACTOR	EACH CONTRACTOR HAS THE FULL CAPABILITIES TO PERFORM ALL OF THE WORK ITSELF	NALCOR ADVISES THAT THE CONTRACTING GROUP PLANS TO SUBMIT A BID FOR CH0007	CONTRACTING GROUP IS SATISFACTORY
2	QUALIFICATIONS OF SUBCONTRACTORS	BLASTING CONTRACTOR IS NOT KNOWN TO MWH. NALCOR ADVISED THAT EXPLOTECH ENGINEERING IS BLASTING CONTRACTOR	'MOOSE' MORIN IS BLASTING CONSULTANT. NALCOR AND SNC-L HAVE ACCEPTED BLASTING SUB-CONTRACTOR	SATISFACTORY
3	COMPLETENESS	REVIEWED ENTIRE DOCUMENT; APPEARS TO BE COMPLETE	REPAIR OF OVER BLASTING AND HOW TO CORRECT-NO CORRECTIONS BY THIS CONTRACTOR PER NALCOR RESPONSE TO QUESTION; DEWATERING SYSTEM TO WORK SIX MONTHS AFTER CONTRACTOR LEAVES. NALCOR IS RESPONSIBLE IF ISSUES RESULT	SATISFACTORY
4	CONTRACTS PERFORMED INDEPENDENTLY	THIS CONTRACT IS LEAD CONTRACT AND IS INDEPENDENT OF OTHERS	SEE 3 ABOVE RE DEWATERING RESPONSIBILITIES	SATISFACTORY
5	CONTRACTOR'S AND OWNER'S RESPONSIBILITIES	ARTICLE 7; ARTICLE 9- CONTRACTOR;	WORK IS SATISFACTORILY DEFINED	SATISFACTORY

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		ARTICLE 10-NALCOR; EXHIBIT 3, PART 2, 5.2 ARE CONTRACTOR'S RESPONSIBILITIES & PART 1, EXHIBIT 12 SCOPE OF WORK		
6	GUARANTEES, WARRANTIES	ARTICLE 14; ARTICLE 17—NALCOR ADVISED THAT NO GUARANTEES ARE REQUIRED OTHER THAN FAULTY WORK / DEFICIENCIES ARTICLE 17-THREE YEARS FROM ACCEPTANCE OF WORK. WARRANTEE FOR RIVERSIDE RCC COFFERDAM, ROCKBOLTING AND EMBANKMENT COFFERDAMS; ONE YEAR FOLLOWING DATE OF SUBSTANTIAL COMPLETION FOR OTHER WORK.	NALCOR INFORMED MWH THAT BECAUSE OF THE LATE START OF OVER 2 MONTHS THAT OCCURRED BECAUSE OF THE DELAY IN OBTAINING THE PROJECT SANCTION, THEY DECIDED TO ELIMINATE SOME GUARANTEES TO ALLOW WORK TO START MORE QUICKLY AND FOR THE 'CONTRACTOR TO ACCOMPLISH THE WORK' WITHOUT THESE RESTRAINTS'. HOLDBACK PROVISIONS ARE IN PLACE THAT ALLOW THE OWNER TO MAINTAIN SOME MONETARY CONTROL OVER THE CONTRACTOR. MWH REQUIRES PROOF THAT THE CONTRACTOR IS PERFORMING SATISFACTORILY TO ALLOW AN OPINION TO BE EXPRESSED.	SATISFACTORY
7	CHANGE ORDERS	ARTICLE 14; ARTICLE 30 DISPUTE RESOLUTION; EXHIBIT 2, PART 2, SECTION 5 CHANGES; PART 2,		SATISFACTORY

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		EXHIBIT 3- APPENDIX A CHANGE REQUEST; APPENDIX B CHANGE ORDER		
8	CONFORMS TO INDUSTRY STANDARDS	CONTRACT SEEMS TO BE COMPLETE; HOWEVER, DOES NOT CONFORM TO CURRENT PRACTICE BEING ADOPTED USING ASCE GBRC GUIDELINES FOR GEOTECHNICAL REPORTS	FOLLOWING A CURRENT GUIDELINE ALLOWS FOR AN EARLIER ASSESSMENT OF POSSIBLE ISSUES AND DEFINES RESPONSIBILITY FOR CHANGED CONDITIONS CLEARLY; RECOMMEND THAT NALCOR AND SNC-L FAMILIARIZE THEMSELVES WITH CONDITIONS IN ASCE GUIDELINE TO DETERMINE IF ANY AMENDMENTS ARE NECESSARY TO INCLUDE WITH THE CONTRACT	CURRENT USA PRACTICE WAS NOT ADOPTED WHICH MANY PROJECTS NOW FOLLOW SINCE IT CLEARLY PROVIDES AVENUES FOR RESOLUTION OF ISSUES; HOWEVER, WITH CLOSE MONITORING AND FAIR INTERPRETATION OF CONTRACT, WE JUDGED THIS ITEM TO BE SATISFACTORY.
9	COMPENSATION TERMS	EXHIBIT 2 INCLUDES MATERIAL PERTAINING TO COMPENSATION AND THE REQUIREMENTS TO OBTAIN		SATISFACTORY
10	GUARANTEES & LIQUIDATED DAMAGES	ARTICLE 17 PROVIDES FOR WARRANTIES; NO ARTICLE FOR LIQUIDATED DAMAGES IS PROVIDED IN THE CONTRACT		IE CAN NOT GIVE AN OPINION AT THIS TIME. RESULTS WILL BE KNOWN BEFORE FINANCIAL CLOSE AND THE LIKELY IMPACTS ON THE PROJECT SCHEDULE TO ALLOW IE TO OPINE LATER. <b>IS THERE AN</b>

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
				UPDATE THAT CAN BE FURNISHED TO MWH?
11	PERFORMANCE BOND, LDS, BONUS, BUYDOWN/OUT	IN THE CONTRACT, PERFORMANCE BOND: 100% OF CONTRACT PRICE IS PROVIDED (CORRECTED VALUE FROM 50% RFP VALUE); IN RFP PARENT GUARANTEE REQUIRED TO BE FURNISHED; LETTER OF CREDIT-15% OF CONTRACT PRICE TO FINAL COMPLETION; 5% TO END OF WARRANTY PERIOD; EXHIBIT 2, PART 2, SECTION 9; LDS FOR MISSED MILESTONES. THE FINAL CONTRACT DOES NOT HAVE ANY OF THESE PROVISIONS WITHIN THE DOCUMENT. IN FINAL CONTRACT A 100% LABOR AND MATERIAL PAYMENT BOND IS FURNISHED FOR 100% OF CONTRACT PRICE.	DATA IS MISSING AND REQUIRES TO BE ENTERED IN THE CONTRACT WHICH WOULD BE SHOWN IN EXHIBIT 14--- PERFORMANCE SECURITY. NALCOR ADVISED THAT NO LDS WILL BE ASSESSED BECAUSE OF THE LATE START INCURRED BECAUSE OF THE PROJECT SANCTION BEING DELAYED.	NO OPINION CAN BE GIVEN AT THIS TIME. IS THERE AN UPDATE THAT CAN BE FURNISHED TO MWH?
12	COMPLIANCE CONTRACTS, PERMITS, PERFORMANCE	PART 2, EXHIBIT 6 PERMIT APPLICATIONS: 14 ARE THE RESPONSIBILITY OF THE CONTRACTOR; OTHERS—THE ENGINEER		THIS ITEM APPEARS TO BE SATISFACTORY
13	GUARANTEE OF EQUIPMENT	NOT APPLICABLE		NO OPINION NEEDED, NOT APPLICABLE
14	CONSTRUCTION	LOCATED AT PART 2,		SATISFACTORY

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
	SCHEDULE	FOLLOWING EXHIBIT 14; CRITICAL PATH SCHEDULE FURNISHED		
15	SCHEDULE REVIEW; ADEQUATE PROVISIONS	SUFFICIENT BREAKDOWN INTO SUBTASKS NOTED; BENCH DESIGNATION USED FOR EXCAVATION		SATISFACTORY
16	CRITICAL PATHS	MILESTONE DATES: EXHIBIT 9, PART 2: SUBSTANTIAL COMPLETION DEC 31, 2013; EXHIBIT 3, PART 2, 5.4 CONTROL SCHEDULE BASELINE DOCUMENT; SEE 16. ABOVE, FOR LOCATION OF SCHEDULE IN DOCUMENTS	FROM SCHEDULE, THERE APPEARS TO BE ADEQUATE FLOAT TO ACCOMMODATE ISSUES THAT MAY BE ENCOUNTERED— NEARLY 1.5 MONTHS TIME; THE IE REQUIRES VIEWING THE WORK PROGRESS BEFORE OFFERING ITS OPINION SINCE ACTUAL PRODUCTION RATES MUST EQUAL OR EXCEED THOSE ASSUMED AND USED IN THE CONTRACT DOCUMENTS	SATISFACTORY  THE IE ASSUMES, BASED ON PERFORMANCE TO DATE (OCTOBER 8, 2013) THE WORK WILL BE COMPLETED.
17	LIKELIHOOD OF ACHIEVING MILESTONES	PROGRESS NEEDS TO BE ASSESSED BY IE DURING FIELD VISIT TO GAGE LIKELIHOOD OF ACHIEVING MILESTONES; SUFFICIENT FLOAT IN SCHEDULE PROVIDED APPEARS TO ALLOW FOR COMPLETING CONTRACT SUBSTANTIAL COMPLETION	IE WILL OBSERVE PROGRESS DURING ITS FIELD VISIT TO ASSESS PERFORMANCE AND LEARN OF ANY ISSUES THAT ARE THEN APPARENT TO FORM OPINION. THE IE OBSERVED PROGRESS AND IT IS GENERALLY TRACKING PROJECTIONS.	IE CAN NOT OFFER OPINION AT THIS TIME. THE IE WILL BE ABLE TO GIVE AN OPINION BEFORE FINANCIAL CLOSE BASED ON CURRENT SCHEDULE. HOWEVER, IT APPEARS TO BE SATISFACTORY AT THIS DATE (OCTOBER 8,



ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
				2013).
18	RIVERSIDE COFFERDAM ELEVATION	MWH REQUESTED REVIEW BY NALCOR TO ASCERTAIN COFFERDAM HEIGHT REQUIREMENTS AND A SKETCH THAT SHOWS RIVER GAUGES WITH PEAK ICE DAM FLOOD ELEVATION 22 METERS PLOTTED TO ASCERTAIN SUFFICIENT HEIGHT.	MWH RECEIVED REQUESTED PLOT OF WATER SURFACE ELEVATION DUE TO ICE JAM AND HEIGHT OF COFFERDAM. IE IS AWAITING DETERMINATION OF RECURRENCE INTERVAL OF ICE JAMS AT ELEVATION 22 TO 21 METERS. THIS INFORMATION WAS NEVER RECEIVED IN A NALCOR PACKAGE RESPONSE. INFORMATION FROM ANOTHER DOCUMENT IMPLIES A 1:40 YEAR RETURN PERIOD FOR THE ICE JAM WITH THE EL. OF COFFERDAM ESTABLISHED AT 21 m + 1 m FREEBOARD ALLOWANCE.	SATISFACTORY. ISSUE IS CLOSED.

The reader should note that at the present time (October 2013), MWH is not able to opine on some of the items they are required to express an opinion on. However, in order for the reader to be aware of the expectations of providing such opinion, a summary table has been included with this section to provide additional information as to our expectations as to when the IE may be able to opine.

**4.3 CONSTRUCTION OF INTAKE & POWERHOUSE, SPILLWAY & TRANSITION DAMS CONTRACT REVIEW – CH0007**

To date, MWH has only been furnished the RFP to solicit bids for Contract CH0007, and a portion of the contract. Based on our review of these documents, we find that many of the subjects that we are required to comment on are not sufficiently addressed, requiring more information. Nalcor initially requested MWH to review the RFP in lieu of the actual contract since the contract signing was expected to be June 4, 2013, the expected award date of the contract. The actual award date of the Limited Notice to Proceed is September 24, 2013.

In accordance with the Limited Notice to Proceed dated September 24, 2013, between Nalcor Energy and Astaldi Canada Inc., the following Contract price on the finalization of the Agreement between the parties will be made up of the following components as given in Table 4-2.

**Table 4-2**

**CONTRACT CH0007**

**CONSTRUCTION COST OF INTAKE & POWERHOUSE, SPILLWAY & TRANSITION DAMS**

<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>COST (\$)</b>
1	Target Cost of Labor	507,598,341.00
2	Labor Profit	35,531,884.00
3	Non-Labor Component	452,104,434.08
4	Travel Allowance (EST)	29,057,891.00
	<b>Total</b>	<b>1,024,292,550.08</b>

Schedule 2 of the Limited Notice to Proceed includes a table of estimated payments for the months ending September 2013 and October 2013. The respective payments are listed as \$2,105,592 and \$5,565,439. An initial amount of \$15,000,000 was advanced to the contractor to cover the two estimated payments and to provide start-up payments to the subcontractors and suppliers. All of these payments will be subject to a 10 percent holdback by Nalcor as required of the Newfoundland and Labrador Mechanics' Lien Act. The holdback will be released to the contractor on the execution of the final Agreement and upon receipt of a holdback release bond, assuming the Agreement is signed.

In further consideration of "Known Items to be Addressed" (found in the table in Schedule 3, Agreement Form, under item 7) is the following:

Finalization of Appendix A2.1: to be submitted with the text of the original A2.1 Form from the RFP document; to include for the discount of \$40 million Canadian dollars consented as part of the Minutes of Meeting of September 14th, and to include the price adjustments made for the additional \$50 million in the Letter of Credit for performance and the additional Performance Bond of \$150 million [minus \$40 million plus \$50 million plus \$150 million equals \$160 million of additional cost that is included in the Total amount given in Table 4-2.]

Based on the review of Contract CH0007, we have prepared the following table to aid the reader in its assessment of what the IE has been able to conclude, to date (October 21, 2013).

Table 4-3

CONTRACT CH0007

CONSTRUCTION OF INTAKE & POWERHOUSE, SPILLWAY & TRANSITION DAMS

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
1	QUALIFICATIONS OF CONTRACTOR		NALCOR REQUIRED TO FURNISH THE COMPLETE CONTRACT FOR CH0007; ALSO CONTRACTOR EVALUATION FOR MWH REVIEW	
2	QUALIFICATIONS OF SUBCONTRACTORS	SUBCONTRACTORS ARE COVERED UNDER ARTICLE 6	SUBCONTRACTORS' NAMES HAVE BEEN SUBMITTED OR FURNISHED TO MWH. NALCOR REQUIRED TO FURNISH SUBCONTRACTOR EVALUATIONS FOR REVIEW.	
3	COMPLETENESS	CONTRACT APPEARS TO BE COMPLETE		SATISFACTORY
4	CONTRACTS PERFORMED INDEPENDENTLY	WE REQUIRED A CRITICAL PATH METHOD (CPM) SCHEDULE TO OPINE	P6 CPM REQUIRED	
5	CONTRACTOR'S AND OWNER'S RESPONSIBILITIES	ARTICLE 2 LISTS THE GENERAL REQUIREMENTS OF THE CONTRACTOR; ARTICLE 3 LISTS THE CONTRACTOR'S WORK OBLIGATIONS; OWNER'S RESPONSIBILITIES COVERED UNDER ARTICLE 10; ENGINEER'S RESPONSIBILITIES UNDER ARTICLE 11	EXHIBIT 9 MILESTONE SCHEDULE IS MISSING FROM THE CONTRACT. NALCOR REQUIRED TO FURNISH EXHIBITS TO MWH.	ROLES OF CONTRACTOR AND OWNER ARE CLEARLY DEFINED. SATISFACTORY
6	GUARANTEES, WARRANTIES  ON HOLD	ARTICLE 7 COVERS PERFORMANCE SECURITY; UNDER PART 1, APPENDIX A2,	LC OR PAYMENT BOND AMOUNT IS JUDGED TO BE TOO SMALL FOR	NALCOR HAS EXPLAINED THE REASONING BEHIND THEIR

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		<p>7. PERFORMANCE SECURITY, PERFORMANCE BONDS AND LABOR AND MATERIAL PAYMENT BONDS ARE NOT REQUIRED. A PARENTAL GUARANTEE IS REQUIRED BY 7.4 AND AN LC OF 10% OF CONTRACT PRICE IS REQUIRED AS GIVEN IN ARTICLE 7 AT 7.6. UNDER ARTICLE 17, CONTRACTOR WARRANTIES WORK FOR 3 YEARS</p>	<p>THIS CONTRACT. NOTED OUR OPINION TO NALCOR FOR FURTHER CONSIDERATION. A MINIMUM AMOUNT OF ABOUT 20 TO 30% WOULD BE REASONABLE WE BELIEVE AFTER HOLDING DISCUSSIONS WITH GOVERNMENT TO SOLICIT THEIR OPINIONS. PAYMENT FOR THE LETTER OF CREDIT AND PARENT GUARANTEE (WHY WOULD NALCOR PAY FOR THIS?) IS ON A PRO-RATED MONTHLY INSTALLMENT OVER THE PERIOD OF THE AGREEMENT, NORMAL FOR SUCH LARGE CONTRACTS</p>	<p>DECISION – ENSURE THEY HAVE SEVERAL BIDDERS IN FOLLOW-UP RESPONSES FROM TIER ONE CONTRACTORS BY REMOVING PROVISION OF PERFORMANCE BONDS AND LIMIT LC TO 10%. WE BELIEVE THAT THIS EVALUATION REQUIRES CONSIDERABLY MORE STUDY BEFORE OFFERING AN OPINION.</p>
7	CHANGE ORDERS	<p>ARTICLE 14 PROVIDES FOR CHANGES IN WORK; ONLY OWNER CAN MAKE A CHANGE. NO OVERHEAD AND PROFIT PERCENTAGES ARE GIVEN IN THE CONTRACT ON PAGE 41. ARTICLE 31 COVERS DISPUTE RESOLUTION</p>	<p>REQUIRE A COMPLETE, FILLED-IN CONTRACT</p>	<p>SATISFACTORY  (NEED A COMPLETE CONTRACT)</p>
8	TRANSPORTATION PLAN	<p>ARTICLE 22 LISTS SITE AND TRANSPORTATION CONDITIONS; AT 22.7, CONTRACTOR ASSUMES ALL RISK ASSOCIATED WITH</p>	<p>WE REQUIRE THE TRANSPORTATION PLAN TO BE FURNISHED BEFORE WE CAN OPINE.</p>	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		RIVER AND WEATHER CONDITIONS AT THE SITE; IT NEGLECTS TO NOTE THAT THE OWNER PROVIDES THE REQUIREMENT FOR A 1:40 YEAR RETURN PERIOD FLOOD FOR DESIGN OF COFFERDAMS FOR ICE JAM EVENTS AND 1:20 FOR FLOODS AND A MINIMUM HEIGHT FOR THE ICE JAM DISCHARGE EFFECTS ELEVATION.		
9	LOGISTICS/STORAGE OF MATERIALS	TRANSPORTATION IS COVERED UNDER ARTICLE 22; STORAGE IS ACTUALLY COVERED UNDER PAY ITEM FOR SITE INSTALLATION; THE CONTRACT IS SILENT ON THE AMOUNT OF STORAGE REQUIRED WHICH MAY BE SHOWN ON THE DRAWINGS WHICH WE DO NOT HAVE.	CURRENTLY, INFORMATION IS LACKING TO FORM AN OPINION; WE NEED THE TRANSPORTATION PLAN; THE WAREHOUSING AND STORAGE PLAN; THE TRACKING PLAN FOR ITEMS IN WAREHOUSES.	INFORMATION IS NOT AVAILABLE TO GIVE AN OPINION.
10	CONFORMS TO INDUSTRY STANDARDS	WE REQUIRED THE CONTRACT DOCUMENTS BEFORE AN OPINION CAN BE GIVEN.	NALCOR TO SUPPLY THE CONTRACT, COMPLETE CONTRACT EXPECTED OCTOBER 31, 2013.	
11	COMPENSATION TERMS	PART 2, EXHIBIT 2— ATTACHMENT 1 CONTAINS MEASUREMENT AND PAYMENT PROVISIONS. IT ALSO INCLUDED PROVISIONS FOR FIXED LUMP SUMS AND UNIT PRICES WORK AND INCLUDES		SATISFACTORY

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		PROVISIONS FOR INFLATION. A MONTHLY FORECAST SCHEDULE IS REQUIRED.		
12	GUARANTEES & LIQUIDATED DAMAGES	LDS ARE GIVEN IN PART 2, EXHIBIT 2, SECTION 12, LIQUIDATED DAMAGES FOR DELAY AND PERFORMANCE INCENTIVES. ALSO GIVEN IN ARTICLE 26 WHICH LIMITS THE TOTAL AMOUNT OF LDS TO 5% OF THE CONTRACT PRICE	WE HAVE INCLUDED SAMPLE COMPUTATIONS IN APPENDIX H.  MWH REQUIRES COMPLETE CONTRACT.	
13	PERFORMANCE BOND, LDS, BONUS, BUYDOWN/OUT  ON HOLD	PERFORMANCE SECURITY EXHIBIT 14, IS \$50,000,000 UNTIL FINAL COMPLETION CERTIFICATE HAS BEEN ISSUED; AND \$10,000,000 DURING THE WARRANTY PERIOD DISCUSSED IN ARTICLE 17	SOME OF THE INFORMATION HAS BEEN FURNISHED. WE REQUIRE ADDITIONAL BACKUP INFORMATION TO SUPPORT THE AMOUNTS USED FOR LDS AND BONUSES.	
14	COMPLIANCE CONTRACTS, PERMITS, PERFORMANCE	A SITE-SPECIFIC ENVIRONMENTAL PLAN IS REQUIRED; NALCOR WILL FURNISH ALL PERMITS REQUIRED BY OWNER TO BE OBTAINED; CONTRACTOR RESPONSIBLE FOR OTHERS. CONTRACTOR MUST FOLLOW THE OWNER-FURNISHED PERMITS.	A LISTING OF CONTRACTOR-FURNISHED PERMITS NEEDS TO BE REVIEWED BEFORE AN OPINION CAN BE GIVEN.  MWH IS NOT REQUIRED BY GOVERNMENT TO GIVE OPINION.	NO OPINION WILL BE FURNISHED BY IE.
15	GUARANTEE OF EQUIPMENT	NOT APPLICABLE		NO OPINION REQUIRED
16	CONSTRUCTION SCHEDULE	CRITICAL PATH SCHEDULE AND		DATA ARE NOT AVAILABLE FOR

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		EXECUTION PLAN ARE REQUIRED TO BE FURNISHED		IE TO FORM AN OPINION
17	SCHEDULE REVIEW; ADEQUATE PROVISIONS	CRITICAL PATH SCHEDULE IS REQUIRED FOR REVIEW		
18	CRITICAL PATHS	MILESTONE DATES REQUIRED; CPM SCHEDULE REQUIRED; SUBSTANTIAL COMPLETION DATE REQUIRED	MORE INFORMATION IS REQUIRED TO ALLOW AN ASSESSMENT TO BE PERFORMED BY THE IE	DATA ARE NOT AVAILABLE FOR THE IE TO FORM AN OPINION
19	LIKELIHOOD OF ACHIEVING MILESTONES		DATA MISSING	DATA NOT AVAILABLE; IE CAN NOT FURNISH AN OPINION AT THIS TIME.
20	SUBSURFACE CONDITIONS	ARTICLE 23 PROVIDES PROTECTION TO THE CONTRACTOR IF IT ENCOUNTERS UNFORESEEN GEOLOGICAL OR GEOTECHNICAL CONDITIONS, INCLUDING GROUND WATER WHICH IT BELIEVES WILL IMPACT THE PROJECT SCHEDULE. ARTICLE 14, IF ACCEPTABLE TO THE OWNER WILL ALLOW A CHANGE TO BE MADE TO THE CONTRACT		SATISFACTORY

The reader should be aware of the fact that the IE can only give opinions once it has sufficient information to review to be reasonably certain that there will be no changed conditions that would negate its opinion or observation. Opinions can be expressed in a manner that will qualify the IE's knowledge at the time of making an opinion that is a 'forecast' of what the IE believed to be reasonably expected. Because many of the contracts that the IE will be reviewing will be released later during 2013 and one contract released after financial close unless waived by Government, there are "gaps" in this draft document that will be required to be completed prior to financial close. The contract that will be available after financial close, CT0346 is similar to

CT0327 and provides a means for MWH to forecast an opinion, if required by the Government before financial close.

**4.4 TURBINES & GENERATORS DESIGN, SUPPLY AND INSTALL AGREEMENT – CH0030**

Contract CH0030 was awarded on December 31, 2012, and is scheduled to be substantially complete by March 23, 2017, when commissioning the Muskrat Falls Powerhouse is planned to occur. The amount of the contract is \$166,969,064.98. The contract was awarded to Andritz Hydro Canada Inc. whose parent company, Andritz Hydro is an internationally known, tier-one company that supplies hydrogenerating equipment. Most of the components for the turbine will be fabricated and assembled in China at companies that Andritz Hydro has an interest in and which are able to use the technologies developed by Andritz in their design, manufacturing, and assembly processes.

**Table 4-4**

**CONTRACT CH0030**

**TURBINES & GENERATORS DESIGN, SUPPLY AND INSTALL AGREEMENT**

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
1	QUALIFICATIONS OF CONTRACTOR	ANDRITZ HYDRO CANADA INC., REGISTERED IN NEW BRUNSWICK, AND ITS PARENT COMPANY, ANDRITZ, IS A TIER-ONE SUPPLIER OF TURBINES AND ASSOCIATED EQUIPMENT		THE CONTRACTOR IS SATISFACTORY
2	QUALIFICATIONS OF SUBCONTRACTORS	ALMOST ALL OF THE SUB-CONTRACTORS AND SUB-SUPPLIERS ARE UNKNOWN TO MWH AND FOR THE TURBINES WHICH WILL BE MANUFACTURED IN TIANBAO, CHINA. ABB WILL	IT IS NOT CLEAR WHERE THE GENERATORS WILL FIRST BE ASSEMBLED AND TESTED TO ENSURE THAT ALL COMPONENTS WILL BE READY FOR ASSEMBLY IN THE FIELD; WE	ANDRITZ IS A SATISFACTORY CONTRACTOR. HOWEVER, MWH IS UNABLE TO OPINE ON THE SUB-CONTRACTORS BEING USED TO SUPPLY THE MAJOR COMPONENTS OF



ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		<p>SUPPLY THE STATIC EXCITATION SYSTEM; THE DIGITAL GOVERNOR WILL BE SUPPLIED BY AH HEMI CONTROLS; THE ROTOR POLES WILL BE FROM AH BHOPAL, INDIA; THE STATOR BARS &amp; CONNECTIONS WILL BE FURNISHED BY AH LACHINE, CANADA; THE STATOR PUNCHINGS FROM AH WEIZ, AUSTRIA</p> <p>(AH=ANDRITZ HYDRO)</p>	<p>MUST SURMISE THAT THIS WILL NOT BE DONE AND THAT ANY MODIFICATIONS WILL REQUIRE FIELD MACHINING TO ALLOW PARTS TO FIT PROPERLY IF THERE ARE ANY ISSUES ENCOUNTERED. SINCE THE TURBINE IS AT A SIZE LIMIT FOR THE LARGEST DIAMETER BEING SUPPLIED, AND IN THE 9 METER CLASS, VERY CAREFUL MONITORING OF ALL WORK SHOULD BE REQUIRED.</p>	<p>THE TURBINES AND OF CERTAIN COMPONENTS OF THE GENERATORS SINCE WE HAVE NO EXPERIENCE IN DEALING WITH THEM. WE REQUIRE THE FOLLOWING: EXPERIENCE RECORD OF SIMILAR PROJECTS; COMPANY BROCHURES; LIST OF MAJOR EQUIPMENT USED IN THE MANUFACTURING PROCESS; COMPANY ORGANIZATION CHART; ISO CERTIFICATION PROOF; ANDRITZ PAST EXPERIENCE WITH THE SUPPLIER. NALCOR ADVISED THAT AH OWNS OR IS A PRINCIPAL SHAREHOLDER IN MANY OF THE COMPANIES AND INTENDS TO MONITOR THEM CLOSELY.</p> <p>NO OPINION ON THE SUBCONTRACTORS WILL BE FURNISHED BY MWH.</p>
3	COMPLETENESS	WE STILL REQUIRE ADDITIONAL DATA IN THE RESPONSE	NALCOR ADVISED THAT CANADIAN	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		<p>TO THE RFP THAT SHOULD BE IN THE CONTRACT. WE HAVE NOT BEEN PROVIDED WITH EXAMPLES TO CLEARLY ILLUSTRATE THAT THE LDS ARE REALISTIC AND CAN BE SUPPORTED IF AN ISSUE GOES TO COURT. WE HAVE FURNISHED A LIST OF QUESTIONS AND ARE AWAITING A RESPONSE</p>	<p>COURTS DO NOT SUBSCRIBE TO THE “REALISTIC” AND “SUPPORTABLE” LOGIC. MWH REQUIRES A P6-TYPE SCHEDULE.</p>	
4	<p>CONTRACTS PERFORMED INDEPENDENTLY</p>	<p>WE DO NOT HAVE A CPM SCHEDULE (P6) TO FULLY UNDERSTAND THE IMPACT OF DELAYS ON OTHER CONTRACTORS, BUT BELIEVE THAT FOR THE EMBEDDED ITEMS FOR THE TURBINE, A SUBSTANTIAL IMPACT TO THE POWERHOUSE CONTRACTOR COULD OCCUR. SINCE MOST OF THE MANUFACTURING WILL OCCUR IN CHINA, NECESSITATING OCEAN SHIPMENTS AS WELL AS LAND TRANSPORT, MONITORING VERY CLOSELY WILL BE VERY IMPORTANT. FIT-UP IN THE FIELD</p>		<p>MWH WILL NOT BE ABLE TO OFFER AN OPINION UNTIL WE BETTER UNDERSTAND HOW THE EQUIPMENT WILL BE HANDLED AND REQUIRE SUPPORT DATA INCLUDING THE P6 CPM</p> <p>NALCOR ADVISES THE INTEGRATED PROJECT SCHEDULE WILL BE AVAILABLE END OF 2013. THUS, IT WILL PROBABLY NOT BE AVAILABLE BEFORE FINANCIAL CLOSE.</p> <p>NO OPINION WILL BE GIVEN BY MWH.</p>

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		WILL DEPEND ON THE WORK PLAN THAT WE CURRENTLY DO NOT HAVE FOR REVIEW		
5	CONTRACTOR'S AND OWNER'S RESPONSIBILITIES	IN SCOPE OF WORK, 2.7 DEALS WITH OWNER'S RESPONSIBILITY OF SUPPLY; EXHIBIT 11 ALSO IS A NALCOR SUPPLY REQUIREMENTS; EXHIBIT 9 IS ANDRITZ WORK AND MILESTONE SCHEDULE		SATISFACTORY
6	GUARANTEES, WARRANTIES	EXHIBIT 1, APPENDIX B DISCUSSES GUARANTEES; IN THE TECHNICAL SPECIFICATIONS, SECTION 2.3 GUARANTEES ARE DISCUSSED; ALSO IN THE TS UNDER 2.4 DISCUSS THE WARRANTIES	THE GUARANTEES AND WARRANTIES ARE TYPICAL FOR UNITS EXCEPT FOR THE DIMENSIONABLE STABILITY AND CRACKING ONES; IN OUR OPINION THESE ARE AN APPROPRIATE ADDITION TO THOSE WE NORMALLY REVIEW	SATISFACTORY
7	CHANGE ORDERS	CHANGE ORDERS ARE DISCUSSED IN SEVERAL LOCATIONS OF THE CONTRACT DOCUMENTS. IN EXHIBIT 2, SECTION 4 CHANGE IS DISCUSSED; IN SCOPE OF WORK, ARTICLE 3, AT 3.19 CHANGE ORDER IS	WE BELIEVE THAT IN THE DEFINITIONS, THE AREAS IN THE CONTRACT DOCUMENTS WHERE CHANGE ORDER IS DISCUSSED SHOULD BE LISTED FOR THE PARTIES' QUICK REFERENCE.	SATISFACTORY

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		DISCUSSED; AND IN EXHIBIT 3, SECTION 7, CHANGE ORDERS ARE DISCUSSED		
8	TRANSPORTATION PLAN	ARTICLE 2.2.6 DISCUSSES LOGISTICS, ARTICLE 7.7.3 AND 7.7.4 DISCUSS THE TRANSPORTATION REQUIREMENTS; AND APPENDIX A15, LOGISTICS AND TRANSPORTATION STRATEGY	WE REQUESTED CLARIFICATION ON ANY LOAD RESTRICTIONS TO THE BRIDGE DOWNSTREAM OF THE PROJECT AND RECEIVED IT. APPENDIX A15 INDICATES THAT THIS BRIDGE IS ADEQUATE. WHAT IS ITS LOAD RESTRICTION AND WHAT IS THE WEIGHT AND HEAVIEST PIECE OF EQUIPMENT THAT WILL BE TRANSPORTED OVER IT? NALCOR FURNISH ANSWER ON EQUIPMENT WEIGHTS.	NO FORMAL PLAN WAS GIVEN, BUT APPENDIX A15 SUFFICES FROM OUR PERSPECTIVE AT THIS TIME TO ALLOW US TO OPINE.  SATISFACTORY
9	LOGISTICS/STORAGE OF MATERIALS	THE TS IN 1.6.3 DISCUSSES SHIPPING; IN EXHIBIT 1, SECTION 7, COVERS STORAGE, PRESERVATION AND PREPARATION OF MATERIALS; ARTICLE 22, SITE & TRANSPORTATION ROUTE CONDITIONS	IT WOULD BE DESIRABLE TO HAVE REQUIRED A SYSTEM TO INVENTORY VIA ELECTRONIC MEANS ALL EQUIPMENT AND NOTE LOCATION WITHIN STORAGE BUILDING FOR EASE IN LOCATING DURING THE WORK.	SATISFACTORY

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
10	CONFORMS TO INDUSTRY STANDARDS	CONTRACT APPEARS TO CONFORM TO INDUSTRY STANDARDS AND IN SOME AREAS, IN OUR OPINION, EXCEEDS INDUSTRY STANDARDS		SATISFACTORY
11	COMPENSATION TERMS	EXHIBIT 2, SECTION 2 LISTS MILESTONE PAYMENTS; APPENDIX B TO EXHIBIT 2 IS THE MILESTONE PAYMENT SCHEDULE; EXHIBIT 2, SECTION 8 IS THE CONTRACT PRICE	TERMS APPEAR TO BE WELL EXPLAINED AS GIVEN IN APPENDIX B. PRICE IS COMPETITIVE BUT IS EXPECTED FROM PRODUCTS CURRENTLY BEING PRODUCED IN CHINA	SATISFACTORY
12	GUARANTEES & LIQUIDATED DAMAGES	EXHIBIT 2, SECTION 7 DISCUSSES LDS; EXHIBIT 1, APPENDIX B, DISCUSSES PERFORMANCE GUARANTEES; TD, SECTION 2.3 GUARANTEES	A SAMPLE COMPUTATION WOULD BE HELPFUL IN EXPLAINING HOW THE GUARANTEE PENALTIES AND LDS WILL BE APPLIED AND SHOWING HOW THE LIMITATIONS ON PENALTIES WILL BE USED TOO. WE PLAN TO INCLUDE SAMPLE COMPUTATIONS IN APPENDIX H.	NALCOR ADVISED THAT SAMPLE COMPUTATIONS WILL BE FURNISHED; THE COMPUTATIONS ARE INCLUDED IN APPENDIX H. REQUIRES FURTHER REVIEW.
13	PERFORMANCE BOND, LDS, BONUS, BUYDOWN/OUT	ARTICLE 35 DISCUSSES THE PERFORMANCE GUARANTEES; ARTICLE 36 DISCUSSES	PERFORMANCE BOND REQUIRED FOR 50% OF CONTRACT PRICE; A BUYOUT PROVISION IS	WE FIND THAT THESE CONDITIONS WOULD NOT NORMALLY ALIGN WITH NORMAL

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		<p>LIQUIDATED DAMAGES; ARTICLE 37 DISCUSSES PERFORMANCE TESTING. NOTE THAT SOME OF THE FORMULAS RELATE TO KILOWATT HOURS AND THAT THE FORMULAS FOR THE LDS ARE IN MEGAWATT HOURS — THEY SHOULD BE CONSISTENT</p>	<p>PROVIDED FOR A SITUATION WHERE PITCHING OCCURS AGAIN AFTER THE FIRST 40,000 HOUR PERIOD-TERMS ARE NOT DESCRIBED THAT REQUIRE ATTENTION. NO BONUS PROVISIONS ARE PROVIDED WITHIN THE CONTRACT WHICH IN SOME COURT SYSTEMS LEADS TO DIFFICULTIES WHEN LDS ARE BEING ASSESSED. NALCOR ADVISED THAT THIS WOULD APPLY TO CANADA EXPERIENCE. LC OF 15% OF CONTRACT PRICE IS REQUIRED.</p>	<p>INDUSTRY STANDARDS. HOWEVER, SINCE ANDRITZ ACCEPTED THEM, THEY WILL APPLY TO THIS CONTRACT SINCE THEY WERE CONSIDERED WHEN THE CONTRACT TERMS WERE NEGOTIATED.</p> <p>SATISFACTORY.</p>
14	COMPLIANCE CONTRACTS, PERMITS, PERFORMANCE	EXHIBIT 1, ITEM 13; EXHIBIT 6, ENVIRONMENTAL AND REGULATORY COMPLIANCE REQUIREMENTS; ARTICLE 15, HEALTH, SAFETY AND ENVIRONMENTAL PROTECTION	IT WOULD BE BEST TO PROVIDE A COMPLETE LIST TO THE CONTRACTOR FOR EASE OF REFERENCE, IN OUR OPINION; ON THE LIST THOSE PERMITS AND ITEMS REQUIRED FOR THE CONTRACTORS ATTENTION SHOULD BE HIGHLIGHTED	SATISFACTORY

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
15	GUARANTEE OF EQUIPMENT	AS DISCUSSED IN 12 ABOVE, GUARANTEES ARE GIVEN	<p>DURING OUR DISCUSSIONS IN ST. JOHN'S, THE LDS WERE NOT DESCRIBED TO SUFFICIENTLY ADDRESS MWH'S REMARKS HEREIN.</p> <p>WE WOULD LIKE TO REVIEW SAMPLE COMPUTATIONS FOR EACH OF THE GUARANTEES AS TO THE AMOUNTS BEING REASONABLE. NO OPINION CAN BE GIVEN AT THIS TIME. REQUIRES FURTHER REVIEW.</p>	APPEARS TO BE SATISFACTORY.
16	CONSTRUCTION SCHEDULE	MILESTONES ARE GIVEN IN EXHIBIT; WE REQUIRE A P6 CPM	WE REQUIRE A P6 CPM BEFORE WE CAN OPINE	NO OPINION CAN BE GIVEN AT THIS TIME. NALCOR ADVISES AN IPS WILL BE AVAILABLE END 2013.
17	SCHEDULE REVIEW; ADEQUATE PROVISIONS		WE REQUIRE A P6 CPM BEFORE WE CAN OPINE	NO OPINION CAN BE GIVEN AT THIS TIME
18	CRITICAL PATHS	WE REQUIRE A P6 CPM SCHEDULE		
19	LIKELIHOOD OF ACHIEVING MILESTONES	MILESTONES ARE GIVEN IN EXHIBIT 2, APPENDIX B.	<p>WE REQUIRE THE P6 CPM TO FURNISH AN OPINION</p> <p>WE DO NOT HAVE THE EXPERIENCE WITH THESE SUPPLIERS' USING PRINCIPALLY</p>	NO OPINION WILL BE GIVEN BY MWH.

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
			<p>CHINESE-MADE EQUIPMENT TO EXPRESS THIS OPINION ON THESE LARGE SIZE MACHINES; WE REQUIRE ADDITIONAL SUPPORT INFORMATION TO DEMONSTRATE THAT THE FABRICATION AND CASTING COMPANIES HAVE SIMILAR EXPERIENCE ON LARGE KAPLAN MACHINES AND THAT THIS IS NOT THEIR FIRST TIME IN MANUFACTURING 9M KAPLAN EQUIPMENT. NALCOR ADVISED THAT ANDRITZ HAS WORKED WITH ALL BEFORE AND HAS FINANCIAL INTEREST IN SOME OF THESE COMPANIES.</p>	

As noted previously in the discussion following Table 4-2, we have included a discussion of how we believe we can accommodate any items that remain "blank" or are as yet undesignated, that leave gaps in the table because we either do not have a contract to review, or that have not been addressed by Nalcor to allow the IE to inform the reader as to our current position regarding the review of CH0030 documents.



**4.5 STRAIT OF BELLE ISLE SUBMARINE CABLE DESIGN, SUPPLY, AND INSTALL CONTRACT – LC-SB-003**

Contract LC-SB-003 was awarded with a start date of December 12, 2012, and with a given substantial completion date of November 28, 2016. The early start of this contract was necessitated by the advantage Nalcor realized in favorable market conditions for the subsea cable as well as being able to schedule the manufacture of the cable early by reserving the manufacturing facilities in Japan to fabricate the cable and appurtenances associated with it. The contract amount is \$125,245,370.00. Nexans Cable is one of the three cable companies in the world that has the required experience in manufacturing and installing subsea cables, and coupled with Nippon High Voltage Cable Corp.'s experience in manufacturing subsea cables, has been critical to assuring a successful project in the opinion of Nalcor.

Listed below in Table 4-4 are the current findings and opinions of MWH pertaining to contract LC-SB-003

**Table 4-5**

**CONTRACT LC-SB-003**

**STRAIT OF BELLE ISLE SUBMARINE CABLE DESIGN, SUPPLY AND INSTALL**

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
1	QUALIFICATIONS OF CONTRACTOR	NEXANS CABLE IS A TIER ONE SUPPLIER AND INSTALLER OF SUBSEA CABLES		SATISFACTORY
2	QUALIFICATIONS OF SUBCONTRACTORS	ARTICLE 6 DISCUSSES SUB-CONTRACTORS; EXHIBIT 3 LISTS NIPPON HIGH VOLTAGE CABLE CORP AS THE MANUFACTURER OF THE CABLE.	DISCUSSION ON JAN.4, 2013, NOTED NIPPON AND NEXANS IN JV TO MANUFACTURE CABLE. AUDIT CONDUCTED APRIL-MAY, 2012 AND WAS SATISFACTORY	SATISFACTORY
3	COMPLETENESS	NO CONSTRUCTION DRAWINGS WERE INCLUDED WITH CONTRACT; EXHIBIT 5 REFERS TO LOCATION PLAN	NALCOR REPORTED THEY ISSUED PERFORMANCE SPECIFICATIONS. MWH REQUIRES DRAWING REVIEW TO VERIFY DESIGN;	SATISFACTORY

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		DRAWINGS INCLUDED IN EXHIBIT 6— COMPANY SUPPLIED DATA	CORRIDOR SELECTED BY MAY 2013. RECEIVED AUGUST 19, 2013.	
4	CONTRACTS PERFORMED INDEPENDENTLY	NEXANS IS EXPECTED TO WORK CLOSELY WITH NALCOR ON THIS PROJECT THAT IS MANAGED BY NALCOR. THEY ALSO INDICATE THEY WILL BE WORKING CLOSELY WITH NIPPON.	INTERFACE AT SHORE NEEDS TO BE DISCUSSED AND SHOWN ON CPM SCHEDULE	TENTATIVE: SATISFACTORY MWH WAITING TO RECEIVE CPM TO ALLOW OPINION TO BE EXPRESSED.
5	CONTRACTOR'S AND OWNER'S RESPONSIBILITIES	CONTRACTOR'S RESPONSIBILITIES ARE GIVEN IN ARTICLES 2, 3, AND 4 OF THE CONTRACT; NALCOR'S ARE COVERED UNDER ARTICLE 10		SATISFACTORY
6	GUARANTEES, WARRANTIES	ARTICLE 17, WARRANTIES, PROVIDES FOR 36 MONTHS; CAN BE EXTENDED 36 MONTHS IF FAILURE OR REPAIR REQUIRED OF PART OR SYSTEM.	GUARANTEES ARE NOT MENTIONED. NALCOR ADVISED THAT ONLY THE WARRANTY OF 36 MONTHS APPLIES WHICH EXCEEDS INDUSTRY STANDARDS BY AT LEAST 12 MONTHS	SATISFACTORY
7	CHANGE ORDERS	ARTICLE 26 PROVIDES FOR CHANGES ORDERED BY NALCOR; ARTICLE 39 COVERS DISPUTE RESOLUTION	EXHIBIT 4, SECTION 11 DISCUSSES CHANGE ORDERS	SATISFACTORY
8	TRANSPORTATION	NONE WAS	UNABLE TO OPINE	GOVERNMENT

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
	PLAN	EXPLICITLY REQUESTED OR FURNISHED BUT WOULD BE INCLUDED IN 0.5.2 EXECUTION PLAN AND METHOD STATEMENT, ITEMS (bb), (cc), (dd).	UNTIL THE PLAN IS PREPARED AND REVIEWED BY MWH. NALCOR ADVISED Q2 2015 AVAILABLE.	ADVISED MWH THAT NO OPINION IS REQUIRED.
9	LOGISTICS/STORAGE OF MATERIALS	EXHIBIT 1A SCOPE OF WORK, SECTION 7 CONTAINS REQUIREMENTS FOR STORAGE, PRESERVATION AND PREPARATION. IT WOULD ALSO BE EXPECTED TO BE FURNISHED UNDER 0.5.2 EXECUTION PLAN AND EXHIBIT 4, SECTION 14	MWH REQUIRES ADDITIONAL INFORMATION SINCE NO PARTICULAR INFORMATION IS FURNISHED. NALCOR ADVISED MWH THAT STORAGE WILL BE LOCATED AT THE PORTS. 10.1.9 LOGISTIC PRECEDENT'S LIST OF KEY ITEMS TO BE SHIPPED.	TENTATIVE: SATISFACTORY. WAITING TO RECEIVE THE EXECUTION PLAN. FURTHER DETAILS STORAGE – NOT INCLUDED.
10	CONFORMS TO INDUSTRY STANDARDS	CONTRACT APPEARS TO BE GENERALLY COMPLETE		SATISFACTORY
11	COMPENSATION TERMS	PART 2, EXHIBIT 2 COVERS COMPENSATION	THE BREAKDOWN OF ITEMS AND THE UNITS OF MEASURE APPEAR TO BE ADEQUATE FOR THIS CONTRACT	SATISFACTORY
12	GUARANTEES & LIQUIDATED DAMAGES	LDS ARE GIVEN IN EXHIBIT 2, SECTION 7; REQUIRE \$200,000/DAY FOR MISSING MILESTONE GIVEN IN SECTION 4 AND EXHIBIT 11-	NALCOR ADVISED THE BARGE STANDBY RATE OF \$200 K/DAY WAS USED FOR DELAYS. THE RATE WILL BE ASSESSED AS A PORTION OF A DAY TO THE NEAREST HOUR.	SATISFACTORY

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		MILESTONE SCHEDULE		
13	PERFORMANCE BOND, LDS, BONUS, BUYDOWN/OUT	PERFORMANCE BOND COVERED IN ARTICLE 7 AMOUNTING TO 50% OF THE CONTRACT PRICE; LC OF 15% OF CONTRACT PRICE	NO COMPANY GUARANTEE WAS REQUIRED	SATISFACTORY
14	COMPLIANCE CONTRACTS, PERMITS, PERFORMANCE	IN PART 1, SECTION 0.7, 10. ENVIRONMENTAL, THERE ARE REQUIREMENTS FOR A PROGRAM. IT IS NOT SPECIFIC WITH RESPECT TO PERMITS; PERMITS ARE TO BE OBTAINED BY NALCOR; OTHER PERMITS FOR THE WORK VESSEL WOULD NORMALLY BE THE RESPONSIBILITY OF NEXANS. EXHIBIT 1A, SCOPE OF WORK, SECTION 2.2, TABLE 2.2 LISTS THE CONSENTS, AUTHORIZATION AND PERMITS. THE TEXT FURTHER STATES THAT THE CONTRACTOR SHALL OBTAIN AND MAINTAIN ALL OTHER AUTHORIZATIONS, PERMITS, DISPENSATIONS, CONSENTS AND	SINCE NEXANS IS A FOREIGN CONTRACTOR, SOME OF THE RESPONSIBILITIES PLACED ON THEM MAY BE UNFAMILIAR TO THEM, LEAVING ROOM FOR AN INCOMPLETE RESPONSE AND DELAY OR OMISSION CAUSING A DELAY. NALCOR ADVISED ON AUGUST 19, NO ADDITIONAL PERMITS HAVE BEEN IDENTIFIED BY NEXANS.	GOVERNMENT ADVISES MWH DOES NOT HAVE TO OPINE ON PERMITS.

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		LICENSES, REQUIRED BY APPLICABLE LAWS TO ENABLE IT TO PERFORM THE WORK THAT CAN BE OBTAINED IN THE CONTRACTOR'S NAME.		
15	GUARANTEE OF EQUIPMENT	GUARANTEES ARE NOT FURNISHED; WARRANTY OF WORK AND MATERIAL FOR 36 MONTHS, AND AFTER REPAIR, ANOTHER 36 MONTHS OF SERVICE	WARRANTY PERIOD REVISED DOWN TO 36 MONTHS FROM ORIGINAL PROPOSED 60 MONTHS. NO GUARANTEES ARE PROVIDED. TYPICALLY, INDUSTRY REQUIRES ONLY ONE OR TWO YEARS. TESTING WILL OCCUR BEFORE AND AFTER PLACING THE ROCK FILL PROTECTION.	SATISFACTORY
16	CONSTRUCTION SCHEDULE	MILESTONES FURNISHED IN PART 2, EXHIBIT 11, MILESTONE SCHEDULE; P6 CPM SCHEDULE IS REQUIRED TO BE FURNISHED	MWH REQUIRES A P6 CPM SCHEDULE  MWH AWAITING TO REVIEW THE P6 CPM.	NO OPINION WILL BE GIVEN BY MWH.
17	SCHEDULE REVIEW; ADEQUATE PROVISIONS	MWH REQUIRES P6 CPM SCHEDULE TO REVIEW	MWH AWATING TO REVIEW THE P6 CPM	NO OPINION WILL BE GIVEN BY MWH.
18	CRITICAL PATHS	MWH REQUIRES P6 CPM SCHEDULE	MWH AWAITING TO REVIEW THE P6 CPM	NO OPINION WILL BE GIVEN BY MWH.
19	LIKELIHOOD OF ACHIEVING	NO OPINION CAN BE OFFERED	NO OPINION CAN BE GIVEN AT THIS	NO OPINION WILL BE GIVEN BY

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
	MILESTONES	AT THIS TIME	TIME	MWH.

**4.6 GENERATOR STEP-UP TRANSFORMERS – PH0014**

The work for Contract PH0014 consists of the design, fabrication, shop testing, packaging, delivery, and warranty for 175/230 MVA ONAN/ONAF generator step-up transformers complete with 315 kV lightning arresters and accessories and one spare generator step-up transformer.

**Table 4-6**

**CONTRACT PH0014 (RFP)**

**GENERATOR STEP-UP TRANSFORMERS**

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
1	QUALIFICATIONS OF CONTRACTOR	THE RFP WAS FURNISHED TO MWH. NO CONTRACT HAS BEEN SIGNED; AWARD WAS TO OCCUR JUNE 23, 2013.	WHY HAS THE CONTRACT NOT BEEN MADE AVAILABLE TO MWH?	NO OPINION CAN PRESENTLY BE GIVEN BY MWH.
2	QUALIFICATIONS OF SUBCONTRACTORS	NOT KNOWN	REQUIRES CONTRACT.	
3	COMPLETENESS	THE RFP APPEARS TO BE GENERALLY COMPLETE.	PLEASE FURNISH CONTRACT.	SATISFACTORY FOR THE RFP
4	CONTRACTS PERFORMED INDEPENDENTLY		PLEASE FURNISH CONTRACT.	
5	CONTRACTOR'S AND OWNER'S RESPONSIBILITIES	THE RESPONSIBILITIES APPEAR TO BE ADEQUATELY DEFINED IN THE RFP	PLEASE FURNISH CONTRACT.	SATISFACTORY FOR THE RFP
6	GUARANTEES, WARRANTIES		PLEASE FURNISH CONTRACT.	
7	CHANGE ORDERS	EXHIBIT 3- APPENDIX A, CHANGE	PLEASE FURNISH CONTRACT.	SATISFACTORY FOR THE RFP

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		REQUEST. CONDITIONS SEEM TO BE COMPLETE AS GIVEN IN THE RFP		
8	TRANSPORTATION PLAN	EXHIBIT 4 LISTS IN THE TABLE, ITEM A11, THE REQUIREMENTS FOR THE TRANSPORTATION LOGISTICS AND STRATEGY. NO INFORMATION AVAILABLE BECAUSE THE IE LACKS THE CONTRACT	NO OPINION CAN PRESENTLY BE GIVEN. <b>PLEASE FURNISH CONTRACT.</b>	
9	LOGISTICS/STORAGE OF MATERIALS	REQUIREMENTS WOULD BE GIVEN IN THE REQUIRED PLAN UNDER A11	NO OPINION CAN PRESENTLY BE GIVEN. <b>PLEASE FURNISH CONTRACT.</b>	
10	CONFORMS TO INDUSTRY STANDARDS	THE RFP APPEARS TO PROVIDE FOR THE CONTRACT CONDITIONS TO CONFORM TO INDUSTRY STANDARDS. THE TECHNICAL PROVISIONS CITE INDUSTRY STANDARDS.	<b>PLEASE FURNISH CONTRACT.</b>	SATISFACTORY FOR THE RFP
11	COMPENSATION TERMS	MILESTONE AND PAYMENT TERMS ARE GIVEN TO BE USED IN THE CONTRACT. LUMP SUM AND UNIT PRICES ARE REQUIRED	<b>PLEASE FURNISH CONTRACT.</b>	SATISFACTORY FOR THE RFP
12	GUARANTEES & LIQUIDATED DAMAGES	EXHIBIT 2, COMPENSATION, SECTION 9.0 LIQUIDATED DAMAGES.	LDS APPEAR TO BE REASONABLE AS GIVEN IN THE RFP TERMS. MWH WOULD LIKE	<b>SATISFACTORY, BASED ON THE LDS GIVEN IN THE RFP AND THAT THE</b>

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		<p>THIS SECTION OF THE EXHIBIT LISTS THE LDS FOR THE CONTRACT. ENGINEERING DRAWINGS-- \$15,000/DAY LATE EXHIBIT 9 DELIVER DATE MILESTONE SCHEDULE ITEMS: \$10,000 PER UNIT TEST RESULTS: ONE KW INCREASE IN NO-LOAD LOSSES-- \$10,200/KW; ONE KW INCREASE IN ON-LOAD LOSSES-- \$7,300/KW; ONE KW INCREASE IN AUXILIARIES CONSUMPTION--- \$7,300/KW; ONE DEGREE C RISE IN WINDING TEMPERATURE MORE THAN 65C— REJECT TRANSFORMER OR APPLY PERCENTAGE REDUCTION IN ONAN RATING FORMULA. LDS LIMITED TO 10 % OF CONTRACT PRICE THE PERFORMANCE GUARANTEES ARE GIVEN IN ARTICLE 36 THAT PERTAIN TO THE ABOVE ITEMS LISTED FOR LDS. ARTICLE 37, LIQUIDATED</p>	<p>NALCOR TO FURNISH THE SUPPORT INFORMATION AS TO HOW THE LD VALUE (S) WAS DETERMINED TO SUPPORT THE VALUE SELECTED.</p> <p>GUARANTEE REQUIREMENTS FOLLOW IN GENERAL THE INDUSTRY STANDARDS.</p> <p>PLEASE FURNISH CONTRACT.</p>	<p>SUPPORT INFORMATION TO BE FURNISHED BY NALCOR AS TO THE AMOUNT OF THE LD IS REASONABLE.</p>



ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		<p>DAMAGES DISCUSSES THE LDS. EVALUATION OF LOSSES IS GIVEN IN THE TECHNICAL SPECIFICATIONS, PAGE 12, SECTION 1.9.1 USING A TOTAL LIFE CYCLE COST FORMULA BASED ON 230 MVA REQUIRED RATING.</p>		
13	<p>PERFORMANCE BOND, LDS, BONUS, BUYDOWN/OUT</p>	<p>ARTICLE 6, PERFORMANCE SECURITY LISTS THE REQUIREMENTS LETTER OF CREDIT: -15% OF CONTRACT PRICE -5% DURING WARRANTY PERIOD PERFORMANCE BOND OF 50% OF CONTRACT PRICE; LABOR AND MATERIAL PAYMENT BOND OF 50% OF THE CONTRACT PRICE PARENTIAL GUARANTEE MAY BE REQUIRED</p>	<p>THE IE WILL NOT GIVE AN OPINION UNTIL IT VIEWS THE CONTRACT AND THE ACTUAL TERMS AGREED TO BETWEEN THE CONTRACTOR AND NALCOR.</p>	
14	<p>COMPLIANCE CONTRACTS, PERMITS, PERFORMANCE</p>	<p>EXHIBIT 12 PERTAINS TO SITE CONDITION; NO MENTION OF ENVIRONMENTAL MATTERS IS DISCUSSED; NO MENTION OF HEALTH AND SAFETY CONDITIONS AT</p>	<p>NO WHERE IN THE EXECUTION PLAN IS THERE MENTION OF ADHERING TO NALCOR ENVIRONMENTAL PRACTICES OR RISK ISSUES AND ACKNOWLEDGEMENT THAT THE CONTRACTOR WILL</p>	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		THE SITE OR IN THE CONTRACTOR'S MANUFACTURING FACILITIES.	COMPLY WITH THESE GUIDELINES/PRE-SCRIBED TERMS AND CONDITIONS. ACKNOWLEDGEMENT THAT THE CONTRACTOR, WHILE AT SITE WILL ADHERE TO PRUDENT PRACTICE REGARDING THESE MATTERS SHOULD BE CONSIDERED. HEALTH AND SAFETY IS PARAMOUNT TO NALCOR	
15	GUARANTEE OF EQUIPMENT	GUARANTEES GIVEN IN ARTICLE 36; WARRANTEE OF 60 MONTHS GIVEN IN ARTICLE 15	THE GUARANTEES SEEM REASONABLE AS GENERALLY APPLIED BY INDUSTRY; THE WARRANTEE PERIOD EXCEEDS THE NORMAL INDUSTRY STANDARDS OF ABOUT THREE YEARS	
16	CONSTRUCTION SCHEDULE	MWH IS ONLY ABLE TO REVIEW A LIMITED MILESTONE SCHEDULE.	NO OPINION WILL BE GIVEN AT THIS TIME.  NALCOR TO FURNISH CONTRACT.	
17	SCHEDULE REVIEW; ADEQUATE PROVISIONS	NO CRITICAL PATH SCHEDULE WAS PROVIDED. SEE ITEM 18, DIRECTLY BELOW	NO OPINION WILL BE GIVEN AT THIS TIME.  NALCOR TO FURNISH CONTRACT.	
18	CRITICAL PATHS	NO CRITICAL PATH SCHEDULE INFORMATION WAS PROVIDED OTHER THAN	NO OPINION WILL BE GIVEN BY MWH UNTIL WE REVIEW THE CONTRACT AND THE ACTUAL,	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		<p>MILESTONE DATES. MWH DOES NOT HAVE INFORMATION AS TO THE ACTUAL CONTRACT NEGOTIATED REQUIREMENTS. DG3 AND INTEGRATED PROJECT SCHEDULE INFORMATION MAY NEED TO BE USED.</p>	<p>AGREED TO MILESTONE DATES. THE CPM MAY BE AVAILABLE SINCE THE CONTRACT HAS BEEN AWARDED, BUT NOT FURNISHED TO MWH.</p> <p>NALCOR TO FURNISH CONTRACT.</p>	
19	<p>LIKELIHOOD OF ACHIEVING MILESTONES</p>	<p>EXHIBIT 9 LISTS THE MILESTONE SCHEDULE FOR THIS WORK. WORK IS TO BE COMPLETED BEFORE JANUARY 13, 2017. MWH WOULD NEED TO USE AS THE BASIS FOR ANY OPINION, NOT ONLY THE CONTRACT, BUT THE INTEGRATED PROJECT SCHEDULE TO OPINE. THERE SEEMS TO BE SUFFICIENT TIME TO MANUFACTURE AND DELIVER THESE LARGE TRANSFORMERS THAT USUALLY TAKE A YEAR OR MORE TO DESIGN AND FABRICATE.</p>	<p>NALCOR TO FURNISH CONTRACT.</p>	
20	<p>PERFORMANCE TEST CRITERIA</p>	<p>GIVEN IN TECHNICAL SPECIFICATION, PAGE 39.</p>	<p>NALCOR TO FURNISH CONTRACT.</p>	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
20-1	REASONABLENESS OF THE CRITERIA	TESTING FOLLOWS INDUSTRY STANDARDS GIVEN IN THE CSA, ANSI, IEEE, AND IEC STANDARDS	NALCOR TO FURNISH CONTRACT.	SATISFACTORY
20-2	ADEQUACY OF TEST DURATION	FOLLOWING THE STANDARDS, THEY WOULD NEED TO BE JUDGED SATISFACTORY, IF STRICTLY FOLLOWED	NALCOR TO FURNISH CONTRACT.	SATISFACTORY, ASSUMING THE STANDARDS WOULD BE FOLLOWED.
20-3	ABILITY TO EXTRAPOLATE RESULTS	EXTRAPOLATION WOULD BE GENERALLY POSSIBLE FOLLOWING STANDARDS	NALCOR TO FURNISH CONTRACT.	SATISFACTORY, ASSUMING THAT THE CONTRACT WILL CALL OUT MORE DETAILS AND THAT IT WILL ADHERE TO THE RFP REQUIREMENTS.
20-4	CONFORMANCE TO CODES	THE RFP REQUIRES THE STANDARD INDUSTRY CODES AND REGULATIONS WILL BE FOLLOWED	NALCOR TO FURNISH CONTRACT.	THE IE ASSUMES THE CONFORMANCE TO CODES WILL BE FOLLOWED; SATISFACTORY
20-5	ABILITY TO ACHIEVE CONTRACT CONDITIONS	IT IS MWH'S OPINION THAT CONTRACT CONDITIONS CAN BE ACHIEVED ASSUMING THAT NALCOR CONTINUES TO MONITOR AND MANGE THIS CONTRACT	NALCOR TO FURNISH CONTRACT.	SATISFACTORY

CONTRACT NUMBER: PH0014

CONTRACT NAME: SUPPLY OF GENERATOR STEP-UP TRANSFORMERS

**PRINCIPAL CONTRACTOR: UNKNOWN**

**CONTRACT AMOUNT: UNKNOWN**

**CONTRACT START DATE: JUNE 23, 2013 [WHAT IS THE NEW DATE?]**

**CONTRACT COMPLETION DATE: JANUARY 13, 2017**

**RFP ISSUE DATE: MARCH 11, 2013**

**RFP CLOSING DATE: APRIL 23, 2013**

**4.7 CONVERTERS & CABLE TRANSITION COMPOUNDS – CD0501 (RFP)**

The work under this RFP consists of the study, design, factory testing, supply, construction, installation, site testing, and commissioning of the HVdc link stations at Muskrat Falls and Soldiers Pond Converter Stations, and Forteau Point and Shoal Cove Cable Transition compounds. This work further includes the following components:

- Completely operational ±350 kV, 900 MW bipolar HVdc system, including the necessary communications interface equipment and the associated HVac equipment;
- Overall project management; studies; design; engineering; training; manufacture; factory testing; supply; delivery to site, loading and unloading; storing; preserving; handling and moving into final position; installation; testing; commissioning; and placing into successful commercial operation and warranty;
- Civil works, including buildings and foundations;
- Two HVdc converter stations based on Line Commutated Conversion technology; one at Muskrat Falls next to the power station and the other at Soldiers Pond interconnecting with the Newfoundland power network; and
- Two Cable transition compounds; one at Forteau Point and the other at Shoal Cove.

**Table 4-7**

**CONTRACT CD0501**

**CONVERTERS & CABLE TRANSITION COMPOUNDS**

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
1	QUALIFICATIONS OF CONTRACTOR			

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
2	QUALIFICATIONS OF SUBCONTRACTORS			
3	COMPLETENESS			
4	CONTRACTS PERFORMED INDEPENDENTLY			
5	CONTRACTOR'S AND OWNER'S RESPONSIBILITIES			
6	GUARANTEES, WARRANTIES			
7	CHANGE ORDERS			
8	TRANSPORTATION PLAN			
9	LOGISTICS/STORAGE OF MATERIALS			
10	CONFORMS TO INDUSTRY STANDARDS			
11	COMPENSATION TERMS			
12	GUARANTEES & LIQUIDATED DAMAGES			
13	PERFORMANCE BOND, LDS, BONUS, BUYDOWN/OUT			
14	COMPLIANCE CONTRACTS, PERMITS, PERFORMANCE			
15	GUARANTEE OF EQUIPMENT			
16	CONSTRUCTION SCHEDULE			
17	SCHEDULE REVIEW; ADEQUATE PROVISIONS			
18	CRITICAL PATHS			
19	LIKELIHOOD OF ACHIEVING MILESTONES			

CONTRACT NUMBER: CD0501

CONTRACT NAME: CONVERTERS AND CABLE  
TRANSITION COMPOUNDS

**PRINCIPAL CONTRACTOR:**

**CONTRACT AMOUNT:**

**CONTRACT START DATE:** **CONTRACT COMPLETION DATE:**

**No information is currently available; expected:** **October 2013**

**4.8 350 KV HVdc TRANSMISSION LINE – SECTION 1 – CT0327**

Table 4-8

**CONTRACT CT0327**

**350 kV HVdc TRANSMISSION LINE – SECTION 1**

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
1	QUALIFICATIONS OF CONTRACTOR			
2	QUALIFICATIONS OF SUBCONTRACTORS			
3	COMPLETENESS			
4	CONTRACTS PERFORMED INDEPENDENTLY			
5	CONTRACTOR'S AND OWNER'S RESPONSIBILITIES			
6	GUARANTEES, WARRANTIES			
7	CHANGE ORDERS			
8	TRANSPORTATION PLAN			
9	LOGISTICS/STORAGE OF MATERIALS			
10	CONFORMS TO INDUSTRY STANDARDS			
11	COMPENSATION TERMS			
12	GUARANTEES & LIQUIDATED			

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
	DAMAGES			
13	PERFORMANCE BOND, LDS, BONUS, BUYDOWN/OUT			
14	COMPLIANCE CONTRACTS, PERMITS, PERFORMANCE			
15	GUARANTEE OF EQUIPMENT			
16	CONSTRUCTION SCHEDULE			
17	SCHEDULE REVIEW; ADEQUATE PROVISIONS			
18	CRITICAL PATHS			
19	LIKELIHOOD OF ACHIEVING MILESTONES			

**CONTRACT NUMBER: CT0327**

**CONTRACT NAME: 350 Kv HVdc Transmission  
Line – Section 1**

**PRINCIPAL CONTRACTOR:**

**CONTRACT AMOUNT:**

**CONTRACT START DATE: CONTRACT COMPLETION DATE:**

**No information is currently available; expected: October 2013**

**4.9 350 kV HVdc TRANSMISSION LINE – SECTION 2 – CT0346**

Table 4-9

**CONTRACT CT0346**

**350 KV HVdc TRANSMISSION LINE – SECTION 2**

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
1	QUALIFICATIONS OF CONTRACTOR			



ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
2	QUALIFICATIONS OF SUBCONTRACTORS			
3	COMPLETENESS			
4	CONTRACTS PERFORMED INDEPENDENTLY			
5	CONTRACTOR'S AND OWNER'S RESPONSIBILITIES			
6	GUARANTEES, WARRANTIES			
7	CHANGE ORDERS			
8	TRANSPORTATION PLAN			
9	LOGISTICS/STORAGE OF MATERIALS			
10	CONFORMS TO INDUSTRY STANDARDS			
11	COMPENSATION TERMS			
12	GUARANTEES & LIQUIDATED DAMAGES			
13	PERFORMANCE BOND, LDS, BONUS, BUYDOWN/OUT			
14	COMPLIANCE CONTRACTS, PERMITS, PERFORMANCE			
15	GUARANTEE OF EQUIPMENT			
16	CONSTRUCTION SCHEDULE			
17	SCHEDULE REVIEW; ADEQUATE PROVISIONS			
18	CRITICAL PATHS			
19	LIKELIHOOD OF ACHIEVING MILESTONES			

CONTRACT NUMBER: CT0346

CONTRACT NAME: 350 kV HVdc Transmission Line – Section 2

**PRINCIPAL CONTRACTOR:**

**CONTRACT AMOUNT:**

**CONTRACT START DATE:** **CONTRACT COMPLETION DATE:**

**No information is currently available; expected: September 2014—AFTER FINANCIAL CLOSE**

**4.10 GENERATOR CIRCUIT BREAKERS – PH0016 (RFP)**

The work under this RFP consists of the design, fabrication, shop testing, packaging, and supply of four 24 kV, 12,000 A, 80 KA interrupting capacity generator circuit breakers complete with the control panels for each of the LC[CBM1] turbine/generator units. At this time, MWH has only had the opportunity to review the RFP that was issued for this work. Table 4-9 summarizes the information contained in the RFP.

Table 4-10

**CONTRACT PH0016 (RFP)**

**SUPPLY OF GENERATOR CIRCUIT BREAKERS**

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
1	QUALIFICATIONS OF CONTRACTOR	AUGUST 31, 2013 IS THE DATE OF THE CONTRACT AWARD. MWH WAS FURNISHED THE RFP	NALCOR TO FURNISH CONTRACT TO MWH.	NO OPINION CAN BE FURNISHED AT THIS TIME
2	QUALIFICATIONS OF SUBCONTRACTORS	NOT AVAILABLE YET	NALCOR TO FURNISH CONTRACT TO MWH.	
3	COMPLETENESS	RFP APPEARS TO BE COMPLETE	MWH REQUIRED NALCOR TO FURNISH THE CONTRACT FOR REVIEW.	
4	CONTRACTS PERFORMED INDEPENDENTLY	THIS CONTRACT IS INDEPENDENT OF OTHERS. COMMISSIONING	THE REVIEW OF THE CPM SCHEDULE IS NECESSARY.	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		OF THE GENERATOR CIRCUIT BREAKERS IS A KEY MILESTONE FOR THE PROJECT		
5	CONTRACTOR'S AND OWNER'S RESPONSIBILITIES	RESPONSIBILITIES OF THE OWNER AND CONTRACTOR ARE WELL DEFINED	NALCOR TO FURNISH CONTRACT TO MWH.	SATISFACTORY
6	GUARANTEES, WARRANTIES	ARTICLE 15 WARRANTY LISTS THE REQUIREMENTS. A 36 MONTH WARRANTY IS REQUESTED. ARTICLE 6 NOTES A PARENTAL GUARANTEE IS REQUIRED.	NALCOR IS REQUESTED TO FURNISH THE CONTRACT TO MWH FOR REVIEW	
7	CHANGE ORDERS	ARTICLE 24 PROVIDES FOR A CHANGE ORDER TO BE ISSUED BY NALCOR. TERMS ARE THE NORMAL ONES USED IN NALCOR'S OTHER CONTRACTS	NALCOR TO FURNISH CONTRACT.	SATISFACTORY
8	TRANSPORTATION PLAN	PART 1, APPENDIX 15 A TRANSPORTATION STRATEGY (A PLAN) IS REQUIRED TO BE PROVIDED	THE TRANSPORTATION PLAN MAY BE AVAILABLE BEFORE THE FINAL REPORT IS SUBMITTED.  NALCOR TO FURNISH CONTRACT.	NO OPINION CAN BE GIVEN AT THIS TIME
9	LOGISTICS/STORAGE OF MATERIALS	APPENDIX 15 LISTS THE REQUIREMENTS	NALCOR TO FURNISH CONTRACT.	ASSUMING THAT AN APPROVED

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
				STRATEGY IS PRESENTED AND FOLLOWS THE RFP REQUIREMENTS, THIS ITEM WILL BE SATISFACTORY.
10	CONFORMS TO INDUSTRY STANDARDS	ANSI, CSA, IED, IEEE, ISA, AND NEMA AMONG OTHER CODES AND STANDARDS ARE REQUIRED AS GIVEN IN THE TECHNICAL SPECIFICATION AT PAGE 6 OF THE RFP	NALCOR TO FURNISH CONTRACT.	SATISFACTORY
11	COMPENSATION TERMS	EXHIBIT 2 COMPENSATION THIS EXHIBIT LISTS THE GENERAL TERMS OF PAYMENTS TO THE CONTRACTOR. LIMITED DETAILS ARE SUPPLIED IN THE RFP.	INSUFFICIENT INFORMATION IS CURRENTLY KNOWN TO FORM AN OPINION. MWH REQUIRES THE CONTRACT TO REVIEW.	
12	GUARANTEES & LIQUIDATED DAMAGES	EXHIBIT 2, SECTION 9 LIQUIDATED DAMAGES. NO LDS ARE GIVEN: 'NOT USED' A PARENTAL GUARANTEE IS REQUIRED UNDER ARTICLE 6.	NALCOR IS REQUESTED TO PROVIDE A LIST OF THE GUARANTEES TO BE FURNISHED. NALCOR IS REQUESTED TO PROVIDE INFORMATION TO THE IE PERTAINING TO THE REASON NOT TO IMPOSE LDS ON THE CONTRACTOR.	
13	PERFORMANCE BOND, LDS, BONUS, BUYDOWN/OUT	ARTICLE 6 PERFORMANCE SECURITY	NALCOR IS REQUESTED TO PROVIDE THE	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		<p>A LC FOR 15% OF THE CONTRACT PRICE UNTIL FINAL COMPLETION MAY BE REQUIRED, AND THEREAFTER, FOR 5% OF THE CONTRACT PRICE DURING THE WARRANTY PERIOD.</p> <p>A PARENTAL GUARANTEE IS REQUIRED.</p> <p>A PERFORMANCE BOND FOR 50% OF THE CONTRACT AMOUNT AND A PAYMENT BOND FOR 50% OF THE CONTRACT AMOUNT IS REQUIRED IN THE RFP. COVERS 3YEARS OF DEFICIENCIES.</p>	<p>CONTRACT TO MWH FOR REVIEW.</p>	
14	COMPLIANCE CONTRACTS, PERMITS, PERFORMANCE	<p>NO MENTION OF THIS SUBJECT IS GIVEN IN THE RFP.</p> <p>MWH REQUESTS NALCOR CONSIDER A DISCUSSION PERTAINING TO ADHERENCE TO THE ENVIRONMENTAL PERMITS</p>		NO OPINION NECESSARY BY IE.
15	GUARANTEE OF EQUIPMENT	<p>A PARENTAL GUARANTEE WILL BE PROVIDED</p>	<p>NALCOR IS REQUESTED TO FURNISH OTHER GUARANTEES REQUIRED</p>	
16	CONSTRUCTION SCHEDULE	<p>EXHIBIT 9, SCHEDULE.</p>	<p>NALCOR IS REQUESTED TO</p>	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		FOUR MILESTONES ARE GIVEN IN ADDITION TO THE CONTRACT AWARD DATE; DELIVERY OF THE GENERATOR CIRCUIT BREAKERS FOR EACH OF THE FOUR UNITS	SUPPLY MORE DETAILS OF THE SCHEDULE FOR MWH TO FORM OPINIONS	
17	SCHEDULE REVIEW; ADEQUATE PROVISIONS	ONLY EXHIBIT 9 LISTS DATES. THERE IS NOT SUFFICIENT INFORMATION AVAILABLE AT THIS TIME TO REVIEW AND FORM OPINIONS	NALCOR IS REQUESTED TO SUPPLY MORE DETAILS TO MWH CONCERNING THE SCHEDULE.	
18	CRITICAL PATHS	NO CRITICAL PATH SCHEDULE IS INCLUDED/ FURNISHED IN THE RFP. POSSIBLY, THE DG3 SCHEDULE AND THE INTEGRATED SCHEDULE WILL NEED TO BE USED TO FORM AN OPINION, SINCE THE IE LACKS SPECIFIC DETAILS	CRITICAL PATH P6 FORM SHOULD BE FURNISHED. CPM TO BE FURNISHED.	
19	LIKELIHOOD OF ACHIEVING MILESTONES	INSUFFICIENT INFORMATION IS CURRENTLY AVAILABLE TO FORM AN OPINION BASED ON AN RFP. THE ONLY SCHEDULE AVAILABLE IS THE NALCOR CPM INTEGRATED SCHEDULE.		NO OPINION WILL BE GIVEN UNLESS FURTHER INFORMATION IS KNOWN
20	PERFORMANCE	SHOP TESTING	NALCOR TO	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
	TEST CRITERIA	AND INSPECTION IS GIVEN IN SECTION 5 OF THE TECHNICAL EQUIPMENT SPECIFICATIONS FOR THE ROUTINE AND ACCEPTANCE TESTS SPECIFIED. TESTING WOULD FOLLOW CSA, IEEE, AND IEC STANDARDS	FURNISH CONTRACT.	
20-1	REASONABLENESS OF THE CRITERIA	IN GENERAL, THE IE DID NOT SEE ANY UNREASONABLE REQUIREMENTS IMPOSED ON THE CONTRACTOR IN THE SPECIFICATIONS OF THE RFP	NALCOR TO FURNISH CONTRACT.	SATISFACTORY
20-2	ADEQUACY OF TEST DURATION	DURATION OF TEST FOLLOWS IEC OR ANSI, OR OTHER CODES	NALCOR TO FURNISH CONTRACT.	SATISFACTORY
20-3	ABILITY TO EXTRAPOLATE RESULTS	ASSUMING THAT THE TESTING FOLLOWS IEC OR ANSI, EXTRAPOLATION OF THE RESULTS SHOULD BE EXPECTED IF IT IS WITHIN NORMAL LIMITS	NALCOR TO FURNISH CONTRACT.	WE EXPECT THIS TO BE SATISFACTORY.
20-4	CONFORMANCE TO CODE	EQUIPMENT IS REQUIRED TO CONFORM TO CODES	NALCOR TO FURNISH CONTRACT.	SATISFACTORY
20-5	ABILITY TO ACHIEVE CONTRACT CONDITIONS	ASSUMING THE EQUIPMENT FOLLOWS THE SPECIFICATIONS, IT SHOULD ACHIEVE	NALCOR TO FURNISH CONTRACT.	SATISFACTORY

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		CONTRACT CONDITIONS		

**CONTRACT NUMBER: RFP PH0016      CONTRACT NAME: SUPPLY OF GENERATOR  
CIRCUIT BREAKERS**

**PRINCIPAL CONTRACTOR: UNKNOWN**

**CONTRACT AMOUNT: UNKNOWN**

**CONTRACT START DATE: AUGUST 31, 2013 AS GIVEN IN RFP**

**CONTRACT COMPLETION DATE: NO COMPLETION DATE, PER SE, IS GIVEN, BUT FOR  
THE DELIVERY OF UNIT NO. 4 CIRCUIT BREAKER IS SCHEDULED FOR JULY 1, 2017.**

**4.11 CONSTRUCTION OF AC SUBSTATIONS – CD0502**

The RFP for Contract CD0502 was issued on July 16, 2013, and is scheduled to be closed on October 10, 2013. Contract award is expected on December 15, 2013, and the contract forecasted completion date is November 30, 2016. The value of the contract has not been furnished to MWH, since it combines contracts and it is now an EPC contract. Table 4-11 summarizes the information known to date and was taken from the RFP.

**Table 4-11**

**CONTRACT (RFP) CD0502**

**CONSTRUCTION OF AC SUBSTATIONS**

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
1	QUALIFICATIONS OF CONTRACTOR	RFP; NOT KNOWN UNTIL AFTER SELECTION IN MARCH 24, 2014	ONLY TIER ONE CONTRACTOR'S WILL BE ALLOWED TO PROPOSE.  NALCOR IS REQUIRED TO FURNISH CONTRACT.	NO OPINION WILL BE ABLE TO BE GIVEN BY IE
2	QUALIFICATIONS OF SUBCONTRACTORS	RFP; NOT KNOWN WHO SUB-CONTRACTORS WILL BE	NALCOR IS REQUIRED TO FURNISH CONTRACT.	NO OPINION WILL BE ABLE TO BE GIVEN BY IE.



ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
3	COMPLETENESS	THE RFP CONTAINS MUCH INFORMATION; IT APPEARS TO BE GENERALLY COMPLETE. HOWEVER, NALCOR REVISES THE RFPs DURING THE BIDDING PROCESS TO PICK-UP MISSING OR CHANGED REQUIREMENTS. FINANCIAL DATA IS MISSING; NO PERCENTAGES GIVEN FOR PERFORMANCE BONDS.	MWH REQUIRES THE CONTRACT. WE ANTICIPATE THAT THE CONTRACT WILL BE COMPLETE; IT IS AN EPC CONTRACT THAT REQUIRES PERFORMING OPERATING SYSTEMS; THUS, THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING SYSTEMS COMPLETE.  NALCOR TO FURNISH CONTRACT.	
4	CONTRACTS PERFORMED INDEPENDENTLY	NO CPM SCHEDULE IS FURNISHED TO DETERMINE HOW THIS CONTRACT INTERFACES WITH OTHERS. WE WILL NEED TO USE THE NALCOR DG3 CPM SCHEDULE TO COMMENT. WE BELIEVE THAT THE NALCOR TEAM HAS WORKED THIS OUT SATISFACTORILY.	NALCOR IS REQUIRED TO FURNISH CONTRACT.	
5	CONTRACTOR'S AND OWNER'S RESPONSIBILITIES	RFP; APPEARS TO DEFINE RESPONSIBILITIES OF THE CONTRACTOR AND THE OWNER. WE EXPECT THE CONTRACT TO FIRM UP POINTS AND ALLOW THE IE TO COMMENT.	NALCOR IS REQUIRED TO FURNISH CONTRACT.	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
6	GUARANTEES, WARRANTIES	<p>GUARANTEE(S) ARE REQUIRED TO BE LISTED ON SUBMITTAL FORMS FOR COMPONENTS IN APPENDIX A1. AS PART OF THE BID SUBMITTAL. ARTICLE 17 WARRANTIES: 3 YEARS FROM THE DATE OF FINAL COMPLETION; NALCOR RECOGNIZES THAT SOME ITEMS CANNOT ACHIEVE A 50-YEAR DESIGN LIFE OR LONG WARRANTY AND WILL ACCEPT REASONABLE PROPOSALS THAT WILL BE CONSIDERED AS PART OF THE BID PRICE AND EVALUATION. ADDITIONALLY, THE CONTRACTOR IS REQUIRED UNDER ARTICLE 37 TO WARRANT THE ITEMS LISTED UNDER 37.1 INCLUDING SKILLS, PERSONNEL, GOOD QUALITY, AND IN ACCORDANCE WITH APPLICABLE LAWS</p>	<p>SINCE THE CONTRACT WILL BE AWARDED AFTER THE IE SUBMITS THE FINAL REPORT, AN OPINION BASED ON THE ACTUAL CONTRACT WILL NOT BE ABLE TO BE FURNISHED. MWH BELIEVES THAT WITH A WARRANTY PERIOD OF THREE YEARS AND THE REQUIREMENT FOR A LIFE EXPECTANCY OF 50 YEARS ALSO REQUIRED, A REASONABLE EXPECTATION AS TO QUALITY EQUIPMENT AND CONSTRUCTIONS CAN BE EXPECTED.</p>	
7	CHANGE ORDERS	ARTICLE 26 PROVIDES FOR CHANGES IN THE WORK.		SATISFACTORY
8	TRANSPORTATION PLAN	A TRANSPORTATION	SINCE AWARD WILL NOT BE	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		PLAN IS REQUIRED AND LOCATIONS WHERE TO SHIP AND HOW TO SHIP ARE GIVEN BY NALCOR IN THE RFP DOCUMENTS	MADE UNTIL AFTER THE SUBMITTAL OF THE IE REPORT, AND WITH THE REQUIREMENT THAT THE PLAN WOULD BE SUBMITTED AFTER THAT TIME, NO INFORMATION WILL BE AVAILABLE BEYOND WHAT IS NOW KNOWN.	
9	LOGISTICS/STORAGE OF MATERIALS	MATERIALS WILL BE STORED IN TWO WAREHOUSES PROVIDED BY NALCOR OR BY CONTRACTOR	SINCE INFORMATION AS TO THE PLAN FOR STORAGE OF THE MATERIALS WILL NOT BE KNOWN, NO OPINION WILL BE GIVEN.	
10	CONFORMS TO INDUSTRY STANDARDS	RFP; NALCOR EXPECTS INDUSTRY STANDARDS WILL BE MET AS REQUIRED BY THE RFP AND WILL BE THE SAME IN THE CONTRACT AS RECORDED AND REQUIRED BY THE RFP	MWH'S OPINION IS GIVEN ON THE BASIS THAT THE CONDITIONS OF THE RFP WILL BE IN THE CONTRACT AND ASSUMES THAT NO EXCEPTIONS WILL BE ALLOWED BY NALCOR.	SATISFACTORY
11	COMPENSATION TERMS	ARTICLE 12 DEFINES THE TERMS. MONTHLY PAYMENTS AND MILESTONE PAYMENTS ARE PROVIDED. MILESTONE PAYMENTS LISTED IN APPENDIX A2.2.	MILESTONE PAYMENT PERCENTAGES ARE FAIR FOR BOTH PARTIES FOR THE DESCRIPTIONS LISTED IN A2.2. NO SCHEDULE OF PAYMENTS IS INDICATED OR WILL BE PROVIDED	SATISFACTORY

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
			BEFORE THE IE ISSUES THE REPORT. BASED ON THE ASSUMPTION THAT NALCOR WILL NOT MATERIALLY CHANGE THE INTENT OF ARTICLE 12, THE IE WILL ASSUME THAT THE CONTRACT WILL ALSO HAVE THE SAME TERMS.	
12	GUARANTEES & LIQUIDATED DAMAGES	LDS ARE DISCUSSED IN ARTICLE 36; NO INDICATION OF THE SIZE. NO LIMIT HAS BEEN ESTABLISHED FOR THE LD AS DISCUSSED IN ARTICLE 36.	THE IE WILL NOT BE ABLE TO GIVE AN OPINION UNLESS NALCOR PRESCRIBES WHAT WILL BE REQUIRED IN AN ADDENDUM TO THE RFP.	
13	PERFORMANCE BOND, LDS, BONUS, BUYDOWN/OUT	A PERFORMANCE BOND FOR 50% OF THE CONTRACT AMOUNT AND A PAYMENT BOND FOR 50% OF THE CONTRACT AMOUNT IS REQUIRED IN THE RFP. COVERS 3YEARS OF DEFICIENCIES. A LC FOR 15% OF THE CONTRACT PRICE UNTIL FINAL COMPLETION MAY BE REQUIRED, AND THEREAFTER, FOR 5% DURING THE WARRANTY PERIOD	NALCOR HAS USED THESE REQUIREMENTS TO NEGOTIATE A CONTRACT PRICE THAT CONSIDERS THESE PARAMETERS ALONG WITH THE PRICE. SINCE THE IE WILL NOT HAVE THIS INFORMATION, MWH WILL NOT BE ABLE TO OFFER AN OPINION.	SATISFACTORY FOR THE RFP ASSUMING THAT NALCOR WILL CONTINUE TO CLOSELY MANAGE THE CONTRACTOR.
14	COMPLIANCE	A LIST OF 50	NALCOR IS	GOVERNMENT

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
	CONTRACTS, PERMITS, PERFORMANCE	PERMITS IS FURNISHED TO THE BIDDERS IN EXHIBIT 6, APPENDIX B.	REQUESTED TO PROVIDE THE STATUS OF THE PERMITS. THIS WILL ALLOW MWH TO OPINE AS TO RECEIPT OF THE PERMITS, AND IF THEY ARE CURRENT OR PENDING.	ADVISED MWH THAT WILL NOT HAVE TO OPINE ON PERMITS.
15	GUARANTEE OF EQUIPMENT	GUARANTEES OF EQUIPMENT ARE REQUESTED. IN GENERAL, THE EPC CONTRACTOR IS REQUIRED TO WARRANTY FOR 3 YEARS ITS WORK; HAS TO PROVIDE FOR A SERVICE LIFE OF 50-YEARS; AND IS REQUIRED TO PROVIDE FOR EQUIPMENT AND SYSTEMS THE GUARANTEE.	MWH DOES NOT EXPECT THAT THEY WILL HAVE THE NECESSARY INFORMATION TO GIVEN AN IE OPINION.	
16	CONSTRUCTION SCHEDULE	NO DETAILED SCHEDULE IS PROVIDED OR IS CURRENTLY AVAILABLE IN PART 2, EXHIBIT 9, SCHEDULE. HOWEVER, IN EXHIBIT 9, SCHEDULE, THE PARTIAL MILESTONE SCHEDULE IS GIVEN. THE DG3 SCHEDULE AND THE INTERGRATED SCHEDULE DOES NOT AGREE WITH THE CURRENT SCHEDULE.	NALCOR IS REQUESTED TO RECONCILE THE DIFFERENCES	
17	SCHEDULE REVIEW; ADEQUATE PROVISIONS	NO SCHEDULE AVAILABLE TO REVIEW	SEE ITEM 16 ABOVE.	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
18	CRITICAL PATHS	NALCOR HAS CPM SCHEDULE BUT NO CONTRACT CPM TO SHARE WITH IE		NO OPINION CAN BE FURNISHED.
19	LIKELIHOOD OF ACHIEVING MILESTONES	THE ONLY SCHEDULE IS THE NALCOR CPM; NO CONTRACT YET. WITH THE LIMITED AMOUNT OF INFORMATION AVAILABLE, IT WOULD NOT BE APPROPRIATE TO FURNISH AN OPINION ON THIS ITEM. IE REQUIRES A CONTRACT CPM WHICH IS INTEGRATED INTO THE NALCOR CPM.		NO OPINION CAN BE FURNISHED.
20	PERFORMANCE TEST CRITERIA	SHOP TESTING AND INSPECTION IS GIVEN, USUALLY IN SECTIONS 6 TO 8 OF THE EQUIPMENT SPECIFICATION. ROUTINE TESTS, TYPE TESTS, AND ACCEPTANCE TESTS ARE IDENTIFIED FOLLOWING IEC OR ANSI STANDARDS, GENERALLY.	MWH REQUIRES TO KNOW WHERE THIS CRITERIA IS LISTED; IT SHOULD BE AFTER EACH PIECE OF EQUIPMENT IS DESCRIBED.	
20-1	REASONABLENESS OF CRITERIA	IN GENERAL, THE IE DID NOT SEE ANY UNREASONABLE REQUIREMENTS IMPOSED ON THE CONTRACTOR IN THE SPECIFICATIONS. MWH NEEDS TO	NALCOR TO FURNISH CONTRACT.	

ITEM NO.	DESCRIPTION	OBSERVATIONS; SOURCE IN CONTRACT	REMARKS; QUESTIONS?	OPINION OF INDEPENDENT ENGINEER
		REVIEW PERFORMANCE TEST CRITERIA.		
20-2	ADEQUACY OF TEST DURATION	DURATION OF TEST FOLLOWS IEC OR ANSI	NALCOR TO FURNISH CONTRACT.	SATISFACTORY
20-3	ABILITY TO EXTRAPOLATE RESULTS	ASSUMING THAT THE TESTING FOLLOWS IEC OR ANSI, EXTRAPOLATION OF THE RESULTS SHOULD BE EXPECTED IF IT IS WITHIN NORMAL LIMITS.	NALCOR TO FURNISH CONTRACT.	WE EXPECT THIS TO BE SATISFACTORY.
20-4	CONFORMANCE TO CODE	EQUIPMENT IS REQUIRED TO CONFORM TO CODE	NALCOR TO FURNISH CONTRACT.	SATISFACTORY
20-5	ABILITY TO ACHIEVE CONTRACT CONDITIONS	ASSUMING THE EQUIPMENT FOLLOWS THE SPECIFICATIONS, IT SHOULD ACHIEVE CONTRACT CONDITIONS	NALCOR TO FURNISH CONTRACT.	SATISFACTORY FOR RFP.

**CONTRACT NUMBER: RFP CD0502      CONTRACT NAME: CONSTRUCTION OF AC SUBSTATIONS**

**PRINCIPAL CONTRACTOR: UNKNOWN**

**CONTRACT AMOUNT: NALCOR HAS NOT PROVIDED AN UPDATED ESTIMATED AMOUNT; HOWEVER, TABLE 5-16, HEREIN, GIVES THE TOTAL AMOUNT OF COMBINED CONTRACTS AS: \$141,056,231.**

**CONTRACT START DATE: FORECASTED-DECEMBER 15, 2013 [IN RFP, EXHIBIT 9, SCHEDULE, IT GIVES SEPTEMBER 1, 2014]**

**CONTRACT COMPLETION DATE: NOV 30, 2016—FIGURE 5-1 OF THIS IE REPORT**

**RFP CLOSING DATE: OCTOBER 10, 2013**

**RFP ISSUE DATE: JULY 16, 2013**

**NOTE: EXHIBIT 9, SCHEDULE, OF RFP FOR CD0502 HAS THE FOLLOWING SCHEDULE—CONFLICTS WITH OTHER DATA IN IE REPORT**

- 1. FORECASTED CONTRACT AWARD: APRIL 1, 2014**
- 2. CONSTRUCTION START—ALL SITES: SEPTEMBER 1, 2014**
- 3. DELIVERY OF COMPANY SUPPLIED TRANSFORMERS: Q4 2015**
- 4. COMMISSIONING STATIC CHECKS COMPLETE---ALL SITES SEPTEMBER 20, 2016.**

**4.12 GUARANTEES AND LIQUIDATED DAMAGES (LDs)**

Included with the contract summaries as provided in Section 4 of the report are provisions established by our Agreement with Nalcor Energy for the respective contracts. For the contracts that we are expected to review, we have tabulated the results found during our reviews into Table 4-8, below, for easy reference (see also Appendix H, Liquidated Damages Calculations).

**Table 4-12**

**SUMMARY OF GUARANTEES AND LIQUIDATED DAMAGES (LDs)**

ITEM NO.	CONTRACT OR RFP NO.	ITEM NOs. IN TABLES	OBSERVATIONS	REMARKS; QUESTIONS	OPINION OF INDEPENDENT ENGINEER
1	CH0006 (MF) CONTRACT	6	NO GUARANTEES 3 YEAR WARRANTY	IE REQUIRES TIME TO OBSERVE PERFORMANCE	SATISFACTORY
		12	NO GUARANTEES NO LDS	IE REQUIRES TIME TO OBSERVE PERFORMANCE	NO IE OPINION UNTIL CONTRACT CLOSE.
		13	NO PERFORMANCE BOND OR PAYMENT BOND REQUIRED	IE REQUIRES CLARIFICATION FROM NALCOR AS TO WHAT PERFORMANCE SECURITY EXISTS OTHER THAN HOLDBACK PERCENTAGE OF PAYMENTS.	NO IE OPINION UNTIL MWH RECEIVES NOTICE FROM NALCOR THAT NO BONDS WILL BE NECESSARY AT PROJECT CLOSING. WE CURRENTLY UNDERSTAND NO BONDS WILL BE REQUIRED BY NALCOR.
		15	NOT APPLICABLE		NOT APPLICABLE
2	CH0007 (MF) RFP	6	LC AND PAYMENT BOND JUDGED TO BE TOO SMALL;	NALCOR IS REVIEWING ALL PROVISIONS FOR LCS,	NO IE OPINION CAN BE FURNISHED AT



ITEM NO.	CONTRACT OR RFP NO.	ITEM NOs. IN TABLES	OBSERVATIONS	REMARKS; QUESTIONS	OPINION OF INDEPENDENT ENGINEER
			WARRANTY OF WORK FOR THREE YEARS PARENTAL GUARANTEE IS REQUIRED	GUARANTEES, WARRANTIES, PAYMENT AND PERFORMANCE BONDS.  MWH REQUIRES CONTRACT.	THIS TIME.
		12	LDS RANGING FROM \$15K TO \$20K FOR MISSED MILESTONES ARE GIVEN IN PART 2, EXHIBIT 2, SECTION 12. PERFORMANCE INCENTIVES ARE ALSO GIVEN IN SECTION 12.2 WITH A POSSIBLE TOTAL BONUS OF \$16.5M	EXAMPLES OF HOW LDS ARE COMPUTED ARE REQUIRED BY THE IE; THESE WERE FURNISHED BY NALCOR.  IE REQUIRES FINAL LDS AS GIVEN IN CONTRACT.	NO OPINION CAN BE GIVEN AT THIS TIME BY THE IE SINCE WE HAVE ONLY REVIEWED RFP AND REVISIONS ARE EXPECTED
		13	SEE 12 DIRECTLY ABOVE FOR BONUS PROVISIONS, DECISIONS ON PERFORMANCE BONDS AND LDS DISCUSSED IN 6 ABOVE	NALCOR REQUIRED TO MAKE DECISIONS REGARDING THESE ISSUES	NO OPINION BY IE CAN BE GIVEN AT THIS TIME PENDING NALCOR'S DECISIONS AND OUR REVIEW OF THE CONTRACT
		15	NOT APPLICABLE		NO OPINION REQUIRED
3	CH0030 (MF) CONTRACT	6	GUARANTEES ARE DISCUSSED IN EXHIBIT 1, APPENDIX B AND IN THE TECHNICAL SPECIFICATIONS IN SECTION 2.3 WARRANTIES ARE DISCUSSED IN THE TECHNICAL SPECIFICATIONS UNDER 2.4	TYPICAL GUARANTEES AND WARRANTIES ARE PROVIDED. DIMENSIONABLE STABILITY AND CRACKING ARE ALSO COVERED.	SATISFACTORY
		12	LDS DISCUSSED IN EXHIBIT 2, SECTION 7. EXHIBIT 1, APPENDIX B DISCUSSES PERFORMANCE GUARANTEES. SECTION 2.3 OF	SAMPLE COMPUTATIONS TO SHOW HOW LDS ARE DERIVED HAVE BEEN REQUESTED; NALCOR FURNISHED TO MWH. ALSO, HOW THE LIMIT ON PENALTIES WILL BE USED.	REQUIRES FURTHER REVIEW. SAMPLE COMPUTATIONS NOW INCLUDED IN APPENDIX H.

ITEM NO.	CONTRACT OR RFP NO.	ITEM NOs. IN TABLES	OBSERVATIONS	REMARKS; QUESTIONS	OPINION OF INDEPENDENT ENGINEER
			THE TECHNICAL SPECIFICATIONS DISCUSSES GUARANTEES	FURNISHED.	
		13	ARTICLE 35 DISCUSSES PERFORMANCE GUARANTEES; ARTICLE 36 DISCUSSES LDS; ARTICLE 37 DISCUSSES PERFORMANCE TESTING. BUYOUT PROVISIONS ARE ALSO GIVEN. NO BONUS PROVISIONS HAVE BEEN PROVIDED	THE IE NOTES REVISIONS TO FORMULAS SHOULD BE CONSIDERED.	THE IE REQUIRES FURTHER CONSULTATION WITH NALCOR TO ENSURE WE UNDERSTAND THESE PROVISIONS. NO OPINION CAN BE GIVEN AT THIS TIME. REQUIRES FURTHER REVIEW.
		15	APPENDIX B, EXHIBIT 1 DISCUSSES PERFORMANCE GUARANTEES	WE WOULD LIKE TO VIEW SAMPLE COMPUTATIONS TO ILLUSTRATE HOW THESE PROVISIONS WOULD BE APPLIED. PROVIDED IN APPENDIX H.	NO OPINION CAN BE GIVEN AT THIS TIME. REQUIRES FURTHER REVIEW.
4	PH0014 (MF) NO INFORMATION				
5	PH0016 (MF) NO INFORMATION				
6	PD0505 (MF) NO INFORMATION				
7	CT0327 (LTA) NO INFORMATION				
8	CT0346 (LTA) NO INFORMATION				

ITEM NO.	CONTRACT OR RFP NO.	ITEM NOs. IN TABLES	OBSERVATIONS	REMARKS; QUESTIONS	OPINION OF INDEPENDENT ENGINEER
1	LC-SB-003 (LIL)	6	NO GUARANTEES 36 MONTH WARRANTY		SATISFACTORY
		12	LD OF \$200K/DAY		SATISFACTORY
		13	50% CONTRACT PRICE PERFORMANCE BOND; LC OF 15% CONTRACT PRICE	NO COMPANY GUARANTEE WAS REQUIRED	SATISFACTORY
		15	NO GUARANTEES 36 MONTH WARRANTY		SATISFACTORY
2	CD0501 (LIL) NO INFORMATION				

**4.13 CONSTRUCTION SCHEDULE**

To allow the IE to address the questions contained in our Agreement and to provide information to the reader, we have assumed that the Integrated Project Schedule (IPS) (Rev B3, 27 July 2013) for the LCP would form the basis for our schedule comments. We also have presently, CPM schedules for the following contracts: CH0006; CH0030; and LC-SB-003 that were provided in the contract documents for these awarded work packages. A copy of Rev B3 of the IPS is included in Appendix I. [We are currently awaiting the P6 CPM version that will be used to form MWH's opinion.]

**4.13.1 Schedule Review and Adequate Provisions**

The IPS is described as a CPM network that integrates the detailed scheduling input from the Labrador Transmission Assets (LTA), LITA, and MF Gen subprojects into one cohesive project timeline. The Maritime Link (ML) subproject (Emera) is not included as a reference. In addition, the schedule layout furnished to MWH does not reflect other ongoing programmatic type efforts such as engineering, permitting, procurement, or environmental type of tasks/constraints, but appears to focus exclusively on the construction execution effort. The IPS does add the Ready for Operation start-up tasks to represent the project's lifecycle inclusive of commissioning.

The current version of the IPS is developed with Primavera P6 software and is characterized by the following metrics:

Table 4-13

**IPS DEVELOPMENT METRICS**

Description	Number
Target Milestones	45
Key Dates	169
Task Activities	512

Table 4-13 indicates a fairly high ratio of target milestones and key dates relative to the detailed task activities that drive those key decision points and milestones. While a cause of the imbalance could be related to the lack of details in the IPS for the supporting programmatic type tasks and the Emera scope as mentioned above, MWH expresses an opinion that the schedule is somewhat underweighted in supporting detail relative to the scope, complexity and scale of the LCP. Typically, we would expect to see approximately perhaps double or triple the number of activities relative to our remote large project experience. The perceived lack of supporting details for a project of this scale could also be related to filtering or “rolling-up” the task details to support a high level review.

As an integrated schedule, we would expect to see a version that covers all non-construction supporting tasks (i.e., procurement, design, etc.) as well as the construction sequence. As a high level schedule, the activity durations appear to be time estimates in increments of weeks, months, or quarters without the supporting daily or weekly item task buildup. Finally, we could not find documentation that the project’s extensive Risk Register has been mapped to the IPS to reflect execution uncertainties to individual activities and provide for their contingency. As well, no analytical treatment of the schedule in relation to uncertainty of the listed activity durations or theorized constraints was detected.

While the IPS is formatted with baseline information and records current activity status (i.e., one month back and current month) against the baseline as a Gantt chart it does not provide updated progress (i.e., percent complete by activity) or resource / progress curves. MWH understands that this information is part of the LCP Stewardship Process, which is not under our direct review. As such, MWH is not directly commenting on the adequacy or robustness of the project’s ongoing project controls process that is tasked with the monthly monitoring of the project’s key cost and time objectives.

As reported in the basis-of-schedule document that accompanies the IPS, the IPS does provide for monitoring of the project’s target milestones, primary and secondary critical paths, activity float, and project interfaces issues. MWH provides the opinion that while milestone and key decision dates are well represented in the IPS, the inability for reviewers to understand the project’s critical path prevents a better understanding of how the project team is prioritizing and mitigating constraints for critical activities and reduces confidence in the schedule opinion.

The IPS is organized with a four-level work breakdown structure (WBS) starting at the highest level by subproject (LTA, LITA, etc.). MWH believes the IPS WBS organization is well planned and meets industry practices for organizing and sequencing of the schedule's construction details considering multiple work elements and the multi-year time span.

Based on our review of the 37-page high level Gantt chart documenting planned versus actual construction execution for the LTA, LIL, and the MF Gen subprojects, we can provide the following observations:

- Generally, the LCP milestones indicate an as-planned execution to date.
- Generally, the LTA, LIL milestones indicate an as-planned execution to date.
- Generally, the MF Gen milestones indicate as as-planned execution to date with some spillage.
- Generally, Contract CH0006 (Mass Excavation) appears to be executing per plan with substantial completion set for late December 2013. An 89-day deviation from baseline represents the late finish of this contract.
- Nalcor has provided assurances that Contract CH0007 (Powerhouse) will be awarded imminently (October 2013) versus the originally planned June award timeframe. MWH understands that the contractor has started his mobilization and planning activities during final contract negotiations.

It can be noted, that despite general slippage in the early tasks for all three subprojects generally the as-planned completion milestones remain relatively unaffected by the early delays considering the long project timeline. This outcome would suggest that mitigation measures or mid-course schedule corrections are being employed by the project team to maintain schedule. The exact mitigation measures have not been communicated to MWH.

The basis-of-schedule document does not communicate the exact weather calendar constraints that the IPS is based on to enable an understanding of embedded delays due to weather related impacts. Finally, the IPS layout furnished to MWH does not call out activity durations to facilitate correlation with the basis-of-estimate document to cross-check assumed schedule productivity metrics with the DG3 cost estimate.

#### **4.13.2 Principal Critical Paths**

After review of the 37-page detailed IPS, MWH provides the opinion that the B3 version of the IPS layout furnished to MWH does not indicate the project's primary or secondary critical paths. In addition, the IPS does not show task linking so that activity logic relationships or subproject interface issues can be vetted. As mentioned above, the IPS P6 layout provided to MWH is a summary Gantt chart format that focuses on reporting the numerical variances between

baseline and current status for project construction tasks only. In January of 2013, MWH was furnished with a separate one-page summary schedule of the project's critical path and secondary paths, but that high-level roll-up also did not supply relevant information to make a determination or assessment relative to the project's critical path(s).

The P6 critical path method component of the Primavera project management system software provided by Oracle, provides for evaluation of the critical path and near critical definition of unlimited activities with no restraints on the work breakdown structure, including cash flow.

#### 4.14 LIKELIHOOD OF ACHIEVING MILESTONES

Figure 4-4 presents the Target Milestone Schedule established by Nalcor for key components of the work which is and will be monitored very closely by the EPCM consultant as well as Nalcor personnel assigned to the particular components of the project. The milestone schedule represents the planning at the Decision Gate 3 (DG3) level of project planning and was sanctioned by Government. The Target Milestone Schedule is also supported by the project's Critical Path Schedule which was prepared by Nalcor and its consultants and forms the basis for the Target Milestone Schedule.

In general, Nalcor has presented a well-planned project which included the preparation of risk assessments and constructability reviews to support their planning. This methodology should result in a higher level of certainty to achieving the milestones than most projects the IE has reviewed. The IE has examined several of the key project components to allow it to offer preliminary opinions at this time.

Opinion 1: **ON HOLD**; to be furnished when MWH has more information. This information will include consideration of the following items: progress on major contracts to gauge progress by reviewing actual progress; review of history of issued change orders and request for change; award of major contracts has been accomplished; receipt of all contracts required to be reviewed by IE; or quality control reports; and review of current CPM project schedule and contract CPM schedules.

Opinion 2: **ON HOLD**; to be furnished when MWH has more information.

Additionally, the IE believes that it will have a more knowledgeable position to opine on achieving milestones after it views progress on the first contracts that have been awarded by Nalcor that allow it to view actual progress and achievements of the suppliers and contractors working in the conditions that prevail for the LCP.

Question: Will this Figure 4-4 be updated prior to financial close?



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## 4.15 SUPPLY CONTRACTS SCHEDULES

Nalcor's Representative was sent an earlier email requesting these schedules on February 6, 2013, and MWH received a schedule included in Appendix I. MWH would like an updated similar schedule for the IE Report. MWH requires contractor schedules as noted in the tables in Section 4.0 giving a CPM schedule they will use.

## 4.16 PERFORMANCE TEST CRITERIA

### 4.16.1 Turbines and Generators

The performance test criteria for the turbines and generators (Contract: CH0030) are the only ones that are currently available for review (March 2013). As noted in the Summary Table 4-3, Items 13 and 15, we find that they are Satisfactory and would meet Good Utility Practice. We have noted that two of the test criteria and the penalties for not meeting the criteria are usually not found in specifications and contracts for other projects that we have reviewed; we find these extra provisions that are given in the Contract Documents very appropriate for the large size equipment. For our readers' benefit, we repeat what the LCP has accepted as its definition of Good Utility Practice as given in Schedule A of the WMA and quote this definition as follows since it is succinctly stated:

Good Utility Practice means those practices, methods or acts, including but not limited to the practices, methods or acts engaged in or approved by a significant portion of the electric utility industry in Canada, that at a particular time, in the exercise of reasonable judgment, and in light of the facts known at the time a decision is made, would be expected to accomplish the desired result in a manner which is consistent with laws and regulations and with due consideration for safety, reliability, environmental protection, and economic and efficient operations.

#### 4.16.1.1 Other Equipment

Currently there is no other equipment where performance test criteria are available for comment by the IE. Nalcor is asked to verify this statement is correct.

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