

From: philipbursey@lowerchurchillproject.ca
To: stephenfollett@lowerchurchillproject.ca
Subject: Emailing: Exhibit 1, Exhibit 2, Articles (CD0502-001)
Date: Thursday, November 24, 2016 10:29:16 AM
Attachments: [.png](#)
[.png](#)
[.png](#)
[Exhibit 1.pdf](#)
[Exhibit 2.pdf](#)
[Articles \(CD0502-001\).pdf](#)

Your message is ready to be sent with the following file or link attachments:

Exhibit 1
Exhibit 2
Articles (CD0502-001)

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

Philip Bursey

Contracts Lead

PROJECT DELIVERY TEAM

Lower Churchill Project

t. 709 737-1830

e. PhilipBursey@lowerchurchillproject.ca

w. musktratfalls.nalcorenergy.com



Exhibit 1
Scope of Work
Agreement Number: CD0502-001

EXHIBIT 1
SCOPE OF WORK



Exhibit 1
Scope of Work
Agreement Number: CD0502-001

This Exhibit 1 - Scope of Work incorporates all Technical Specifications and Drawings as catalogued in the Technical Document List (Doc. No. ILK-SN-CD-4500-EN-LS-0001-01).



Document Front Sheet



NE-LCP Contractor/Supplier

Contract or Purchase Number and Description:		Contractor/Supplier Name:	
Document Title: ac SUBSTATIONS Scope of Works Specification		Total Number of Pages Incl. Front Sheet 88	
Contractor Document Number:		Revision Number: 03	
Supplier Document Number:		Revision Number:	
NE-LCP Document Number: LCP-SN-CD-4000-EL-SP-0002-01		NE-LCP Issue Number: D3	
Approver's Signature: 	Date (dd-mmm-yyyy): 12-NOV-2014	Review Class:	
Comments:		Equipment Tag or Model Number:	

NE-LCP

REVIEW DOES NOT CONSTITUTE APPROVAL OF DESIGN DETAILS, CALCULATIONS, TEST METHODS OR MATERIAL DEVELOPED AND/OR SELECTED BY THE CONTRACTOR, NOR DOES IT RELIEVE THE CONTRACTOR FROM FULL COMPLIANCE WITH CONTRACTUAL OR OTHER OBLIGATIONS.

01 - REVIEWED AND ACCEPTED - NO COMMENTS
 02 - REVIEWED - INCORPORATE COMMENTS, REVISE AND RESUBMIT
 03 - REVIEWED - NOT ACCEPTED
 04 - INFORMATION ONLY
 05 - NOT REVIEWED

Lead Reviewer: 	Date (dd-mmm-yyyy): 12-NOV-2014	Project Manager: 	Date (dd-mmm-yyyy): 12-NOV-2014
NE-LCP Management: 	Date (dd-mmm-yyyy): 12-NOV-2014		

General Comments:

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

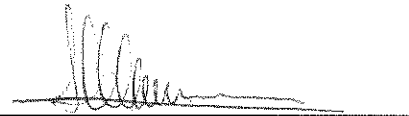
LOWER CHURCHILL PROJECT

CD0502

ac SUBSTATIONS

SCOPE OF WORK SPECIFICATION

Prepared by:



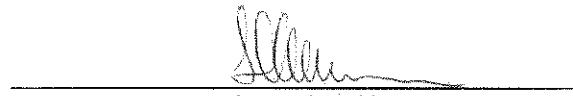
Luis Chavez

Approved by:



Ali Dariani

Approved by:



For Mohamed Makky

CA
B

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

REVISION LIST

Revision						Remarks
N°	By	Verif.	Appr.	Appr.	Date	
D3	LC	AD		LC	12-Nov-2014	Re-Issued for Design This is a functional specification that clearly defines Company's requirements for Contractor to design, procure, construct, commission and deliver the systems and equipment as described herein.
D2	LC	AD		MM	03-Nov-2014	Re-Issued for Design This is a functional specification that clearly defines Company's requirements for Contractor to design, procure, construct, commission and deliver the systems and equipment as described herein.
D1	LC	AD		MM	15-Jun-2014	Issued for Design This is a functional specification that clearly defines Company's requirements for Contractor to design, procure, construct, commission and deliver the systems and equipment as described herein.

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

TABLE OF CONTENTS

	PAGE
1 GENERAL	1
1.1 Project Description	1
1.1.1 Muskrat Falls Generation (MFG)	1
1.1.2 Labrador Island Transmission Link (LIL)	2
1.1.3 Labrador Transmission Asset (LTA)	2
1.2 Definitions	3
1.3 Reference Documents	4
1.4 Language and Units	4
1.5 Site Climate Data	5
1.6 Drawings Enclosed with Scope of Work	5
1.7 Technical Specifications	6
2 SCOPE OF WORK	6
2.1 General	6
2.2 Summary of the Work	6
2.3 Churchill Falls Substation	7
2.3.1 Single-Line Diagram	7
2.3.2 Substation Layout	8
2.3.3 Description of Work	8
2.4 Muskrat Falls Substation	15
2.4.1 Single-Line Diagram	16
2.4.2 Substation Layout	16
2.4.3 Description of Work	16
2.5 Soldiers Pond Substation	21
2.5.1 Single-Line Diagram	21
2.5.2 Substation Layout	22
2.5.3 Description of Work	22
2.6 Project Management	26
2.6.1 N/A	26
2.6.2 Organization	26
2.7 Engineering	26
2.7.1 General	26
2.7.2 Engineering Staff	27
2.7.3 Equipment and System Specifications	27
2.7.4 Design Studies	27
2.7.5 Substation Layout Design	28
2.7.6 Control and Protection	28
2.7.7 Civil Works Design	28
2.7.8 Survey and Site Investigation	28
2.7.9 Mechanical Design	28



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

2.7.10 Base Design Phase 29

2.7.11 Base Design Review 29

2.7.12 Detailed Engineering 30

2.7.13 Submittal of Documents..... 31

2.8 Procurement..... 31

2.8.1 Manufacturers / Suppliers..... 31

2.8.2 Transportation and Storage of Contractor's Items..... 31

2.9 Construction 33

2.9.1 General 33

2.9.2 Site Facilities 34

2.9.3 Construction Power 34

2.9.4 Water Supply..... 34

2.10 Installation..... 34

2.10.1 Field Testing / Inspection and Construction / Installation Control 34

2.10.2 Independent Testing Laboratory 35

2.11 Shutdown / Outage Coordination 35

2.12 Station Tagging 36

2.13 Completion..... 36

2.14 Support during Operation and Maintenance 37

2.15 Provision for Future Substation Expansion..... 38

3 INTERFACES WITH OTHERS 39

3.1 Interface with Gateway for Energy Control Center Operation..... 39

3.2 Interface with Converter Stations..... 41

3.3 Interface with Churchill Falls Power Plant..... 47

3.4 Interface with Muskrat Falls Power Plant 51

3.5 Interface with Soldiers Pond Synchronous Condenser 55

3.6 Interface with Transmission Lines..... 60

3.7 Communication Interfaces 63

3.8 Interface with Remote Substations at Soldiers Pond..... 67

3.9 Interface with Supplier of Power Transformers 68

3.10 Interface with CWC/BC 68

4 WORK EXCLUDED..... 71

4.1 Items to be Supplied by Company 71

ATTACHMENT A A

List and Interface Drawings..... A

ATTACHMENT B B

List of Accepted Suppliers..... B

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

List of Figures and Tables

Table 1-1: Site Climatic Data 5

Table 3-1: List of Interfaces with Gateways..... 39

Table 3-2: List of Interfaces with Converter Stations (Muskrat Falls and Soldiers Pond)..... 41

Table 3-3: List of Interfaces with Churchill Falls Power Plant 48

Table 3-4: List of Interfaces with Muskrat Falls Power Plant 51

Table 3-5: List of Interfaces with the Synchronous Condenser Facility..... 56

Table 3-6: List of Interfaces with Transmission Lines..... 60

Table 3-7: List of Interfaces with Telecommunication System..... 63

Table 3-8: List of interfaces of Soldiers Pond with Remote Substations..... 67

Table 3-9: List of Interfaces with CWC/BC 68



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

1 GENERAL

1.1 Project Description

Nalcor is developing Phase I of the LCP, which includes an 824 MW hydroelectric generating facility at Muskrat Falls and associated transmission links to Churchill Falls and the Island of Newfoundland.

The scope of the physical facilities to be constructed during Phase I of the Project includes the following:

- Muskrat Falls Generation (MFG)
- Labrador Transmission Assets (LTA)
- Labrador – Island Transmission Link (LIL)

1.1.1 Muskrat Falls Generation (MFG)

Muskrat Falls Generation includes the following:

- 22 km of permanent access roads on the south side of the river, including upgrading and new construction, and temporary bridges;
- A 1,500 person accommodations complex;
- A north Roller Compacted Concrete (RCC) overflow dam;
- A south rock fill dam;
- River diversion during construction via the spillway;
- 5 vertical gate spillway;
- Reservoir preparation and reservoir clearing;
- Replacement of fish and terrestrial habitat;
- North spur stabilization works; and,
- A close coupled intake and powerhouse, including:
 - 4 intakes with gates and trash racks
 - 4 turbine/generator units at approximately 206 MW each with associated ancillary electrical/mechanical and protection/control equipment
 - 5 power transformers (includes 1 spare), located on the draft tube deck of the powerhouse
 - 2 Overhead cranes each rated at 450 Tonnes

CM TJ

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

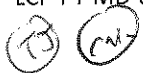
1.1.2 Labrador Island Transmission Link (LIL)

The LIL consists of the overland high voltage direct current (HVdc – 350kV) Transmission system and associated HVdc converter station systems, the Strait of Belle Isle (SOBI) Crossing and a new synchronous condenser facility. Specifically it includes:

- AC Switchyard at Soldier’s Pond on the Avalon Peninsula;
- Muskrat Falls HVdc converter stations: HVdc bipolar converter station; 315 kV ac, converted to ±350 kV dc; Pole capacity of 450 MW;
- Shoreline pond electrode located on the Labrador side of the Strait of Belle Isle. The L’Anse-au-Diable shoreline pond electrode will be connected to the converter station at Muskrat Falls with dual overhead conductors supported on a wood pole line from the pond electrode site to the HVdc transmission line Right of Way and from there on will be supported on the HVdc line structures;
- Soldiers Pond HVdc converter station: HVdc bipolar converter station; 230 kV ac, converted from ±350 kV dc; pole capacity of 450 MW; and Shoreline pond electrode located on the east shore of Conception Bay;
- The Dowden’s Point shoreline pond electrode will be connected to the converter station at Soldiers Pond with dual overhead conductors supported on a wood pole line;
- HVdc Transition Compounds for the Strait of Belle Isle submarine cable terminations;
- Three Mass Impregnated 450MW capacity each submarine cables crossing the SOBI protected using HDD boreholes and seabed rocking dumping;
- One transition compound for each side of the Strait of Belle Isle submarine cable crossing, with associated switch works to manage the junction of multiple submarine cables and the overhead transmission line;
- Overhead transmission line from the Muskrat Falls converter station to Soldiers Pond converter station: 900 MW, ±350 kV dc, bipolar line, single conductor per pole; galvanized lattice steel guyed suspension and rigid angle towers; 1100 km long; and,
- New synchronous condenser at Soldiers Pond – 3 x 175 MVar units.

1.1.3 Labrador Transmission Asset (LTA)

LTA consists of the AC transmission line system form Churchill Falls to Muskrat Falls, specifically:



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- A new 315/735 kV switchyard at Churchill Falls connected to the existing 735 kV switchyard with two overhead lines of 735 kV of approximately 0.6 km and switchyard extension;
- Muskrat Falls switchyard 315 kV; and,
- Transmission lines from Muskrat Falls to Churchill Falls: double-circuit 315 kV ac, 3 phase lines, double bundle conductor, single circuit galvanized lattice steel guyed suspension and rigid angle towers; 247 km long.

1.2 Definitions

The following abbreviations are incorporated in this document:

- AIS Air Insulated Substation
- BC Building Contractor
- CWC Civil Work Contractor
- ECC/BCC Energy Control Center / Backup Control Center
- EPC Engineering, Procurement and Construction
- ICB Interface Control Building
- GIS Gas Insulated Switchgear
- CD0501 Contract for the Design, Supply and Installation of HVdc Converter Stations and Transition Compounds
- CD0502 EPC Contract for the Design, Supply and Construction of ac Substations
- CD0503 Contract for Site Earthworks in Churchill Falls and Soldiers Pond substations (site grading)
- CD0510 Contract for the Design, Supply and Installation of Telecommunication Systems in all substations, converter stations, power plant, synchronous condenser etc.
- CD0534 Contract for the Design Supply and Installation of the Synchronous Condenser located at Soldiers Pond
- PD0537 Contract for the Procurement of Power Transformers and Grounding Reactors
- SCADA Supervisory Control and Data Acquisition

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

“Technical Document List” means the list of documents described in Section 1.3 and includes the documents referenced in such list.

“Construction Documents” means the drawings, plans, specifications and any other documents setting out the design, location, dimensions, requirements and standards necessary for the work to be performed by the CWC for the construction of civil works and by the BC for construction of the buildings

The definitions set out in Section 1.3 of LCP-SN-CD-4000-EL-TS-0017-01 “Testing and Commissioning” are incorporated into this document.

The abbreviations and definitions described in this Section 1.2 shall apply to document LCP-SN-CD-4000-CV-TS-0002-01 “Buildings Technical Specification” and to LCP-SN-CD-4000-CV-TS-0003-01 “Civil Works Technical Specifications”.

1.3 Reference Documents

This document shall be read in conjunction with the documents listed in the Technical Document List ILK-SN-CD-4500-EN-LS-0001-01, which contains the following documents:

- a) Technical Specifications
- b) Drawings related to the Work; these drawings are conceptual and it shall be the ultimate responsibility of Contractor to design the substations according to the Technical Requirements.
- c) Earthwork Drawings of works performed by Company’s Other Contractors (CD0503) for the site grading and the substation sites;
- d) Reference Drawings, provided for reference and information purposes of the existing 735 kV CF switchyard.

1.4 Language and Units

All documents, drawings, manuals, reports, nameplates, instructions, labels, and other field identifications shall be written in the English language.

Unless otherwise stated, all units shall be metric (SI).

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

1.5 Site Climate Data

The equipment and materials shall be designed to operate for climatic conditions as given in Table 1-1.

Table 1-1: Site Climatic Data

SN	Description	Churchill Falls	Muskrat Falls	Soldiers Pond
1	Temperature			
	a. Maximum C°	40	40	40
	b. Minimum C°	-50	-50	-30
	c. Maximum Daily Average C°	20	20	20
2	Precipitation			
	a. Daily Rainfall (mm)	45.1	79.2	109.6
	b. Daily Snowfall (cm)	44.7	71	78.2
	c. Mean Maximum Snow Depth (cm)	130	140	80
3	Wind			
	a. 10-min-50year, km/hr	95	98	138
	b. 3-Second Gust Wind Speed, km/hr	128	132	186
4	Maximum Ice thickness (mm)	17	20	42*
5	Solar Radiation (W/m ²)	1120	1120	1120
6	Isokeraunic Level (thunder-days/year)	5	5	5
7	Seismicity PGA (peak ground accel.)	0.09	0.09	0.09
8	Humidity RH%, maximum monthly average	92	83.5	92.2
9	Air Pressure, kPA	96	100.5	101.3
10	Pollution Levels ESDD (mg/cm ²)	0.02	0.02	0.02

* Maximum ice thickness for design of disconnect switches for Soldiers Pond Substation shall be 20 mm.

1.6 Drawings Enclosed with Scope of Work

The Drawings referenced in the Technical Document List are conceptual and for the information of Contractor only. Contractor shall read these Drawings in conjunction with this Exhibit 1 - Scope of Work and Technical Specifications.

CM TJ

<p>LOWER CHURCHILL PROJECT</p>	<p>ac SUBSTATIONS Scope of Work Specification</p>	<p>Rev</p>	<p>Date</p>
	<p>Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01</p>	<p>D3</p>	<p>12-Nov-2014</p>

1.7 Technical Specifications

The equipment and materials specified herein shall be considered as the minimum requirements, and Contractor shall carry out its own basic and detailed design necessary for its specifications.

The submission of engineering documents shall be progressive and submitted in phases to give sufficient review time to Company.

2 SCOPE OF WORK

2.1 General

The substations shall be built on a basis of an EPC turnkey contract in accordance with this Exhibit 1 -Scope of Work and related documents referenced in the Technical Document List. Contractor shall be responsible for the design and engineering of civil works and buildings but the construction of the civil works and buildings will be carried out by Company’s Other Contractors (by CWC and/or BC) under the construction management of Contractor.

This Specification describes generally all the Work needed to provide fully equipped, integrated facilities and ready for operation. Therefore, the Exhibit 1 – Scope of Work shall not be considered limitative.

2.2 Summary of the Work

Contractor shall be responsible for, but not limited to, all design, engineering, manufacturing, supply, delivery, installation, erection, Commissioning Static Checks, Dynamic/System Commissioning, Trial Operation, Turnover and training including construction management of the CWC, for the following facilities:

- a) 735 kV Churchill Falls substation extension including interfaces related to telecommunication interface, protection and control, transmission line, etc.;
- b) 735-315 kV Churchill Falls substation, including interfaces related to telecommunication, protection and control, 735 kV and 315 kV transmission lines, etc.;
- c) 315-138 kV Muskrat Falls substation, including the interconnection with Muskrat Falls power plant, Muskrat Falls ± 350 kV converter station protection and control and related telecommunication transmission line, etc.;

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- d) 230 kV Soldiers Pond substation, including the interconnection with the synchronous condenser facility, Soldiers Pond ± 350 kV converter station protection and control and related telecommunication, transmission line, etc.

The details of the Work are described in the following Sections.

2.3 Churchill Falls Substation

The work for the Churchill Falls Substation includes the extension of the existing 735 kV substation, hereafter called 735 kV substation extension and the construction of a new 735-315 kV terminal substation. The new Churchill Falls 735-315 kV substation includes (2) 735 kV bus extension, two (2) power transformers banks composed by three (3) $\frac{735}{\sqrt{3}} - \frac{315}{\sqrt{3}} - 13.8$ kV 280 MVA single phase units per bank and four (4) 315 kV Gas Insulated Switchgear (GIS) feeders.

Reference Drawings

Drawing No.	Description
MFA-SN-CD-4100-EL-SL-0001-01	735-315 kV CF Switchyard Extension - Single-Line Diagram - 735-315 kV Substation
MFA-SN-CD-4100-EL-LT-0010-01	Churchill Falls 735-315 kV CF Switchyard Ext. Layout - Plan View 735 kV Switchyard Extension
MFA-SN-CD-4100-EL-LT-0011-01	Churchill Falls 735-315 kV CF Switchyard Extension - Layout - Plan View
MFA-SN-CD-4100-EL-SE-0006-01 to 03	Churchill Falls 735-315 kV CF Switchyard Extension - Layout - Sections 735 kV

2.3.1 Single-Line Diagram

The single-line diagram No. MFA-SN-CD-4100-EL-SL-0001-01 shows the arrangement of the 735 kV switchgear in breaker-and-a-third configuration with two (2) incomers for 735-315 kV power autotransformers and reserved area for one (1) future 735 kV transmission line. The new 735 kV busbars are connected to the existing substation busbar through tie breakers and associated disconnect switches and instrument transformers in order not to compromise the reliability of the existing substation for faults in the new substation.

The 315 kV switchyard shall be of GIS technology and arranged in breaker-and-a-third configuration with two (2) incomers from power autotransformers and two (2) ongoing feeders for the two (2) transmission lines from Churchill Falls to Muskrat Falls.

(Ca) (TJ)

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

The GIS shall be designed and built considering the future expansion of the substation as shown on the above referred single-line diagram and layout drawings.

2.3.2 Substation Layout

Drawing No. MFA-SN-CD-4100-EL-LT-0010-01 shows the modification and extension of the existing switchyard required to accommodate the tie breakers and the associated equipment, including the Work required to extend the existing 735 kV busbar. The switchyard extension, which includes one (1) interface control building, shall be terminated with a line gantry from which a section of transmission line shall be built by Company’s Other Contractors up to the new 735-315 kV switchyard.

Drawing No. MFA-SN-CD-4100-EL-LT-0011-01 shows the new 735 kV air insulated switchyard, the 315 kV indoor GIS, the associated 315 kV outdoor equipment and one (1) control building. The new switchyard will be built in an area approximately 1 km away from the existing substation.

2.3.3 Description of Work

This Section 2.3.3 describes the Churchill Falls substation Work as an itemized list of activities. The described Work shall include, but not limited to, design, manufacturing, factory testing, packing, transportation to Site, loading and unloading, storing, preserving, installation, Commissioning Static Checks, Dynamic/System Commissioning, Trial Operation, Turnover and training. The civil work and building construction shall be done by CWC and BC respectively; however, Contractor shall retain the overall responsibility for the execution of the Civil Works in accordance with the Agreement, including cost, schedule, health, safety and environment performance and quality control risks during construction as more fully described in Exhibit 17 – Joint Cost Savings Initiative for Civil Works.

2.3.3.1 Existing 735 kV Churchill Falls Substation Extension

The following Work is included in the 735 kV Churchill Falls substation extension; however, this list should not be considered limitative:

- a) Design of the final site grading and surface drainage system;
- b) Supply and installation of above ground connections to building structure, equipment, cubicles, structures, perimeter fence, lightning protection systems, overhead line shield wires, etc.;
- c) Design of the modification of the existing fence as per drawing MFA-SN-CD-4100-EL-LT-0010-01;

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- d) Design of the site landscaping and surface treatment, installation of insulating gravel and granular fill, construction of roads within the switchyard;
- e) Design of foundations within the existing yard to extend the busbar B135 and B246;
- f) Design of cable trenches or ductbanks between the substation extension area and the existing switchyard control building for the LV control and power cables and the Fibre Optic Cables (FOC). The FOC will be supplied and installed by Company's Other Contractors;
- g) Design of cable trenches and/or ductbanks for the installation of FOC between the Optical Ground Wire (OPGW) junction box located in the line gantries up to the cable trenches or new ductbanks; the FOC will be supplied and installed by Company's Other Contractors;
- h) Design of foundations for the tie breakers and associated equipment (disconnect switches, current transformers, voltage transformers, surge arresters, post insulators, shielding mat, etc.) including the foundations for the line gantries;
- i) Design of the Interface Control Building (ICB) destined to the installation of control and protection and auxiliaries including ac and dc distribution panels, etc. including design of HVAC, fire detection, fire suppression and fire alarm systems;
- j) Design of foundations for the lighting fixtures;
- k) Supply and installation of galvanized steel structures such as busbar gantries, equipment support for post insulators, voltage transformers, current transformers, surge arresters, shield wire mast, etc. (circuit breakers and disconnect switches to be supplied with its own supports);
- l) Supply and installation of shield wires for lightning protection;
- m) Extension of the 735 kV busbars B135 and B246;
- n) Supply and installation of jumpers from the transmission line B4 and B5 to the substation equipment;
- o) Supply and installation of lighting poles as required, fixtures, junction boxes including lighting control panel(s);

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- p) Supply, installation and Commissioning of all other electrical equipment as shown on drawings referenced in Section 1.3(b), such as circuit breakers, disconnect switches, surge arresters, instrument transformers, etc., including all associated terminations and connections;
- q) Supply and installation of busbar materials including, insulator strings, connectors, flexible and rigid conductors, corona rings, insulators, etc.;
- r) Supply and installation of control and protection panels in the ICB consisting of two 735 kV busbar protection, teleprotection terminals, bay control units, bay control units, gateways, routers, etc.;
- s) Replacement of the existing busbar protection B135 and B246 and incorporation of the tie CTs in the differential protection, including all modification and integration Work in the existing substation owned by CF(L)Co. This work shall be properly coordinated by Contractor with CF(L)Co;
- t) Supply and installation of LV control and power cables within the 735 kV switchyard extension, as well as the LV power cables for the ac and dc power supplies of the equipment to be installed in the ICB;
- u) Supply and installation of safety signs, equipment tagging plates, phase identification, bay identification (i.e. T1, T2, L3101, L3102, etc);
- v) Surface preparation, protection coatings and paint applied on all applicable equipment and structures;
- w) Performing QA/QC tests;
- x) Commissioning Static Checks and Dynamic/System Commissioning as defined in the specification LCP-SN-CD-4000-EL-TS-0017-01 "Testing and Commissioning";
- y) Supply of spare parts as defined in the specification LCP-SN-CD-4000-EL-LS-0002-01 "List of Spare Parts and Maintenance Tools Technical Specification",
- z) Training as per the document No. LCP-SN-CD-4000-EL-TS-0001-01 "AC Substations - General Technical Requirements", and
- aa) Supply and installation of LV power cables to bring power (ac and redundant dc) from the existing 735 kV switchyard control building to the interface control building; the cable shall be connected to the existing distribution panels located in the existing substation relay room. If no free distribution

(B) (CM)

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

breakers are available, the Contractor shall supply and install new ones in the existing relay room. At the interface building side, the Contractor shall supply and install the distribution panels for the building and the equipment to be installed.

2.3.3.2 735-315 kV Churchill Falls Substation

The following Work is included in the 735-315 kV Churchill Falls substation; however, this list should not be considered limitative:

- a) Design of the final site grading and surface drainage system;
- b) Design of the site drainage systems inside the fenced area and connection to the external drainage system of the fenced area, underground services, sump pits, sump pumps, etc., where required;
- c) Design all necessary potable water piping and installations in control building including underground water storage tank;
- d) Design all necessary sanitary sewage systems including septic tanks;
- e) Supply and installation of underground grounding grid, as well above ground connections to building structure, equipment, cubicles, structures, perimeter fence, lightning protection systems, overhead line shield wires, etc.;
- f) Design of substation chain-link fencing, including doors and gates;
- g) Design site landscaping and surface treatment, graveling, access roads, parking areas;
- h) Design of foundations within the 735 kV switchyard including foundation for power autotransformers, including spare unit, circuit breakers, disconnect switches, instrument transformers, surge arresters, post insulators, auxiliary service transformers, grounding reactors, grounding resistors, gantries, lighting fixtures, and firewalls for transformers. This shall also include the design of foundations for the 315 kV associated outdoor equipment, such as gantries, post insulators, surge arresters, etc.;
- i) Design of transformer firewalls;
- j) Design of cable trenches or ductbanks between the 735 kV and 315 kV switchyards, 315 kV GIS building and the control building for the installation of control and power cables and the FOC's

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev.	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- k) Design of cable trenches, ductbanks and manholes for the installation of FOC between the Optical Ground Wire (OPGW) junction box located in the line gantries up to the cable trenches or new ductbanks; the FOC will be supplied and installed by Company’s Other Contractors;
- l) Design oil containment and recuperation systems for all oil-filled equipment, including an oil containment pit connected to an underground water-oil separator so as to ensure the containment of any oil spills;
- m) Design of the control building including design of foundations, raised floor, electrical distribution, fire detection, fire suppression and fire alarm systems, HVAC, interior lighting, plumbing, and supply and installation of furniture, shelves, etc. Control building shall comprise a control room, auxiliary room, clean agent room, telecommunication room, washrooms, battery rooms, MV switchgear room, spare parts room and a multipurpose room, and other areas found necessary as a result of detail design of the substation. The control building shall be provided with a water storage tank and pumping system as defined in the specification LCP-SN-CD-4000-CV-TS-0003-01 - Civil Work Specification;
- n) Design of a 315 kV GIS building including design of foundations for the GIS building, for the GIS itself, associated cable entrances to building, cable vaults, HVAC, fire and gas detection systems; design shall consider the installation of SF6-air bushing and cable vaults for the installation of HV XLPE cables. The GIS building shall be designed considering the installation of two (2) complete diameters of breaker-and-a-third breaker configuration with associated cranes as well as maintenance/test area and provision for future building extension.
- o) Installation and testing of the following equipment supplied by Company’s Other Contractors (PD0537) and under supervision of Company’s Other Contractors:
 - $\frac{735}{\sqrt{3}} - \frac{315}{\sqrt{3}} - 13.8$ kV 280 MVA step-up transformers (2 x 3 single phase units = six (6) units));
 - Spare $\frac{735}{\sqrt{3}} - \frac{315}{\sqrt{3}} - 13.8$ kV 280 MVA step-up transformer (1 unit) assembled for long term storage and preservation, including ac power supply and connection of the containment basin to the oil recovery tank;
 - Grounding reactors and resistors (two (2) units).

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- p) Supply, installation and Commissioning of 735 kV AIS equipment, the 315 kV GIS and all other electrical equipment as shown on drawings referenced in Section 1.3(b), including circuit breakers, disconnect switches, grounding switches, surge arresters, instrument transformers, auxiliary service transformers, MV switchgear, LV switchgear and panel board, batteries, chargers, buswork, steel structures, grounding connections, cabling, the control and protection systems, etc.;
- q) Supply and installation of galvanized steel structures such as busbar gantries, equipment support for post insulators, voltage transformers, current transformers, surge arresters, shield wire mast, etc. (circuit breakers and disconnect switches to be supplied with its own supports);
- r) Supply and installation of shield wires for lightning protection;
- s) Supply and installation of busbar materials including, insulator strings, connectors, flexible and rigid conductors, corona rings, insulators, etc.;
- t) Supply and installation of jumpers from the following incoming transmission lines to the substation equipment:
 - 735 kV link feeders connecting the 735 kV substation extension and the new 735 kV switchyard;
 - 315 kV transmission lines L3101 and L3102.
- u) Supply and installation of lighting poles as required, fixtures, junction boxes, including lighting control panels;
- v) Supply and installation of the following control and protection systems:
 - Two (2) 735 kV busbar protection, redundant A and B (differential protection with two (2) protection terminal ends located at the 735 kV substation extension and 735-315 kV substation, covering the protection of B4 and B5 busbars);
 - Two (2) power autotransformer redundant protection, redundant A and B; basic monitoring system shall also be provided for the spare transformer;
 - Two (2) 315 kV busbar protection (B8 and B9), redundant A and B;



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- Two (2) 315 kV transmission line protection systems, redundant A and B;
 - Four (4) 315 kV busbar feeder protection (GIS TEE sections);
 - Breaker failure protection of all breakers;
 - Fault recorder;
 - Revenue class metering;
 - Control system architecture including Workstations "A" and "B", data servers, printers, routers, GPS receivers, including integration to substation equipment;
 - One (1) control panel per circuit breaker and associated disconnect and grounding switches;
 - Provision for future substation expansion (one additional diameter 315 kV), including the provision for the expansion of the GIS building, and
 - Single phase power transformer marshalling cabinet, current transformers and voltage transformers junction boxes;
- w) Supply and installation of redundant 125 Vdc and 48 Vdc batteries and battery chargers including distribution panels and fuse boxes;
- x) Supply and installation of Main LV switchgear; 600-208 V dry-type transformers and ac distribution panels 208-120 V;
- y) Supply and installation of LV control and power cables within the 735 kV switchyard, the 315 kV GIS and control and protection equipment, including cables from ac and dc distribution panels;
- z) Supply and installation of 13.8 kV cables, including terminations for:
- Connection of the tertiary winding of 735-315 kV power transformers to make the delta connection of windings;
 - Substation service transformers (two (2) feeders); and
 - Grounding reactors and grounding resistors (two (2) units).
- aa) Supply and installation of safety signs, equipment tagging plates, phase identification, bay identification (i.e. T1, T2, L3101, L3102, etc.);



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- bb) Surface preparation, protection coatings and paint applied on all applicable equipment and structures (other than buildings);
- cc) Performing QA/QC tests;
- dd) Commissioning Static Checks and Dynamic/System Commissioning as defined in the specification LCP-SN-CD-4000-EL-TS-0017-01;
- ee) Supply and storage of spare parts as defined in the specification LCP-SN-CD-4000-EL-LS-0002-01;
- ff) Supply and installation of commercial-grade furniture for offices, meeting room, control room, kitchen, toilets, including projectors, desks, tables, drawers, HMI specialised desks, tables, chairs, lockers, filing cabinets, drawing cabinets, specialized key boxes, etc.
- gg) Training as per the document No. LCP-SN-CD-4000-EL-TS-0001-01 "ac Substations - General Technical Requirements";
- hh) Supply and installation of MV switchgear; and
- ii) Supply and Installation of auxiliary service transformers (two (2) units).

2.4 Muskrat Falls Substation

The work for Muskrat Falls substation includes the supply and installation of a new 315 kV GIS assembly, which includes two (2) 315 kV transmission line feeders, four (4) 315 kV feeders connecting the power plant, four (4) 315 kV feeders connecting the HVdc converter station and two (2) 125 MVA power transformers feeder as shown in the reference drawings listed below.

Reference Drawings:

Drawing No.	Description
MFA-SN-CD-4300-EL-SL-0011-01	315-138kV Muskrat Falls Switchyard Single-Line Diagram 315-138 kV Switchyard
MFA-SN-CD-4300-EL-LT-0011-01	Muskrat Falls Substation - 315-138kV Switchyard Layout

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

2.4.1 Single-Line Diagram

The single-line diagram MFA-SN-CD-4300-EL-SL-0011-01 shows the arrangement of the 315 kV switchgear with two (2) 315-138 kV power autotransformers.

The 315 kV switchyard shall be of GIS technology and arranged in breaker-and-a-third configuration with two (2) power autotransformers feeders, four (4) line feeders connecting the power plant, and four (4) feeders connecting to the Converter Station and two (2) transmission lines Churchill Falls-Muskrat Falls.

The GIS and the GIS building shall be designed considering the future expansion of the substation as shown on the above referred single line diagrams and layout drawings.

The 138 kV switchyard will be implemented at later stage; therefore, only a provision for future substation expansion shall be provided.

2.4.2 Substation Layout

Drawing No. MFA-SN-CD-4300-EL-LT-0011-01 shows the layout of the 315 kV GIS building and the associated outdoor equipment. One (1) control building will house the control, protection, telecommunication and the MV and LV auxiliary service equipment. The 315 kV GIS shall be indoor, installed in a GIS building; Control building will be one-storey pre-engineered steel-structure building.

2.4.3 Description of Work

This Section 2.4.3 describes the Muskrat Falls Substation Work as an itemized list of activities. The described Work shall include, but not limited to, design, manufacturing, factory testing, packing, transportation to Site, loading and unloading, storing, preserving, installation, Commissioning Static Checks, Dynamic/System Commissioning; Trial Operation, Turnover and training. The civil work and building construction shall be done by CWC and BC respectively; however, Contractor shall retain the overall responsibility for the execution of the Civil Works in accordance with the Agreement, including cost, schedule, health, safety and environment performance and quality control risks during construction as more fully described in Exhibit 17 – Joint Cost Savings Initiative for Civil Works.

The following Work is included in the Muskrat Falls Substation; however, this list should not be considered limitative:

- a) Design of the final site grading and surface drainage system;

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- b) Design of the site drainage systems inside the fenced area and connection to the external drainage system of the fenced area, underground services, sump pits, sump pumps, etc.;
- c) Design all necessary potable water piping and installations in Control Building and to interface supply points as shown on drawings;
- d) Design all necessary sanitary sewage systems including septic tanks;
- e) Supply and installation of underground grounding grid, as well above ground connections to building structures, equipment, cubicles, structures, perimeter fence, lightning protection systems, overhead line shield wires, etc., as indicated on drawing N° LCP-SN-CD-4000-EL-DD-0008-01 "Guideline interface drawing – grounding interconnection with adjacent facilities";
- f) Design of substation chain-link fencing, including doors and gates;
- g) Design of the site landscaping and surface treatment, graveling access roads, parking areas;
- h) Design of foundations for the 315 kV outdoor equipment including gantries, post insulators, surge arresters, HV cable terminations, power autotransformers, auxiliary service transformers, grounding reactors, grounding resistors, and firewall;
- i) Design of transformer firewall;
- j) Design of cable trenches or ductbanks between the 315 switchyard and the GIS and Control Buildings for the installation of control and MV and LV power cables and the fibre optic cables. Construction of manholes for 25 kV cable and fibre optic cables within the switchyard area; refer to the Interface Drawing LCP-SN-CD-4300-EL-DD-0003-01;
- k) Supply and installation of HV XLPE cables (directly buried) from the GIS building to the cable terminations, including ring type CT's and associated equipment to the HV cables;
- l) Design of cable trenches, ductbanks and manholes for the installation of FOC between the Optical Ground Wire (OPGW) junction box located in the line gantries up to the cable trenches or new ductbanks; the FOC will be supplied and installed by Company's Other Contractors;
- m) Design of the oil containment and recuperation systems around all oil-filled equipment, including an oil containment pit connected to an underground water-oil separator so as to ensure the containment of any oil spills;

(CM) (TS)

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- n) Design of the control building, including design of foundations, raised floor, electrical distribution, fire detection, fire suppression and fire alarm systems, HVAC, interior lighting, plumbing, and supply and installation of furniture, shelves, etc. Control building shall comprise a control room, auxiliary room, clean agent room, telecommunication room, MV switchgear room, spare parts room, battery rooms, washrooms and a multi-purpose room, and other areas found necessary as a result of detail design of the substation;
- o) Design of 315 kV GIS building including design of foundations for the GIS building, for the GIS itself, associated cable entrances to building, cable vaults, HVAC, fire and gas detection systems; design shall consider the installation of SF6-air bushing and cable vaults for the installation of HV XLPE cables. The GIS building shall be designed considering the installation of four (4) complete diameters of breaker-and-a-third breaker configuration with associated crane as well as maintenance/tests area and provision for future building extension.
- p) Installation and testing of the following equipment supplied by Company's Other Contractors and under supervision of Company's Other Contractors:
 - Tap changer controller cabinet, supplied by PD0537;
 - Two (2) 315 kV-138 kV 125 MVA power transformers, supplied by PD0537; and
 - Two (2) grounding reactors and resistors, supplied by PD0537.
- q) Supply, installation and Commissioning of the 315 kV (GIS) switchgear, and all other associated electrical equipment as shown on drawings referenced in Section 1.3(b), including circuit breakers, disconnect switches, ground switches, surge arresters, instrument transformers, HV XLPE cables, HV cable terminations, auxiliary service transformers, MV switchgear, LV switchgear and panelboard, batteries, chargers, buswork, steel structures, grounding cabling, control and protection systems, etc.;
- r) Supply and installation of galvanized steel structures for the 315 kV outdoor equipment, such as gantries, support for post insulators, surge arresters, shield wire mast, etc. (circuit breakers and disconnect switches to be supplied with its own supports);
- s) Supply and installation of shield wires for lightning protection;

RS CM

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- t) Supply and installation of busbar materials including, insulator strings, connectors, flexible and rigid conductors, corona rings, insulators, etc.;
- u) Supply and installation of jumpers from the following incoming transmission lines to the substation equipment:
 - 315 kV transmission lines L3101 and L3102; and
 - 315 kV feeders G1, G2, G3 and G4 connecting the power plant.
- v) Supply and installation of lighting poles as required, fixtures, junction boxes, including lighting control panels;
- w) Supply and installation of the following control and protection systems:
 - Two (2) 315 kV transmission line protection systems, redundant A and B;
 - Two (2) 315-138-25 kV power transformer protection, redundant A and B;
 - Integration works of four (4) 315 kV generator feeder protection supplied and installed by Company's Other Contractors;
 - Integration works of two (2) converter transformer feeder protection supplied and installed by Company's Other Contractors;
 - Integration works of two (2) harmonic filter feeder protection supplied and installed by Company's Other Contractors;
 - 315 kV busbar protection (B1 and B2), redundant A and B;
 - Busbar feeder protections (for GIS TEE sections);
 - Breaker failure protection of all circuit breakers;
 - Fault recorder;
 - Control system architecture including workstations "A" and "B", data servers, printers, routers, GPS receivers, including integration to substation equipment;
 - One (1) control panel per circuit breaker and associated disconnect and grounding switches;




LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- Provision for substation expansion (one additional diameter 315 kV), including the provision for the expansion of the GIS building; and
 - Current transformers and voltage transformers junction boxes.
- x) Supply and installation of redundant 125 Vdc and 48 Vdc batteries and battery chargers including distribution panels and fuse boxes;
- y) Supply and installation of Main LV switchgear; 600-208 V dry-type transformers and ac distribution panels 208-120 V;
- z) Supply and installation of LV control and power cables within the 315 kV switchyard and GIS (including items listed in item k of this Section 2.4.3) and control and protection equipment, including cables from ac and dc distribution panels;
- aa) Supply and installation of 25 kV cables including terminations for:
- Incomers from the 315-138-25 kV power autotransformers (two (2) feeders);
 - Substation service transformers (two (2) feeders);
 - Grounding reactors and grounding resistors (two (2) units); and
 - Auxiliary service transformers of the converter station (two (2) feeders).
- bb) Supply and installation of safety signs, equipment tagging plates, phase identification, bay identification (i.e. T5, T6, L1301, etc);
- cc) Surface preparation, protection coatings and paint applied on all applicable equipment and structures (other than buildings);
- dd) Performing QA/QC tests;
- ee) Commissioning Static Checks and Dynamic/System Commissioning as defined in the specification LCP-SN-CD-4000-EL-TS-0017-01;
- ff) Supply and storage of spare parts as defined in the specification LCP-SN-CD-4000-EL-LS-0002-01;



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

gg) Supply and installation of commercial-grade furniture for offices, meeting room, control room, kitchen, toilets, including projectors, desks, tables, drawers, HMI specialised desks, tables, chairs, lockers, filing cabinets, drawing cabinets, specialized key boxes, etc.

hh) Training as per the document No. LCP-SN-CD-4000-EL-TS-0001-01 "ac Switchyards - General Technical Requirements";

ii) Supply and installation of MV switchgear; and

jj) Auxiliary service transformers (two (2) units).

2.5 Soldiers Pond Substation

The work for Soldiers Pond substation includes the construction of a new 230 kV substation which includes six (6) 230 kV transmission line feeders, three (3) 230 kV feeders connecting the synchronous condenser facility and four (4) 230 kV feeders connecting the HVdc converter station as shown in the reference drawings listed below.

Reference Drawings

Drawing No.	Description
ILK-SN-CD-4500-EL-SL-0007-01	230 kV Soldiers Pond Switchyard Single-Line Diagram 230 kV Switchyard
ILK-SN-CD-4500-EL-LT-0011-01	Soldiers Pond Substation - Layout 230 kV ac Switchyard - Plan View
ILK-SN-CD-4500-EL-SE-0003-01 to -07	Soldiers Pond Substation - Substation A-A to N-N

2.5.1 Single-Line Diagram

The single-line diagram No. ILK-SN-CD-4500-EL-SL-0007-01 shows the arrangement of the 230 kV switchyard.

The 230 kV switchyard shall be arranged in breaker-and-a-third configuration with three (3) feeders for Synchronous Condenser, four (4) feeders connecting to the Converter Station and six (6) transmission line feeders.

The substation shall be designed considering the future expansion of the substation as shown on the above referenced single-line diagram.




LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

2.5.2 Substation Layout

Drawing No. ILK-SN-CD-4500-EL-LT-0011-01 shows the layout of the 230 kV switchyard; this switchyard shall include one (1) control building which shall house the control, protection, telecommunication and the LV auxiliary service equipment. The control building shall be a one-storey pre-engineered steel-structure building.

2.5.3 Description of Work

This Section describes the Soldiers Pond substation Work as an itemized list of activities. The described Work shall include, but not be limited to, design, manufacturing, factory testing, packing, transportation to Site, loading and unloading, storing, preserving, installation, Commissioning Static Checks, Dynamic/System Commissioning, Trial Operation, Turnover and Training. The civil work and building construction shall be done by CWC and BC respectively; however, Contractor shall retain the overall responsibility for the execution of the Civil Works in accordance with the Agreement, including cost, schedule, health, safety and environment performance and quality control risks during construction as more fully explained in Exhibit 17 – Joint Cost Savings Initiative for Civil Works.

The following Work is included in Soldiers Pond substation; however, this list should not be considered limitative:

- a) Design of final site grading and surface drainage system;
- b) Design of site drainage systems inside the fenced area and connection to the external drainage system of the fenced area, underground services, sump pits, sump pumps, etc.;
- c) Design all necessary potable water piping and installations in control building and to interface supply points as shown on drawings;
- d) Design all necessary sanitary sewage systems including septic tanks;
- e) Supply and installation of underground grounding grid, as well above ground connections to building structures, equipment, cubicles, structures, perimeter fence, lightning protection systems, overhead line shield wires, etc. and interconnection with the grounding grids of the synchronous condenser and converter station, as indicated on Drawing no. LCP-SN-CD-4000-EL-DD-0008-01 "Guideline Interface Drawing – grounding interconnection with adjacent facilities";
- f) Design of substation chain-link fencing, including doors and gates;



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- g) Design site landscaping and surface treatment, graveling, access roads and parking areas;
- h) Design of foundations within the 230 kV switchyard including foundation for gantries, circuit breakers, disconnect switches, instrument transformers, surge arresters, post insulators, auxiliary service transformers, gantries, lighting fixtures, etc.;
- i) Design of cable trenches or ductbanks between the 230 kV switchyard and the control building for the installation of control and power cables and the fibre optic cables; construction of ductbanks for MV and LV cables, communication and fibre optic cables up to the interface points, including manholes or pulling cable boxes;
- j) Design of cable trenches and/or ductbanks for the installation of FOC between the Optical Ground Wire (OPGW) junction box located in the line gantries up to the cable trenches or new ductbanks; the FOC will be supplied and installed by Company's Other Contractors;
- k) Design of the control building including design of foundations, raised floor, electrical distribution, fire detection, fire suppression and fire alarm systems, HVAC, interior lighting, plumbing, supply and installation of furniture, shelves, etc. Control building shall comprise of a control room, auxiliary room, clean agent room, telecommunication room, washrooms, battery rooms, spare parts room and a multipurpose room, and other areas found necessary as a result of the detail design of the substation;
- l) Installation and testing of the following equipment supplied by Company's Other Contractors and under supervision of Company's Other Contractors:
 - Eight (8) 230 kV breakers associated with the converter transformers and harmonic filter feeders, supplied by CD0501.
- m) Supply, installation and Commissioning of all other electrical equipment as shown on drawings referenced in Section 1.3(b), such as circuit breakers, disconnect switches, surge arresters, instrument transformers, etc including all associated terminations and connections;
- n) Supply of nine (9) surge arresters including surge counters shall be free-issued to CD0534 for installation with the step-up transformers located at the synchronous condenser facility;




LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- o) Supply and installation of galvanized steel structures such as busbar gantries, equipment support for post insulators, voltage transformers, current transformers, surge arresters, shield wire mast, etc. (circuit breakers and disconnect switches to be supplied with its own supports);
- p) Supply and installation of shield wires for lightning protection;
- q) Supply and installation of busbar materials including, insulator strings, connectors, flexible and rigid conductors, corona rings, insulators, etc.;
- r) Supply and installation of jumpers from all the 230 kV transmission line to the substation equipment;
- s) Supply and installation of lighting poles as required, fixtures, junction boxes including lighting control panels;
- t) Supply and installation of control and protection panels for:
 - Six (6) 230 kV transmission lines protection system, redundant A and B;
 - Three (3) 230-15-25 kV synchronous condenser step-up transformers protection system, redundant A and B;
 - Integration works of four (4) converter transformers and filter bank feeders protection supplied and installed by Company's Other Contractors;
 - Busbar protection (B1 and B2), redundant A and B;
 - Supply and installation of point-on-wave control system associated with the synchronous condenser feeders;
 - Installation of point-on-wave control system associated with the converter transformer; (the point-on-wave controller will be free-issued to Contractor by CD0501);
 - Breaker failure protection of all breakers;
 - Fault recorder;
 - Control system architecture including workstations "A" and "B", data servers, printers, routers, GPS receivers, including integration to substation equipment;

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- One (1) control panel per circuit breaker and associated disconnect and grounding switches;
 - Provision for future substation expansion as shown on the single-line diagram; and
 - Installation of current transformers and voltage transformers junction boxes.
- u) Supply and installation of redundant 125 Vdc and 48 Vdc batteries and battery chargers including distribution panels and fuse boxes;
- v) Supply and installation of main LV switchgear; 600-208 V dry-type transformers and ac distribution panels 208-120 V;
- w) Supply and installation of LV control and power cables from 230 kV switchyard equipment, control and protection equipment, including cables from ac and dc distribution panels;
- x) Supply and installation of safety signs, equipment-tagging plates, phase identification, and bay identification (i.e. TL201, TL217, etc);
- y) Surface preparation, protection coatings and paint applied on all applicable equipment and structures (other than buildings);
- z) Performing QA/QC tests;
- aa) Commissioning Static Checks and Dynamic/System Commissioning as defined in the specification LCP-SN-CD-4000-EL-TS-0017-01;
- bb) Supply and storage of spare parts as defined in the specification LCP-SN-CD-4000-EL-LS-0002-01;
- cc) Commercial-grade furniture for offices, meeting room, control room, kitchen, toilets, including projectors, desks, tables, drawers, HMI specialised desks, tables, chairs, lockers, filing cabinets, drawing cabinets, specialized key boxes, etc.
- dd) Training as per the document No. LCP-SN-CD-4000-EL-TS-0001-01 "ac Substations General Technical Requirements"; and
- ee) Auxiliary service transformers (two (2) units).

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

2.6 Project Management

2.6.1 N/A

2.6.2 Organization

Contractor shall appoint a representative who shall be located in Contractor’s project office within the St. John’s area for the duration of the Work, including operation and maintenance support during ninety (90) days as defined in Section 2.13.

The Contractor’s Representative shall be fluent in English, and shall be a highly qualified and experienced Manager who represents Contractor on Site in all contractual, organizational, and technical matters to the entire construction work. Contractor shall also nominate an alternate for when Contractor’s Representative will not be available.

Contractor shall have the required staff at its project office and for the duration of the Work required for the management of the Agreement which shall include, but not limited to, administration of contracts, procurement, planning and scheduling, reporting, cost control, invoicing, etc. and all other related disciplines needed to satisfy the requirements of the Agreement. Furthermore, Contractor shall have a site organization in each Site, as described in Section 2.9.1.

2.7 Engineering

2.7.1 General

Contractor is responsible for performing all necessary design studies to ensure that the equipment to be supplied shall be fully functional and integrated to Company’s power systems, and suitable to operate in accordance with the requirements of the Specification. Contractor is also responsible to perform all necessary design for civil works, buildings and related HVAC and fire protection systems for each ac substation, all in accordance with Exhibit 17 – Joint Cost Savings Initiative for Civil Works.

Contractor shall describe the design control program that will be applied and whether the design activity is to be done by Contractor or its Subcontractor. All design input and output shall be reviewed prior to release to the next stage. Hold points shall be shown or indicated in the Quality Plan. In addition to design review, design verification shall be conducted to ensure that the design stage output meets the design stage input requirements.



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Contractor shall ensure that all design computations; design drawings and other design documents are properly controlled and checked prior to submission to Engineer. Design documents such as drawings, reports, calculation notes, etc. shall be signed by the person(s) who prepared, checked, and stamped them. The person who stamps drawings must be a professional engineer who is registered to practice engineering in the Province of Newfoundland and Labrador.

2.7.2 Engineering Staff

Contractor shall provide an engineering manager who will lead the engineering team of all disciplines in an integrated way. The engineering team can be located in the engineering’s team home office. Contractor shall have the responsibility to produce the engineering documents for the procurement of equipment and materials and provide support during the construction phase including Commissioning Static Checks and Dynamic/System Commissioning.

Contractor shall provide an engineering representative at Contractor’s project office in St. John’s to interface with Company, Engineer, Contractor’s engineering team and Subcontractors.


2.7.3 Equipment and System Specifications

Contractor may use the Technical Specifications referred in Section 1.3 b) for procurement of equipment and materials, with any necessary customization as may be required to ensure compliance with the Agreement. Technical Specifications developed or customized by Contractor and intended for the procurement of equipment shall be submitted to Engineer for review and Acceptance before proceeding with purchase order.

2.7.4 Design Studies

The design of all elements of substations, including, concrete works, steel structures, building structural design, equipment rating and parameters, etc. shall be based on design studies performed by Contractor. Design studies shall be in accordance with the requirements of the equipment technical specification LCP-SN-CD-4000-EL-DC-0001-01 – Engineering and Design Requirements.

Contractor shall ensure the safe and reliable performance of the equipment and systems under normal as well as abnormal system conditions.




LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

2.7.5 Substation Layout Design

Substation layout shall be designed by Contractor in compliance with Drawings and Technical Specifications referenced in Section 1.3; and in accordance with the requirements of the specification LCP-SN-CD-4000-EL-DC-0001-01 - Engineering and Design Requirements.

2.7.6 Control and Protection

Control and protection shall be designed by Contractor in compliance with the control and protection Drawings and Technical Specifications referenced in Section 1.3.

2.7.7 Civil Works Design

Civil Works shall be designed by Contractor in compliance with the civil Drawings and Technical Specifications referenced in Section 1.3.

2.7.8 Survey and Site Investigation

As part of the engineering phase, Contractor shall be responsible for all site investigations and surveys including but not be limited to, the following:

- a) Perform a site survey of the existing installations to which the new substation will be interfaced. Contractor shall be aware of the conditions of the existing facilities in order to carry out the engineering and procurement in accordance with the existing facilities and in order to provide a complete and functional system fully integrated with the existing facilities.
- b) Base the design on the existing installations particularities, for which, some modifications and upgrades may be required in order to adapt the existing facility to the interfaces with the substations.
- c) Perform further soil investigations and soil resistivity measurements in order to guarantee a reliable design of foundations and grounding system.
- d) Perform resistivity measurement once the substation surfaces have been levelled.

2.7.9 Mechanical Design

Mechanical work shall be designed by Contractor in compliance with the Drawings and Technical Specifications referenced in Section 1.3.

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

2.7.10 Base Design Phase

The base design phase of the Agreement shall be conducted in accordance with Exhibit 9 - Schedule. The purpose of the base design phase shall be to completely define the Work in adequate detail to satisfy Engineer that all requirements are being incorporated. Information developed during the base design shall be used as a guide throughout the Work and shall be considered binding on both Parties, unless operational difficulties or design flaws observed during detailed design review are noted and mandate change. All base design drawings shall be stamped as "Base Design Drawing."

Coordination meetings shall be conducted between Engineer and Contractor's design team on a regular basis until the design is complete. These meetings shall include, but are not limited to:

Major materials purchase requisitions (preliminary); and

Design calculations, design drawings and other documents.

The package shall be submitted to Engineer for review and Acceptance and shall be properly compiled in binders for all drawing sheets for civil, structural, electrical and mechanical drawings.

The base design submittal shall be complete, containing drawings and calculations of all disciplines as stated. Partial submittals or packages are unacceptable and shall be rejected. Base design shall include drawings required to define the Work and shall be prepared by Contractor and presented to Engineer before starting detailed engineering. Additional drawings, if provided, will not be reviewed during the base design phase.

2.7.11 Base Design Review

After completing the base design, Contractor shall present the base design package to Engineer for technical review along with the drawing control sheet in St-Johns' Company's office. During this meeting, Engineer's comments on the base design package shall be reviewed and discussed in detail to finalize the base design for the Work. Minutes of the meeting shall be prepared by Contractor and shall be subjected to the Acceptance of Engineer.

Contractor shall perform a constructability study including maintainability and operability analysis. The study shall be presented before starting detail engineering and shall be updated after completion of detail engineering.

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

2.7.12 Detailed Engineering

Contractor’s responsibility shall include, but not be limited to, the following items:

- a) The integration and interfacing with other facilities (i.e. transmission lines, adjacent AC substations, converter stations, Muskrat Falls power plant, synchronous condenser facility, Company’s Control Centres, etc.);
- b) Contractor’s developed design and specification of all equipment, systems and subsystems in the substations shall meet the requirements of Technical Specifications referenced in Section 1.3;
- c) Detailed engineering of civil and building work, including site survey and soil investigation, detailed engineering of control building, and other buildings (foundations, structure), architectural design (steel, cladding, finishing, services, etc.), foundations of outdoor installed equipment, transformers and all mechanical systems inherent to buildings;
- d) Substation building design including all electrical, protection and control, mechanical, and structural engineering, and construction and installation specifications;
- e) A Design Basis Specification shall be prepared for each item of equipment with a detailed technical specification of the equipment and the parameters, which shall be proven by tests. Contractor shall submit these reports, including calculations, to Engineer for review and Acceptance prior to the start of manufacturing.
 - Detailed design of all interfaces with the Company’s Other Contractors supplied equipment, services and facilities;
 - Supply of all drawings, cable schedules, point lists, protection setting sheets, etc.;
 - Supply of all digital devices (hardware) and licensed development software in order to allow Company and its Affiliates, on their own, to make changes and modifications when required. The electronic copies of the configuration files and the access codes shall also be submitted to Company;
- f) The design shall be adapted to Company’s specifications, local utility practices and comply with Applicable Laws;

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- g) All equipment and systems shall be provided with full documentation needed for operation and maintenance including, but not limited to, general arrangement drawing or layout with a list of components including information for material order, catalogues of each component, ac and dc diagrams, three-line diagrams, logic diagrams, and software (CD or DVD to be included), etc; and
- h) All models used for studies and testing shall be provided to Company, including full details of the parameters included in the models. The parameters provided in the models shall be fully open and accessible by Company. Encrypted or black box models will not be accepted.

2.7.13 Submittal of Documents

Contractor shall submit engineering documents, specifications, drawings, reports etc. as listed in the Exhibit 4 - Supplier Document Requirement List.

Submittal of documents is also described in Section 13 of the Technical Specification LCP-SN-CD-4000-EL-DC-0001-01 "ac Substation – Engineering and Design Requirement Technical Specification".

2.8 Procurement

2.8.1 Manufacturers / Suppliers

Contractor shall procure all major material items for the Work from Company Approved sources and in accordance with the requirements defined in Attachment B – List of Approved Suppliers.

Contractor shall ensure that purchase order(s) to manufacturers and suppliers contain all the applicable industry and Company developed standards and specifications.

Contractor shall ensure that purchase order(s) issued to Approved Subcontractors, manufacturers or suppliers are not re-assigned or subcontracted to other Subcontractors, manufacturers or suppliers without Company's Approval.

2.8.2 Transportation and Storage of Contractor's Items

Contractor shall be responsible for the delivery and storage (if required) of all Contractor's Items. The terms relating to the Site and transport route conditions are stated in the Article 22 of the Agreement. Furthermore Contractor shall be responsible for the following:

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- a) Preparation and packaging of all Contractor’s Items, plant and materials for shipment and protection from damage while in transit;
- b) Transportation of all Contractor’s Items to the Sites, including overseas and inland transportation, as well as for unloading, handling and storage of Contractor’s Items at the Sites;
- c) Monitoring as required during transportation;
- d) Setting up and maintenance of storage areas or warehouses on Sites for reception of Contractor’s Items before its installation;
- e) Coordination of shipping Contractor’s Items to Sites and the receipt at Sites; and,
- f) Storage and preservation of Contractor’s Items.

MSDS sheets shall accompany all hazardous material during shipping.

Contractor shall ensure that all transported parts, weights and sizes are adequate for loading, unloading and transport conditions and in accordance with the capability of local ports and local transportation companies.

Contractor acknowledges that it has performed the route survey and has fully familiarized itself with transportation routes with regards to obstructions and other limitations imposed along the routes etc.

Contractor shall provide preliminary reports on the logistics and transportation strategy that Contractor plans to undertake for the transportation of Contractor’s Items, together with the results of the route survey. An official logistics and transportation strategy shall be provided by Contractor to Company for review and Approval prior to shipment of any Contractor’s Items to the Sites.

A computer-based database logbook shall be kept by Contractor for all Contractor’s Items received at site.

Indoor equipment shall be stored indoor and under a controlled environment if required; while outdoor shall be stored in convenient area free of water flooding and sufficient space for the lifting and handling of machinery to manoeuvre. Materials shall be always laid on wooden supports; wooden supports shall be longer than material dimensions.

Electrical equipment or enclosure provided with space heaters shall be connected to a temporary power supply (power transformers, breakers, disconnect-switches, etc.).

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Once the Work has been completed, Contractor shall hand over to Company all remaining unused material and equipment along with the spare parts, instruments and tools included in the supply. Completeness and integrity of these components shall be one of the criteria to deliver the provisional turn-over certificate by Company.

2.9 Construction

2.9.1 General

- a) As a minimum, each Site shall have a complete staff of Site management, administration, quality control, procurement, reporting, cost control, health and safety, environment, field engineering, construction supervision and scheduling personnel shall be available at Site during construction;
- b) Contractor shall be responsible for the quality control during construction. All Work shall be planned, supervised, and reported in proper manner. Contractor shall assign a skilled engineer or officer to supervise site activities;
- c) Contractor shall construct and install all equipment, systems and services to be provided for the Work and shall be responsible for the provision of all construction labour, material and supervisory staff in accordance with the Specification;
- d) Contractor shall furnish all slings, special hoisting equipment, tools, jacks, braces and all materials, articles, supplies and construction equipment necessary for the proper installation or erection of the equipment;
- e) Contractor shall erect and install the equipment under ordinary job conditions and not necessarily those that it considers the most desirable. Inclement weather, the necessity of moving materials within the Work area and all other circumstances characteristic of construction operations are to be expected and shall not be considered to be a basis for claims for extension in time or for extra payment by Company;
- f) Contractor shall monitor and ensure that environmental conditions during installation of the equipment are suitable. This shall include ensuring that the area is generally clean and protected against ingress of dust, excessive sunshine and air drafts. Contractor shall ensure that the air in the work space is conditioned and maintained at ambient temperatures. Contractor may make provision for temporary buildings, shelters or other structures to facilitate the specified working conditions;

(CM) (TJ)

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

g) Contractor shall provide office spaces at each Site for Company’s site representative use.

2.9.2 Site Facilities

The following Drawings show the locations and dimensions of the Sites:

- Churchill Falls - 735-315 kV CF Switchyard Extension - Site Grading and Levelling - Drawing No. MFA-SN-CD-4100-CV-PL-0005-01;
- Muskrat Falls – Bulk Excavation Switchyard and Converter Station Plan - Drawing No. MFA-SN-CD-4300-CV-PL-0007-01; and
- Soldiers Pond - 230 kV Sp Switchyard and Converter Station Site Grading and Levelling - Drawing No. ILK-SN-CD-4500-CV-PL-0037-01.

2.9.3 Construction Power

Refer to Exhibit 12 – Site Conditions.

2.9.4 Water Supply

For temporary site and construction requirements, Contractor shall arrange its own water supply and water storage. A water tank of adequate capacity shall be installed for Site requirement during the construction stage of the Work.

2.10 Installation

Contractor shall construct and install all equipment, systems and services to be provided for the Work, and shall be responsible for the provision of all construction labour, material and supervisory staff in accordance with the Specifications as necessary to perform the Work.

Contractor shall furnish all materials and construction equipment necessary for the proper installation or erection of the equipment.

2.10.1 Field Testing / Inspection and Construction / Installation Control

Contractor shall implement a Quality Control system during construction in accordance with Exhibit 7 - Quality Requirements.

Contractor’s Work is also subject to Authority inspections and tests.

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

2.10.2 Independent Testing Laboratory

Contractor shall subcontract a Company Approved independent testing laboratory for material and field-testing services including, but not limited to, the following tests:

- a) Concrete strength tests;
- b) Soil testing and soil compaction tests;
- c) Steel structure welding and steel galvanizing inspection;
- d) Welding of aluminum tubular busbar;
- e) Oil sampling; and
- f) Environmental sampling.

Contractor shall instruct the independent testing laboratory to provide four (4) copies of the test results and reports directly to Engineer within three (3) days of the test completion. Test reports shall indicate the tested characteristics, test methods, acceptance criteria and applicable standard. The Agreement number and title shall be used as reference on all reports.

Contractor shall ensure that the independent testing laboratory does not re-assign any portion of their contracted testing Work.

Contractor shall provide Engineer a copy of the testing scope of work issued to and finalized with the independent testing laboratory.

Contractor shall make reasonable effort to obtain timely access by Company to the independent testing laboratory’s facility. Company and Engineer will have full access to the independent testing laboratory facility to witness any or all the tests and verify the calibration status of the testing equipment.

2.11 Shutdown / Outage Coordination

Planned outages of existing equipment and adjacent installation, which are required for Contractor’s Work, shall be minimized by Contractor during the execution.

Where outages of existing equipment at substation or outages on overhead lines cannot be avoided, Contractor shall coordinate all details of planned outages through Company with initial coordination during the Base Design stage of the Work and in accordance with the procedures stated in Exhibit 3 – Coordination Procedures.

(TS) Cam

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

As a part of Contractor’s coordination activity (for the planned outage), Contractor shall provide reasons, plans and detailed schedule for the planned outages that will be subject to Company’s review and Approval.

Company’s Approval of planned outages shall be based solely on Company’s operational considerations.

Contractor shall note that, as a minimum requirement, Company will consider Approval of Contractor’s proposed planned outages during low load periods, and at a scheduled time when Contractor shall provide enough manpower at the outage site(s) to minimize the planned outage time.

Hot work is not permitted unless Accepted by Engineer.

Contractor shall plan in advance the partial or complete outage of substations, bays, equipment and systems required for the installation of equipment or systems, integrations to the existing systems, Static Checks and Dynamic/System Commissioning, etc. Company will grant the outages considering operations constraints.

Any Work required to be done in existing installations, shall be carefully planned and scheduled in advance. Partial or total shutdown time shall be minimized as much as possible.

2.12 Station Tagging

Contractor shall affix station tags in accordance with the Technical Specification LCP-SN-CD-4000-EL-TS-0001-01 “Ac Switchyards General Technical Requirements” and LCP-SN-CD-0000-EN-PR-0002-01 – Service Codes and Equipment Tagging.

2.13 Completion

All equipment supplied by Contractor shall be comprehensively tested to demonstrate that it meets the specified requirements; refer to the document LCP-SN-CD-4000-EL-TS-0017-01 - ac Substation Testing and Commissioning Specification.

Commissioning Static Checks and Dynamic/System Commissioning of all sub-systems and components shall be carried out by Contractor.

For Commissioning Static Checks of the following equipment, the tests shall be supervised by the manufacturer’s specialist:

- a) Power autotransformers located at Churchill Falls and Muskrat Falls (supplied by Company’s Other Contractors);

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- b) GIS;
- c) 315 kV cable and accessories;
- d) HV circuit breakers (230 kV, 735 kV);
- e) HV disconnect switches (230 kV and 735 kV);
- f) Control and protection systems; and
- g) Fault recorder.

Other equipment can be tested by a specialized company with qualifications and experience in testing and commissioning with prior Company Approval or Engineer’s Acceptance.

Contractor shall also cooperate with Company’s Other Contractors in the commissioning of the protection systems of the converter stations, power plant, synchronous condensers, ac transmission lines and telecommunication systems.

As part of Contractor’s Quality Management Plan, Contractor shall perform testing on materials and equipment during or after installation; i.e. insulation testing of control and power cables before connection to equipment.

Contractor shall develop, and submit for Engineer’s Acceptance, a comprehensive Site Acceptance Testing (SAT) and Commissioning procedures, and commission the equipment to ensure that the supplied equipment performs as per the requirements and performance criteria defined in the Technical Specifications.

The testing, Commissioning and putting into commercial operation of said material, equipment and any other system shall be carried out in accordance with the requirements of the Technical Specification LCP-SN-CD-4000-40ES-9000 - Testing and Commissioning.

2.14 Support during Operation and Maintenance

Following the issuance of the Substantial Completion Certificate, Contractor shall provide qualified and experienced Personnel to provide fast response time to troubleshoot any problem related to the operation of the system. This assistance shall be made available to Company as follows:

- a) For the first ninety (90) days, minimum one (1) qualified Contractor engineer per substation shall be on Site during Company’s regular office hours and shall be available on-call 24/7 to be at each substation

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

within one (1) hour if required. The Contractor’s engineer shall be qualified to troubleshoot any problem;

- b) For the next nine (9) months, one (1) qualified Contractor engineer shall be available at Soldiers Pond substation during Company’s regular office hours and be available on call 24/7 to be in the Soldiers Pond Control Room within one (1) hour if required.

2.15 Provision for Future Substation Expansion

The substation shall be designed and built with provision for future substation expansion, for which the scope is shown in the single-line diagrams and layouts. The provision for future extension shall consider the following:

- The switchyard area reserved for future expansion and not exceeding the perimeter fences shown as defined in the substation layouts; shall be fully leveled, drained and covered with gravel;
- The switchyard area reserved for future expansion shall be free of underground installations, unless these are specifically destined to the substation expansion;
- At Muskrat Falls, cable trenches within the actually implemented switchyard shall be terminated at the border with the area reserved for future expansion, in order to extend the cable trenches toward the new yard with no interfering the operation of the actual switchyard; the cable trenches sizing shall consider also the cables destined to the substation expansion;
- Control building shall be designed considering the space for the equipment destined to the substation expansion; free space shall be reserved for the control and protection panels, ac, and dc distribution panels shall be provided with breakers for the future expansion equipment;
- Sizing of auxiliary service transformers and batteries shall consider the loads of the future expansion equipment;
- At Churchill Falls (735 kV) in the area where future installation of HV equipment is specified, temporary Buswork is included in the Contractor's scope including foundations required to support the temporary Bus (i.e. where future circuit breaker and associated equipment will be installed at later stage and temporary bus connection is required at this stage). Such buswork foundations shall be designed taking into consideration the equipment to be installed at the ultimate stage considering substation extension.

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

3 INTERFACES WITH OTHERS

This Section describes the Work of the various contracts performed by Contractor and Company’s Other Contractors. It involves interface points from different parties, who will each have a share of responsibility. This Section is not intended to be a detailed and complete list. Contractor shall develop a strategy and work plan to perform the interfaces and in accordance with Exhibit 3 – Coordination Procedures.

Contractor shall be responsible for coordinating and managing all interfaces associated with the Work for telecommunications systems, control and protection systems, roads, water connections, sewer connections, construction power, high and low voltage ac/dc infeeds, and all other interfaces.

Company will be involved in the following activities:

Approval of the design and implementation of interfaces; and

Managing and coordinating external Interfaces between Contractor and Company’s Other Contractors.

3.1 Interface with Gateway for Energy Control Center Operation

As defined in the Technical Specification LCP-SN-CD-4000-EL-TS-0021-01 “Control System for AC Substations” and Drawings No. MFA-SN-CD-4100-EL-SM-0001-01 “735-315 kV Churchill Falls Extension Control System Architecture”, MFA-SN-CD-4100-EL-SM-0002-01 “735 kV Interface Relay Building Control System Architecture”, MFA-SN-CD-4300-EL-SM-0001-01 “315-138 kV Muskrat Falls Switchyard Control System Architecture” and ILK-SN-CD-4500-EL-SM-0001-01 “230 kV Soldiers Pond Control System Architecture”, there is a provision for remote monitoring of the substation from the ECC/BCC.

Contractor shall collaborate with Company and its Subcontractor for the configuration and commissioning of the SCADA/EMS system upgrade of the ECC/BCC in order to successfully integrate the new installations into the existing system including the interface activities listed in Table 3-1.

Table 3-1: List of Interfaces with Gateways

Item No.	Description	By Contractor	By Company	Interface Point* & Remarks
a)	List of I/O to be interfaced with ECC/BCC as	<input checked="" type="checkbox"/>		

(Handwritten initials: C1, 5)

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company	Interface Point* & Remarks
	per Approval Company's format			
b)	Supply and installation of two panels with gateways	<input checked="" type="checkbox"/>		
c)	Programming of the gateways	<input checked="" type="checkbox"/>		
d)	Programming of the routers	<input checked="" type="checkbox"/>		
e)	Programming of IEDs within the Ethernet network to be linked with the gateways for non operational data (Remote Control with Manufacturer Software, Asset Management, etc.)	<input checked="" type="checkbox"/>		
f)	Telecommunication link between the substation and the ECC/BCC		<input checked="" type="checkbox"/>	
g)	Integration Work at the ECC/BCC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Contractor shall collaborate for the configuration of the SCADA system at ECC/BCC
h)	End-to-end tests between the field equipment and the substation control system	<input checked="" type="checkbox"/>		
i)	End-to-end tests of all signals interchanged between the substation and the ECC/BCC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
* Interface point is cross-referenced with the number of Interface drawing in Attachment A				

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

3.2 Interface with Converter Stations

The interfaces between Contractor’s Work and the converter station contractor (CD0501) are described in Table 3-2. The list of interfaces applies to Muskrat Falls and Soldiers Pond substations unless otherwise indicated.

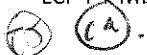
Table 3-2: List of Interfaces with Converter Stations (Muskrat Falls and Soldiers Pond)

Item No.	Description	By Contractor	By Company’s Other Contractors	Interface Point* & Remarks
a)	Connection of the 315/230 kV feeders from switchyard to the converter stations including strain bus and insulator strings at both ends. CD0501 will supply and install gantries inside the converter stations and will complete final terminations at the strain bus	<input checked="" type="checkbox"/>		MF IP391 SP IP591 Link to be terminated at converter gantry
b)	Contractor shall provide space in the ac substation control room for the installation of protection panels to be supplied and installed by CD0501	<input checked="" type="checkbox"/>		IP015
c)	Supply and installation of “A” and “B” protection panels destined to the protection of the converter transformer and harmonic filter feeders and to be installed in the substation control room (see Item b)		<input checked="" type="checkbox"/> CD0501	IP015 8 protection panels
d)	Supply and installation of the fibre optic cables between the ODFs located at the Substation and the Converter Station to be supplied and installed by CD0510 (including ODFs)		<input checked="" type="checkbox"/> CD0510	IP014
e)	Cabling and connection of CT, VT and tripping	<input checked="" type="checkbox"/>		IP011



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Naicor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	circuits from equipment to the panels provided by CD0501 and described in Item c).			
f)	Contractor shall provide the breakers for the ac and dc power supplies required by CD0501 at the substation ac/dc distribution panels. Contractor shall install the required cables from the distribution panels to protection panels supplied and installed by CD0501. Cable termination at CD0501 supplied protection panels will be done by CD0501.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0501	IP012
g)	Integration Work of protection panels described in Item c) into the substation control and protection system, fully integrated to the substation control system including power supplies (ac, dc), inter-tripping, interlocking, alarm, signalling etc.)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0501	IP013
h)	Supply and installation of teleprotection terminals at the converter station and ac substation sides, including design and integration		<input checked="" type="checkbox"/> CD0501	IP016
i)	Supply and installation of control system of feeders associated with the converter and harmonic filter feeders	<input checked="" type="checkbox"/>		dwg LCP-SN-CD-4000-EL-DD-0009-01
j)	Interchange of status and alarm signals shall be integrated in the substation and converter control systems (HMI screens, visibility of adjacent installation, status of adjacent	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0501	Each contractor shall initiate the Interface process based on their



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	equipment, status of MV switchgear, alarms, etc.)			requirements
k)	Soldiers Pond Temporary common fence between the substation and the converter station, including gate(s) to be built by CD502	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IP507A
l)	Muskrat Falls Road connecting the substation with the converter station will be done by Company's Other Contractors (CH0006)			Road removed from the Scope
m)	Muskrat Falls Ductbanks between the converter station and the substation for fibre optic cables and MV cables. Interface manholes located at the converter station area to be built by CD0501.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0501 and CWC	IP309/IP301/IP306 Construction in substation area by CWC
n)	Soldiers Pond Ductbanks between the converter station and the substation for fibre optic cables and MV cables	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0501	IP502/IP522 Construction in substation area by CWC
o)	Muskrat Falls Connection of the Converter Station grounding grid to the substation grounding grid. CD0501 to build a removable link to be installed in an inspection box	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0501 and CWC	IP312A Trenching (excavation and backfilling) by CWC
p)	Muskrat Falls	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IP312

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	Connection of the Power Plant grounding grid to the substation grounding grid by power plant contractor. CD0502 to build a removable link to be installed in an inspection box		Power Plant contractor and CWC	Link box by CWC
q)	Muskrat Falls 25 kV Cable supply and installation from switchyard to converter station including terminations at both ends	<input checked="" type="checkbox"/>		IP302
r)	Soldiers Pond 25 kV Cable supply and installation from synchronous condenser passing through the switchyard to converter station including termination		<input checked="" type="checkbox"/> CD0534	IP504
s)	Muskrat Falls Tripping signal originated by the auxiliary service transformers to be sent to the MV switchgear located in the substation. Soldiers Pond Tripping signal originated by the auxiliary service transformers to be sent by CD0501 to the MV switchgear located in the synchronous condenser facility Civil infrastructure (cable trenches, conduits cable boxes, etc.) to be provided for each contractor (CD0501, CWC, CD0534) within each of their	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0501 and CWC	MF & SP: CD0501 to design intertrip signal hardwired or by teleprotection

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	respective area			
t)	Soldiers Pond Piping for water supply (domestic water)		<input checked="" type="checkbox"/> CD0501 and CWC/BC	IP513 CD0501, Contractor and CD0534 shall install the required pipes within their respective areas
u)	Soldiers Pond Access to converter station during construction		<input checked="" type="checkbox"/> CD0501	Access to CD0501 site shall be independent from CD0502. See drawing LCP-SN-CD-4500-CV-DD-0009-01
v)	Connection of the converter station grounding grid to the substation grounding grid, CWC shall build a link box within the substation area CD0501 to connect the converter station grounding grid to the link box		<input checked="" type="checkbox"/> CD0501 and CWC	IP509A
w)	Soldiers Pond: Supply of eight (8) circuit breakers associated with the converter transformers and harmonic filters		<input checked="" type="checkbox"/> CD0501	IP017 Breakers to be free-issued by CD0501 to Contractor for

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
				installation
x)	Soldiers Pond Design by CD0502 and construction by CWC of foundations and installation of eight (8) circuit breakers associated with the converter transformers and harmonic filters	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CWC	IP017 Contractor shall install the circuit breakers under supervision of CD0501
y)	Soldiers Pond Integration works of the eight (8) circuit breakers associated with the converter transformers and harmonic filters to the substation control and protection system	<input checked="" type="checkbox"/>		IP017 Including cabling to control and protection systems
z)	Point-on-wave system associated with the converter transformers Cabling and connections required to implement the POW to be completed by Contractor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0501	IP018 CD0501 to hand-over POW controllers to Contractor for installation in their panels, including integration Work
aa)	Contractor to provide the Ethernet switch communication ports, including cables, to link the protection relays provided by CD0501 into the CD0502 control system for remote interrogation, fault alarms and fault recorder.	<input checked="" type="checkbox"/>		IP019



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
bb)	LV cables (control, protection, interlock, etc.) between the converter station and the ac substation, to be supplied and installed by CD0501		<input checked="" type="checkbox"/> CD0501	IP524
cc)	Completion (Commissioning) activities shall be coordinated with Company's Other Contractors	<input checked="" type="checkbox"/>		Note 1
dd)	Commissioning of circuit breakers, protection systems and POW associated with the converter transformers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0501	Contractor shall assist CD0501

* Interface point is cross-referenced with the number of Interface Drawing in Attachment A

Notes:

Note 1 Completion (Commissioning) activities shall be planned and scheduled by the owner of the equipment or system. Company's Other Contractors have the responsibility to assist the Contractor responsible for the execution of tests and Commissioning

3.3 Interface with Churchill Falls Power Plant

The interfaces between Contractor's Work and the Churchill Falls power plant are described in Table 3-3.

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Table 3-3: List of Interfaces with Churchill Falls Power Plant

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
a)	Design and construction in compliance with Company's requirements, engineering shall be done by Contractor subject to Company's Approval	<input checked="" type="checkbox"/>		IP101
b)	Work permits from Company to work on the existing and near to the existing 735 kV switchyard	<input checked="" type="checkbox"/>		IP101 Company will assist Contractor
c)	Extension of the 735 kV busses B135 and B246. The interface of busses shall be done by welded connection as shown in detail 1 drawing No. MFA-SN-CD-4100-EL-SE-0006-01.	<input checked="" type="checkbox"/>		IP102
d)	Attachment of grounding wires in the existing 735 kV bus gantries. Design and details shall be done by the Contractor at the engineering stage	<input checked="" type="checkbox"/>		IP103
e)	Site grading of the areas designated to the extension of the existing 735 kV switchyard and the areas designated to the new 735-315 kV switchyard and fencing.		<input checked="" type="checkbox"/> CD0503	IP104
f)	Finishing Work, installation of insulating gravel of the extended switchyard area and construction of roadways inside the switchyard area	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CWC	IP104 Design by Contractor
g)	Existing cable trench shall be extended to the interface control building by concrete encased	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IP105 Contractor shall

③ CM -

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	ductbank. Design by Contractor, construction by CWC		CWC	check space available in the existing trenches, subject to Company Approval
h)	Company shall designate the breakers for ac and dc power supplies of the new control building. Contractor shall install new breakers in the existing ac and dc distribution panels if needed and install the cables from the existing control building to the interface control building	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Company [CF(L)Co]	IP106 Installation or replacement of breakers may be required by contractor
i)	Cable supply and installation for the ac and dc power supplies from the existing switchyard to the Interface building	<input checked="" type="checkbox"/>		IP106
j)	Interface control building will interface with the existing 735 kV switchyard equipment by fibre optic link only (except ac and dc power supplies). Interface control building will also link with the new 735-315 kV substation by fibre optic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CWC/BC	IP107 Construction of ICB by CWC.
k)	CD0510 to terminate the fibre optic cable in the existing ODFs or to supply ODF if non-existing or unavailable. Company [CF(L)Co] shall define the location of IP108 interface point. CD0510 shall supply and install the fibre optic cable from the interface control building up to the IP108	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0510	IP108 Contractor shall provide ducts/trenches, etc.

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	including all related Works to complete the telecom interface			
l)	Replacement of busbar protection and Interface Works at the existing switchyard control building	<input checked="" type="checkbox"/>		Acceptance required from CF(L)Co.
m)	Control of tie breaker and associated disconnect from power plant and from the new 735-315 kV control building	<input checked="" type="checkbox"/>		CF(L)Co and Company shall have control of tie breakers
n)	CD0502 to extend the existing grounding grid covering the 735 kV substation extension to be submitted to Company/CFLCo for acceptance: Design and installation of grounding grid to be done by CD0502 trenching and backfilling by CWC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CWC	IP109
o)	CD0502 to provide to CD0510 during engineering stage, the final layout of the substation and control building to design the layout of telecommunication equipment	<input checked="" type="checkbox"/>		IP121
p)	CD0510 to develop the layout of location of telecommunication related equipment (CD0510 Scope) that shall be installed in the AC switchyard area and in the control building. DC0510 to provide also the requirements for		<input checked="" type="checkbox"/> CD0510	IP122



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	the installation of conduits and other cabling related facilities in the switchyard area and in the substation building.			
q)	Completion (Commissioning) activities shall be coordinated with Company's Other Contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1
<p>* Interface point is cross-referenced with the number of Interface Drawings in Attachment A</p> <p>Notes:</p> <p>Note 1 Completion (Commissioning) activities shall be planned and scheduled by the owner of the equipment or system. Company's Other Contractors have the responsibility to assist Contractor responsible for the execution of tests and Commissioning</p>				

3.4 Interface with Muskrat Falls Power Plant

The interfaces between Contractor's Works and the Muskrat Falls power plant are described in Table 3-4.

Table 3-4: List of Interfaces with Muskrat Falls Power Plant

Item No.°	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
a)	Connection of the four (4) 315 kV feeders from the switchyard to the power plant. Attachment point at gantries for conductors, OPGW by Contractors. Jumpers to equipment by Contractor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Transmission Line Contractor	IP307 By transmission line contractor
b)	Provide space in the substation control room	<input checked="" type="checkbox"/>		IP335

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.°	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	for the installation of protection panels installed by Company's Other Contractors			Protection of 315 kV feeders
c)	Supply and installation of "A" and "B" protection panels destined to the protection of the 315 kV feeders connecting the power plant and shall be installed in the substation control room - see item b)		<input checked="" type="checkbox"/> CH0030	By power plant contractor
d)	Cabling and connection of CT, VT and tripping circuits to the panels described in Item c)	<input checked="" type="checkbox"/>		IP331
e)	Contractor shall provide the breakers for the ac and dc power supplies required by CH0030 at the substation ac/dc distribution panels. Contractor shall install the required cables from the distribution panels to protection panels supplied and installed by CH0030. Cable termination at CH0030 supplied protection panels will be done by CH0030	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CH0030	IP332
f)	Integration Works of protection panels described in Item c) into the substation control and protection system, fully integrated to the substation control system including power supplies (ac, dc), intertripping, interlocking, alarm, signalling etc.)	<input checked="" type="checkbox"/>		IP333 By Contractor



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.°	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
g)	Control system of 315 kV feeders destined to the interconnection with the power plant	<input checked="" type="checkbox"/>		
h)	Supply and installation of the fibre optic cables between the ODFs located at the Substation and the Power Plant to be supplied and installed by CD0510 (including ODFs)		<input checked="" type="checkbox"/> CD0510	IP334
i)	Interchange of status and alarm signals shall be integrated in the substation and converter control systems (HMI screens, visibility of adjacent installation, status of adjacent equipment, status of MV switchgear, alarms, etc.)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Each contractor shall initiate the interface process based on its requirements
j)	MV cables destined to Company's Other Contractors (i.e. accommodation camp) shall be done by Company's Other Contractors, including the cable termination at the MV switchgear		<input checked="" type="checkbox"/>	IP308
k)	Ductbanks and manholes between the power plant and the substation for fibre optic cables: Design ductbanks and manhole located in the substation area by CD0502 Construction within the substation area including manhole by CWC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Power plant Contractor and CWC	IP303 Interface point: substation fence

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.º	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
l)	<p>Connection of the Power Plant grounding grid to the substation grounding grid, including the construction of a removable link shall be installed in a manhole</p> <p>Design and installation of grounding grid to be done by CD0502</p> <p>trenching and backfilling and construction of link box by CWC</p>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Power plant Contractor and CWC	IP312 Manhole by Contractor, connection to power plant by Power Plant contractor
m)	<p>Contractor shall carry-out a design study for the grounding grid of the overall station included in its scope of Work, based on an integrated grounding grid comprising the adjacent facility's grounding grid. The study shall also consider the short-circuit contribution of all stations. The grounding study requires coordination among other contractors which shall be done at the engineering stage.</p>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0501 and power plant contractor	IP311
n)	<p>Teleprotection</p> <p>CH0030 shall implement teleprotection system between both facilities including design and integration works</p>		<input checked="" type="checkbox"/> CH0030	IP336
o)	<p>CD0502 will provide the Ethernet switch communication ports to link the protection relays provided by CH0030 into the CD0502 control system for remote interrogation,</p>	<input checked="" type="checkbox"/>		IP337

CS CM

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.°	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	fault alarms and fault recorder. CD0502 will provide and install the required data cable from the Ethernet switch to the CH0030 panels			
p)	Domestic water CWC to tap from the domestic water lines that will be built by power plant contractor. CWC Scope includes piping from this tap point to ac switchyard control building.		<input checked="" type="checkbox"/> CWC	IP341 IP342
q)	Completion (Commissioning) activities shall be coordinated with Company's Other Contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1

* Interface point is cross-referenced with the number of Interface Drawing in Attachment A

Notes:

Note 1 Completion (Commissioning) activities shall be planned and scheduled by the owner of the equipment or system. Company's Other Contractors have the responsibility to assist Contractor shall be responsible for the execution of tests and Commissioning

3.5 Interface with Soldiers Pond Synchronous Condenser

The interfaces between Contractor's Work and the synchronous condenser facility are described in Table 3-5.

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Table 3-5: List of Interfaces with the Synchronous Condenser Facility

Item No.°	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
a)	Connection of the three (3) 230 kV feeders (phase conductors and ground wires) from the switchyard to the synchronous condenser.	<input checked="" type="checkbox"/>		IP549
b)	Installation of the jumper connecting the overhead line to the step-up transformer bushings and surge arresters, including connectors (except connectors of transformer bushings which are supplied with the transformers)		<input checked="" type="checkbox"/> CD0534	IP550A IP548A
c)	Contractor shall provide space in the substation control room for the installation of protection panels to be supplied and installed by CD0534	<input checked="" type="checkbox"/>		IP535 6 protection panels
d)	Supply and installation of "A" and "B" protection panels destined to the protection of the 230 kV feeders		<input checked="" type="checkbox"/> CD0534	IP535 IP536
e)	Supply and installation of the fibre optic cables between the ODFs located at the Substation and the Converter Station to be supplied and installed by CD0510 (including ODFs)		<input checked="" type="checkbox"/> CD0510	IP534
f)	Connection of field CT, VT and tripping circuits from field equipment to the panels provided by CD0534 and described in Item D).	<input checked="" type="checkbox"/>		IP531
g)	Contractor shall provide the breakers for the ac and dc power supplies required by CD0534 at	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0534	IP532



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.°	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	the substation ac/dc distribution panels. Contractor shall install the required cables from the distribution panels to protection panels supplied and installed by CD0534. Cable termination at CD0534 supplied protection panels will be done by CD0534.			
h)	Integration Work of protection panels described in Item d) into the substation control and protection system with the substation control system including power supplies (ac, dc), inter-tripping, interlocking, alarm, signalling etc.)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0534	IP533
i)	25 kV cable supply and installation from the switchgear located at the synchronous condenser connecting to the substation auxiliary service transformers, including terminations at both ends		<input checked="" type="checkbox"/> CD0534	IP503
j)	Interchange of status and alarm signals shall be integrated in the substation and synchronous converter (HMI screens, visibility of adjacent installation, status of adjacent equipment, status of MV switchgear, alarms, etc.)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0534	Each contractor shall initiate the interface process based on their requirements
k)	Ductbanks between the synchronous condenser and the substation for the MV cables 25 kV ductbanks within the substation area, design by Contractor, construction by CWC; CD0534 to build all 25 kV ductbanks within the	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0534 and CWC	IP501

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.°	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	synchronous condenser area; CD0534 to build two (2) interface MV cable manholes close to the synchronous condenser boundary			
l)	Ductbanks between the synchronous condenser and the substation for fibre optic and LV cables LV ductbanks within the substation area, design by Contractor, construction by CWC CD0534 to build all LV ductbanks within the synchronous condenser area; CD0534 to build two (2) interface LV cable manholes close to the synchronous condenser Boundary	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0534 and CWC	IP521
m)	Connection of the synchronous condenser grounding grid to the substation grounding grid, link box within the substation area, design by Contractor, construction by CWC CD0534 to connect synchronous condenser grounding grid to the link box	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0534 and CWC	IP509B
n)	Potable water supply Synchronous condenser facility will provide pressurized potable water to converter station and substation. Piping will be routed through the converter station area.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0534, CD0501 and CWC/BC	IP513 IP512

①
CM

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.°	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	Piping within the substation area: design by contractor, supply of material and construction by CWC Piping in the Synchronous condenser area by CD0534.			
o)	(Deleted)			
p)	(deleted)			
q)	Temporary fence between the synchronous condenser facility and the substation		<input checked="" type="checkbox"/> CD0534	IP507
r)	CD0502, shall supply and free-issued to CD0534 nine (9) 230 kV surge arresters to be installed and tested by CD0534 with the step-up transformers located at the synchronous condenser area.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0534	IP550
s)	LV cables (control, protection, interlock, etc.) between the Synchronous Condenser and the ac substation, to be supplied and installed by CD0534		<input checked="" type="checkbox"/> CD0534	IP525
t)	Teleprotection CD0534 shall implement teleprotection system between both facilities including design and integration works		<input checked="" type="checkbox"/> CD0534	IP536
u)	CD0502 will provide the Ethernet switch	<input checked="" type="checkbox"/>		IP537

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.°	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	communication ports to link the protection relays provided by CD0534 into the CD0502 control system for remote interrogation, fault alarms and fault recorder. CD0502 will provide and install the required data cable from the Ethernet switch to the CD0534 panels			
v)	Completion (Commissioning) activities shall be coordinated with other contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1
<p>* Interface point is cross-referenced with the number of Interface Drawing in Attachment A</p> <p>Notes:</p> <p>Note 1 Completion (Commissioning) activities shall be planned and scheduled by the owner of the equipment or system. Company's Other Contractors have the responsibility to assist Contractor shall be responsible for the execution of tests and Commissioning</p>				

3.6 Interface with Transmission Lines

The interfaces between Contractor's Work and the transmission line contractor are described in Table 3-6.

Table 3-6: List of Interfaces with Transmission Lines

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
a)	Loading of substation gantries Line gantry capacity shall be determined by CD0502 based on the requirements of the technical specification, on the actual substation layout and the transmission dead-	<input checked="" type="checkbox"/>		IP001

TS
CA

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	end tower locations and based on the worst environmental conditions. Single design (standard) of gantries per voltage level shall be applicable to all substations and applications. Design of gantry shall consider the TL (Conductor and shield wires) loads indicated on this drawing, in addition to the loads of the substation busbar			
b)	Termination of transmission lines and ground wires at the substation line gantries		<input checked="" type="checkbox"/> Note 2	IP-001, IP002, IP006
c)	Contractor shall install the jumper connecting the transmission line to the substation equipment. Contractor shall supply the adequate hardware according the line conductor type and size.	<input checked="" type="checkbox"/>		IP003
d)	Termination of OPGW in a junction box located at the substation gantry		<input checked="" type="checkbox"/> Note 2	IP004
e)	Installation of non-metallic fibre optic cable between the OPGW termination box up to the telecommunication room		<input checked="" type="checkbox"/> CD0510	IP004 IP373 IP573
f)	Churchill Falls and Muskrat Falls Cable conduits / trenches, trays between the OPGW termination box up to the telecommunication room, design by CD0502,	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CWC	IP005

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
	construction by CWC.			
g)	Transmission line contractor shall terminate the line counterpoise in the link box built by CD0502		<input checked="" type="checkbox"/> Note 2	IP007
h)	315 kV interconnection link between the substation and the power plant to be supplied and installed by transmission line contractor. The attachment point at the substation gantry for conductors, OPGW and GW shall be supplied and installed by CD0502. Jumpers from the interconnection link and the substation equipment by CD0502.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IP307
i)	315 kV interconnection link between the substation and the converter station busbar gantry to be supplied and installed by CD0502 including insulator strings and associated hardware. The jumper between the interconnection link and the converter station equipment shall be supplied and installed by CD0501	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0501	IP391
j)	Completion (Commissioning) activities shall be coordinated with other contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1
* Interface point is cross-referenced with the number of Interface Drawing in Attachment A				

6

em

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By Company's Other Contractors	Interface Point* & Remarks
----------	-------------	---------------	--------------------------------	----------------------------

Notes:

Note 1: Completion (Commissioning) activities shall be planned and scheduled by the owner of the equipment or system. Company's Other Contractors have the responsibility to assist Contractor shall be responsible for the execution of tests and Commissioning

Note 2: By transmission line contractor

3.7 Communication Interfaces

The interfaces between Contractor's Works and the telecommunication system contractor (CD0510) are described in Table 3-7. The list of interfaces applies to Churchill Falls, Muskrat Falls and Soldiers Pond substations unless otherwise indicated.

Table 3-7: List of Interfaces with Telecommunication System

Item No.°	Description	By Contractor	By Other Contractors	Interface Point* & Remarks
a)	Layout of the building	<input checked="" type="checkbox"/>		IP111/116 IP351/356 IP551/556
b)	Layout of telecommunication room showing the telecommunication equipment and defining the requirements		<input checked="" type="checkbox"/> CD0510	IP112 IP352 IP552
c)	Construction / installation of cable related conduits, cable trenches, cable trays, including the embedded conduits in walls, ceiling, raised floor, etc. required for the installation of telecommunication related equipment.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CWC/BC	IP113/115 IP353/355 IP553/555

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.°	Description	By Contractor	By Other Contractors	Interface Point* & Remarks
d)	Supply and installation of 48 Vdc redundant system comprising batteries, battery chargers and distribution panels	<input checked="" type="checkbox"/>		IP114 IP354 IP554
e)	Telecommunication room, finished with lighting, HVAC, fire detection and protection, cable trays for telecommunication cables, etc	<input checked="" type="checkbox"/>		IP117 IP357 IP557
f)	Installation of telecommunication equipment in the telecommunication room.		<input checked="" type="checkbox"/> CD0510	IP374 IP574
g)	208/120 Vac distribution breakers available for telecommunication equipment.	<input checked="" type="checkbox"/>		IP118 IP358 IP558
h)	Supply and installation of fibre optic cables between Contractor supplied equipment to the telecommunication equipment and termination at the ODFs located in the telecommunication room	<input checked="" type="checkbox"/>		IP119 IP 359 IP559 IP014 IP334 IP534
i)	Cabling from the ac and dc distribution panels to the telecommunication equipment by CD0510, Contractor to provide the LV circuit breakers at the distribution panels.		<input checked="" type="checkbox"/> CD0510	IP379 IP579
j)	Fibre optic cable from the OPGW splicing box located in the substation line gantry up to the telecommunication equipment located in the control room		<input checked="" type="checkbox"/> CD0510	IP004

6

cu

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.°	Description	By Contractor	By Other Contractors	Interface Point* & Remarks
k)	Churchill Falls Fibre optic cable between the Interface Control Building and the telecommunication room of the existing power plant		<input checked="" type="checkbox"/> CD0510	IP108
l)	Muskrat Falls Fibre optic cable between substation and the Power Plant		<input checked="" type="checkbox"/> CD0510	IP304/IP375
m)	Muskrat Falls and Soldiers Pond Fibre optic cable between substation and the Converter Station		<input checked="" type="checkbox"/> CD0510	IP523 & IP014 Drawing LCP-SN-CD-4000-EL-DD-0009-01
n)	Soldiers Pond Fibre optic cable between substation and the synchronous condenser		<input checked="" type="checkbox"/> CD0510	IP526 & IP575 Drawing ILK-SN-CD-4500-EL-DD-0023-01
o)	Facilities (conduits, cable trenches, cable trays etc.) between substations and adjacent facilities, design by Contractor, construction by CWC:			
	• Churchill Falls (Interface with existing switchyard)	<input checked="" type="checkbox"/>		IP105
	• Soldiers Pond (interface with synchronous condenser)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0534 and CWC/BC	IP521
	• Soldiers Pond (interface with converter)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IP522

CA

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.°	Description	By Contractor	By Other Contractors	Interface Point* & Remarks
			CD0501 and CWC/BC	
	• Muskrat Falls (interface with converter)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CD0501 and CWC/BC	IP309
	• Muskrat Falls (interface with power plant)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Power Plant Contractor and CWC/BC	IP303
p)	CCTV, SACS, PA, telephony, data CD0510 shall supply, install and test the building telecom cabling and wiring including the digital distribution frame (DDF) in the telecom room and the telecom outlets (TOs) at the work area or end device.		<input checked="" type="checkbox"/> CD0510	IP113/IP123 IP353/IP380 IP553/IP580
q)	CCTV, SACS, PA, telephony, data Equipment to be supplied and installed by CD0510 including connection to the telecom outlets		<input checked="" type="checkbox"/> CD0510	IP376 IP576
r)	CD510 to supply and install the cables from the DDF to the telecommunication equipment		<input checked="" type="checkbox"/> CD0510	IP377 IP577
s)	CD0510 will supply and install the cables from the DDT to the telecom equipment.		<input checked="" type="checkbox"/> CD0510	

73

CD

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.°	Description	By Contractor	By Other Contractors	Interface Point* & Remarks
t)	Completion (Commissioning) activities shall be coordinated with other contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1
<p>* Interface point is cross-referenced with the number of Interface Drawing in Attachment A</p> <p>Notes:</p> <p>Note 1: Completion (Commissioning) activities shall be planned and scheduled by the owner of the equipment or system. Company's Other Contractors have the responsibility to assist Contractor responsible for the execution of tests and Commissioning</p> <p>Note 2: Power Plant contractor</p>				

3.8 Interface with Remote Substations at Soldiers Pond

The interfaces between Contractor's Work and remote adjacent substations are described in Table 3-8.

Table 3-8: List of interfaces of Soldiers Pond with Remote Substations

Item No.	Description	By Contractor	By other contractors	Interface Point* & Remarks
a)	Design of line protection at Soldiers Pond shall be coordinated with the line protection in remote substations	<input checked="" type="checkbox"/>		
b)	Upgrade of remote stations to fit with the new protection system in Soldiers Pond		<input checked="" type="checkbox"/> Note 2	
c)	Completion (Commissioning) activities shall be coordinated with other contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1
<p>* Interface point is cross-referenced with the number of Interface Drawing in Attachment A</p> <p>Notes:</p> <p>Note 1: Completion (Commissioning) activities shall be planned and scheduled by the owner of the equipment or</p>				

TJ
Ca

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Item No.	Description	By Contractor	By other contractors	Interface Point* & Remarks
	system. Company's Other Contractors have the responsibility to assist Contractor shall be responsible for the execution of tests and Commissioning			
	Note 2: By Company			

3.9 Interface with Supplier of Power Transformers

Power transformers, grounding reactors and neutral resistors will be supplied by Company's Other Contractors. The interfaces are defined in the following interface drawings:

- Churchill Falls: LCP-SN-CD-4100-EL-DD-0004-01
- Muskrat Falls: LCP-SN-CD-4300-EL-DD-0004-01
- Soldiers Pond: ILK-SN-CD-4500-EL-DD-0022-01

3.10 Interface with CWC/BC

The scope of work of CWC is defined in Exhibit 17 – Joint Cost Savings Initiative, and the interfaces are defined in this Exhibit 1 - Scope of Work document. Furthermore, the following table shows additional details of the construction interfaces between Contractor and CWC and/or BC.

Table 3-9: List of Interfaces with CWC/BC

Interface CD0502 and CWC/BC				
No.	Description	By Contractor	By CWC/BC	Remarks
a)	Cable trays in cable trenches including grounding of cable trays	<input checked="" type="checkbox"/>		
b)	Cable trays in control room, including grounding of cable trays	<input checked="" type="checkbox"/>		
c)	Interior lighting of buildings, including outdoor lighting attached to building walls		<input checked="" type="checkbox"/>	

(F) (ch)

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Interface CD0502 and CWC/BC				
No.	Description	By Contractor	By CWC/BC	Remarks
d)	Outdoor lighting fixtures including cabling	<input checked="" type="checkbox"/>		
e)	Excavation and backfilling for the installation of directly buried HV cables in the switchyard, including suitable backfilling material, mechanical protection of cables, plastic cover, signs, etc.		<input checked="" type="checkbox"/>	
f)	Excavation, and compacted backfilling required for the grounding grids and raisers including construction of grounding link boxes (activity to be coordinated with Contractor)		<input checked="" type="checkbox"/>	
g)	Supply and installation of grounding conductors for grounding grid and raisers, including welding of conductors below grade	<input checked="" type="checkbox"/>		
h)	Connection of all above mounted structures, including SCWC supplied equipment (buildings, fences, lighting poles, HVAC, metallic parts of building, metallic ladders, stairs, etc.) including supply and installation of clamps, supports, connectors, etc.	<input checked="" type="checkbox"/>		
i)	Supply and installation of all outdoor steel structures, supports, cable supports, platforms with steps and guards, grounding mats, etc.	<input checked="" type="checkbox"/>		
j)	Supply and installation of steel structures related to the GIS	<input checked="" type="checkbox"/>		
k)	Supply and installation of steel works		<input checked="" type="checkbox"/>	

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Interface CD0502 and CWC/BC				
No.	Description	By Contractor	By CWC/BC	Remarks
	associated to the building: ladders, covers, steps, guards, catwalks, etc.			
l)	Grouting of foundations after installation of structures		<input checked="" type="checkbox"/>	
m)	Sealing of openings in manholes, buildings, etc after installation of cables.	<input checked="" type="checkbox"/>		
n)	Supply of anchor bolts to be embedded in foundations	<input checked="" type="checkbox"/>		
o)	Installation of anchor bolts		<input checked="" type="checkbox"/>	
p)	Building Structure Building structure shall be suitable for the installation of overhead crane		<input checked="" type="checkbox"/>	
q)	Supply and installation of travelling crane in the GIS building, including the service maintenance platform and catwalk ladder	<input checked="" type="checkbox"/>		
r)	Supply and installation of supporting frames (required in raised floor rooms) for all panels and enclosures to be installed in the Relay Room and the Auxiliary Service Room	<input checked="" type="checkbox"/>		
s)	Supply and installation of raised floor		<input checked="" type="checkbox"/>	
t)	Supply and installation of supporting frames for panels and cabinets to be installed in the control room and auxiliary service room to match with the raised floor design	<input checked="" type="checkbox"/>		

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Interface CD0502 and CWC/BC				
No.	Description	By Contractor	By CWC/BC	Remarks
u)	Cable trenches and underground cable conduits in the switchyard area, terminated at the foundation level		<input checked="" type="checkbox"/>	
v)	Cable conduits above surface required for cabling to equipment, enclosures etc. including fittings	<input checked="" type="checkbox"/>		
w)	Housekeeping of buildings after handover to Contractor (CD0502)	<input checked="" type="checkbox"/>		

4 WORK EXCLUDED

This Section 4 describes the works performed by Company or Company’s Other Contractors.

For Work interfacing with substations, Contractor shall coordinate all Work and construction interface activities with Company’s Other Contractors and Company as necessary for successful completion of all interface activities by Company’s Other Contractors.

4.1 Items to be Supplied by Company

The following items will be supplied by Company:

- a) Permits as outlined in Exhibit 6 - Environmental and Regulatory Compliance Requirements;
- b) Environmental Impact Assessment reports;
- c) Access roads and rough grading at all Sites as shown on Drawings listed in Technical Document List ILK-SN-CD-4500-EN-LS-0001-01;
- d) Earthworks consisting of Site grading, levelling and construction of access roads will be performed by Company’s Other Contractors (CD0503). Relevant Drawings related to Site work are listed in Technical Document List ILK-SN-CD-4500-EN-LS-0001-01;

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

- e) Upgrade work at remote substations (Holyrood, Western Avalon, Hardwoods, Oxen Pond) to fit the control and protection systems with new control and protection systems;
- f) Upgrade of ECC/BCC;
- g) Accommodation Camp for lodging of Contractors personnel as defined in Exhibit 12 – Site Conditions;
- h) Rerouting of the 13.8 kV line at Churchill Falls; and
- i) At Churchill Falls and Muskrat Falls, Company will supply to Contractor insulating gravel and granular fill in sufficient quantity.

Furthermore, Company will supply the following:

- Supply, delivery and unloading of power transformers onto Contractor transformer foundation.
- Supply and delivery of transformers accessories such as bushings, radiators, coolers, on-load tap-changers when specified, insulating oil, etc.; and
- Supply, delivery and unloading - grounding reactors and neutral grounding resistors onto Contractor foundations.

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

ATTACHMENT A

List and Interface Drawings

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Attachment A - List and Interface Drawings

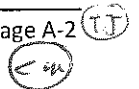
The Drawings listed in Attachment A are complementary information provided to Contractor to define the Work of Contractor.

No.	Drawing No.	Title
1	ILK-SN-CD-4500-CV-DD-0009-01	Interface Drawing – Soldiers Pond – Substation Temporary Site Facilities and Lay Down Area
2	ILK-SN-CD-4500-CV-DD-0010-01	Interface Drawing – Soldiers Pond – 230 kV and 25 kV Feeders and Related Civil Works
3	ILK-SN-CD-4500-CV-DD-0011-01	Soldiers Pond – Guideline Interface Sketch Potable and Fire Protection Water Supply and Distribution
4	ILK-SN-CD-4500-EL-DD-0021-01	Interface Drawing – Soldiers Pond LV and Fibre optic Cable Ducts Between Facilities
5	ILK-SN-CD-4500-EL-DD-0022-01	Interface drawing – Step-up transformer connection to 230 kV line and IPB
6	ILK-SN-CD-4500-EL-DD-0023-01	Interface Drawing - SP Synchronous condenser feeder protection
7	ILK-SN-CD-4500-EL-DD-0024-01	Interface Drawing – Soldiers Pond – Layout – Converter Station and 230 kV AC Switchyard
8	ILK-SN-CD-4500-TE-DD-0001-01	Interface Drawing - CCTV, SACS and Telecommunication
9	ILK-SN-CD-8210-TE-DD-0001-01	Interface Drawing – Muskrat Falls Converter Station – Telecommunication Interface
10	ILK-SN-CD-8220-TE-DD-0001-01	Interface Drawing – Soldiers Pond Converter Station – Telecommunication Interface
11	LCP-SN-CD-4000-EL-DD-0006-01	Interface Drawing – CF, MF and SP - TL connection to Substation
12	LCP-SN-CD-4000-EL-DD-0008-01	Soldiers Pond and Muskrat Falls Station – Guideline Interface Sketch – Grounding Interconnection with Adjacent Facilities
13	LCP-SN-CD-4000-EL-DD-0009-01	Interface Drawing – Muskrat Falls and Soldiers Pond – Converter

①
②

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

No.	Drawing No.	Title
		Feeder Protection
14	LCP-SN-CD-4100-EL-DD-0002-01	Interface Drawing 0 CF substation extension - Integration to the existing switchyard and related works
15	LCP-SN-CD-4100-EL-DD-0004-01	Interface Drawing - 735 kV-315-13.8 kV power autotransformers and associated equipment
16	LCP-SN-CD-4100-TE-DD-0001-01	Interface Drawing - CF, 735 kV and 315 kV switchyard - CCTV, SACS and telecommunication sh. 1/2
17	LCP-SN-CD-4100-TE-DD-0002-01	Interface Drawing - CF, 735 kV and 315 kV switchyard - CCTV, SACS and telecommunication sh. 1/2
18	LCP-SN-CD-4300-CV-DD-0001-01	Interface Drawing – Converter Station and AC Substation – Temporary Site Facilities and Lay Down Area
19	LCP-SN-CD-4300-CV-DD-0002-01	Interface Drawing – Muskrat Falls Water Supply and Sewage System
20	LCP-SN-CD-4300-EL-DD-0001-01	Interface Drawing – Muskrat Falls Layout – Converter Station and 315 kV-138 kV ac Switchyard
21	LCP-SN-CD-4300-EL-DD-0003-01	Interface Drawing – Muskrat Falls Converter Station and AC Switchyard 25 kV – LV and Telecom Cable 25 kV Feeder and LV Ducts Between Converter and Switchyard
22	LCP-SN-CD-4300-EL-DD-0004-01	Interface Drawing - 315-138-25 kV power autotransformer and associated equipment
23	MFA-SN-CD-4100-CV-DD-0008-01	Interface Drawing - CF Temporary Site Facilities and Laydown area
24	MFA-SN-CD-4300-EL-DD-0022-01	Interface Drawing – Muskrat Falls Substation – Power Plant Feeder Protection
25	MFA-SN-CD-4300-TE-DD-0001-01	Interface Drawing - MF substation CCTV, Substation access system and telecommunication



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

Cross-Reference of Interface Points with Interface Drawings

LCP-SN-CD-4000-EL-DD-0006-01	LCP-SN-CD-4100-EL-DD-0004-01
IP001	IP131
IP002	IP132
IP004	IP133
IP005	IP134
IP006	IP135
IP007	IP136
	IP137
LCP-SN-CD-4000-EL-DD-0009-01	IP138
IP011	IP139
IP012	IP140
IP013	IP141
IP014	IP142
IP015	IP143
IP016	IP144
IP017	
IP018	ILK-SN-CD-4500-EL-DD-0022-01
IP019	IP136A
IP020	IP139A
	IP140B
LCP-SN-CD-4100-EL-DD-0002-01	IP144A
IP101	IP145
IP102	
IP103	LCP-SN-CD-4300-EL-DD-0003-01
IP104	IP301
IP105	IP302
IP106	IP303
IP107	IP304
IP108	IP306
IP109	IP307
	IP308
LCP-SN-CD-4100-TE-DD-0002-01	IP309
IP111	
IP112	LCP-SN-CD-4000-EL-DD-0008-01
IP113	IP311
IP114	IP312
IP115	IP312A
IP116	
IP117	LCP-SN-CD-4300-EL-DD-0022-01
IP118	IP331
IP119	IP332
IP120	IP333
	IP334
LCP-SN-CD-4100-TE-DD-0001-01	IP335
IP121	IP336
IP122	IP337
IP123	

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
		Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3

LCP-SN-CD-4300-CV-DD-0002-01

- IP341
- IP342
- IP343
- IP344

ILK-SN-CD-4500-CV-DD-0010-01

- IP501
- IP502
- IP503
- IP504
- IP507
- IP507A

MFA-SN-CD-4300-TE-DD-0001-01

- IP351
- IP352
- IP353
- IP354
- IP355
- IP356
- IP357
- IP358
- IP359

LCP-SN-CD-4000-EL-DD-0008-01

- IP509A
- IP509B
- IP509C
- IP509D

ILK-SN-CD-8210-TE-DD-0001-01

- IP371
- IP372
- IP373
- IP374
- IP375
- IP376
- IP377
- IP378
- IP379
- IP380
- IP381
- IP382

ILK-SN-CD-4500-CV-DD-0011-01

- IP511
- IP513
- IP516

ILK-SN-CD-4500-EL-DD-0021-01

- IP521
- IP522
- IP523
- IP524
- IP525
- IP526

LCP-SN-CD-4300-EL-DD-0001-01

- IP391
- IP392

ILK-SN-CD-4500-EL-DD-0023-01

- IP531
- IP532
- IP533
- IP534
- IP535
- IP536
- IP537

LCP-SN-CD-4300-EL-DD-0004-01

- IP391A
- IP392A
- IP393
- IP394
- IP396
- IP397
- IP398
- IP399
- IP400
- IP401
- IP402
- IP403
- IP404

ILK-SN-CD-4500-EL-DD-0022-01

- IP541
- IP542
- IP543
- IP544
- IP545
- IP546
- IP547
- IP548
- IP548A
- IP549
- IP550
- IP550A

<p>LOWER CHURCHILL PROJECT</p>	<p>ac SUBSTATIONS Scope of Work Specification</p>	<p>Rev</p>	<p>Date</p>
	<p>Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01</p>	<p>D3</p>	<p>12-Nov-2014</p>

ILK-SN-CD-4500-TE-DD-0001-01

IP551

IP552

IP553

IP554

IP555

IP556

IP557

IP558

IP559

ILK-SN-CD-4500-EL-DD-0024-01

IP591

IP592

IP593

IP594

ILK-SN-CD-4500-CV-DD-0010-01

IP594

ILK-SN-CD-8220-TE-DD-0001-01

IP571

IP572

IP573

IP574

IP575

IP576

IP577

IP578

IP579

IP580

IP581

IP582

<p>LOWER CHURCHILL PROJECT</p>	<p>ac SUBSTATIONS Scope of Work Specification</p>	<p>Rev</p>	<p>Date</p>
	<p>Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01</p>	<p>D3</p>	<p>12-Nov-2014</p>

ATTACHMENT B

List of Accepted Suppliers

This list defines the equipment, manufacturers and factory locations of equipment technically acceptable by Company; deviation of this requirement is not acceptable; alternative offer can be proposed by Contractor subject to Company's review and Approval.

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

LIST OF APPROVED SUPPLIERS AND MANUFACTURING PLANTS

ITEM	EQUIPMENT DESCRIPTION	MANUFACTURER	FACTORY LOCATION	REMARKS
1	Circuit Breakers			
1.1		ABB	Sweden	
1.2		Siemens	Germany	
1.3		Alstom	France	
2.0	CT/MVT			
2.1		ABB	Sweden	
2.2		Trench Siemens	Germany, Canada	
2.3		Alstom	France	
2.4		Pfiffner	Switzerland	up to 550 kV
2.5		Ritz	Germany	
3.0	Surge Arrestors			
3.1		ABB	Sweden	
3.2		Siemens	Germany	
3.3		Trideita	Germany	
3.4		Ohio Brass	USA	up to 400kv
3.5		Cooper	USA	up to 400kV
4.0	Disconnect Switches			
4.1		Alstom	France	
4.2		HAPAM	Netherland	
4.3		Coelme-EGIC	Italy	
4.4		Siemens	Germany	
5.0	Post Insulators			
5.1		NGK	Japan	
5.2		LAPP	USA	
5.3		Seves Power Insulators	Austria	(SEDIVER + PPC)
5.4		Macleam Power Systems	USA	Up to 500 kV

LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

LIST OF APPROVED SUPPLIERS AND MANUFACTURING PLANTS

ITEM	EQUIPMENT DESCRIPTION	MANUFACTURER	FACTORY LOCATION	REMARKS
6.0	MV Switchgear			
6.1		Eaton		
6.2		ABB		
7.0	LV 600V Switchgear/MCC			
7.1		Eaton		
7.2		ABB, MaxSG series		
8.0	600V MCCs			
8.1		Eaton, Freedom MCC 2100		
8.2		ABB, MNS-MCC series		
9.0	Emergency Diesel Generator			
9.1		Cummins Power		
9.2		CAT		
10.0	Multi-Function Digital Meter			
10.1		Electro Industries, Shark 200		
10.2		Power Measurement ION 7330		Preferred
11.0	UPS (Inverter)			
11.1		Gentec		Gentec is preferred, other suppliers are also acceptable
12.0	Fire Alarm System			
12.1		Edwards, model IO500GD		
12.2		MIRCOM, FX-2001-6K model		
12.3		Notifier		
13.0	Distribution panels			
13.1		Eaton		
13.2		ABB		
14.0	Safety Switches & disconnects			
14.1		Eaton		Heavy duty with window



LOWER CHURCHILL PROJECT	ac SUBSTATIONS Scope of Work Specification	Rev	Date
	Nalcor Doc. No. LCP-SN-CD-4000-EL-SP-0002-01	D3	12-Nov-2014

LIST OF APPROVED SUPPLIERS AND MANUFACTURING PLANTS

ITEM	EQUIPMENT DESCRIPTION	MANUFACTURER	FACTORY LOCATION	REMARKS
15.0	Protection Relays			
15.1		Schweitzer	USA	Preferred for primary protection group "A")
15.2		ABB	Sweden	
15.3		Siemens	Germany	
15.4		GE Multilin	Canada	
15.5		Alstom	France	
16.0	Bay Control Unit			
16.1		Schweitzer	USA	
16.2		ABB	Sweden	
16.3		Siemens	Germany	
16.4		Alstom	France	
16.5		GE Multilin	Canada	
17.0	Digital Fault Recorder			
17.1		Mehta Tech	USA	Preferred
17.2		BEN 6000 from Qualitrol	USA	Qualitrol acquired LEM
18.0	Fault Locator			
18.1		Hathaway from Qualitrol	USA	Qualitrol acquired Hathaway

Exhibit 2
Compensation
Agreement Number: CD0502-001

EXHIBIT 2
COMPENSATION

T5
CM

1.0 GENERAL

- 1.1 Company shall compensate Contractor for the Work, in accordance with the provisions of this Agreement. Subject to any additional compensation pursuant to a Change Order, only those lump sum amounts, unit rates and prices specifically identified in this Exhibit 2 shall be paid by Company to Contractor for the Work and costs not specifically identified in this Exhibit 2 are deemed to be included in such lump sum amounts, unit rates and prices for the Work. Company does not guarantee a minimum or a maximum amount of Work.
- 1.2 All lump sum amounts, unit rates and prices stated in this Exhibit 2 shall be fully inclusive of all amounts, rates and prices for Contractor's performance of the Work and all of its obligations under this Agreement.
- 1.3 No payment in excess of the Contract Price will be made without a formal Change Order to the Agreement.
- 1.4 Invoices shall be issued by Contractor in accordance with Article 12 of the Agreement, Exhibit 2 – Compensation, Exhibit 3 – Coordination Procedures and Exhibit 13 – Provincial Benefits.

2.0 FIXED LUMP SUM

- 2.1 The following provisions in this Section 2 apply only to Work completed on a lump sum basis.
- 2.2 Where applicable, all of the payment items for Work completed on a lump sum basis are stated in Appendix A – Schedule of Price Breakdown of this Exhibit. All such payment items are fixed prices and their aggregate total shall form the fixed lump sum price of this Agreement.
- 2.3 Lump sum items stated in Appendix A – Schedule of Price Breakdown shall include all elements necessary to achieve completion of the item, whether specifically identified, or whether inherent in the Work.
- 2.4 Pursuant to Article 12 of the Agreement, payment for each item shall be on a lump sum basis and shall be made progressively as the Contractor has satisfied the requirements of each payment item.
- 2.5 If required by the Company, the Contractor shall submit to the Company, before making its application for payment under this Agreement, an Acceptable schedule of values of the various parts of the Work and totalling the full amount of the fixed lump sum price. Such schedule of values shall be a more detailed breakdown of Appendix A - Schedule of Price Breakdown. Subject to the Articles of Agreement and other provisions in this Exhibit 2, the schedule of values shall be used as a guideline for applications by the

Contractor for payment.

- 2.6 Measurement of any Work items paid on a lump sum basis shall be undertaken on a monthly basis (or as otherwise required by Company) by Contractor and Company. Each lump sum price shall be based on Work sub-divided into Payment Milestones, each with its value as specifically identified in this Exhibit 2. Progress achieved against each Payment Milestone and Approved by Company shall form the basis of interim measurement and payment of each lump sum price. Only Approved lump sum progress or Payment Milestone measurements shall form the basis of invoices of Contractor.

3.0 UNIT PRICES

- 3.1 The following provisions in this Section 3 apply only to Work completed on a unit price basis.
- 3.2 Where applicable, full compensation for unit price Work shall be determined in accordance with the unit prices set forth in Appendix A - Schedule of Price Breakdown of this Exhibit 2, or as otherwise agreed in writing between Company and Contractor (the "Unit Prices").
- 3.3 Any quantities of units estimated are not guaranteed, and payment shall only be for actual quantities of Work installed and not any estimated quantities. There shall be no adjustment of the Unit Prices due to installed quantity variances (increases/decreases) from the estimated quantities.
- 3.4 Measurement of any Work items paid on a unit price basis shall be undertaken on a monthly basis (or as otherwise required by Company) by Contractor and Company. Such measurement shall form the basis of all progress and final payments for such Work items. Only Approved unit price measurements shall form the basis of invoices of Contractor.
- 3.5 Unless otherwise specifically stated, all Unit Prices shall be complete and inclusive of profit and all costs (including site and head office overheads) required for the Work.

4.0 REIMBURSABLE WORK

- 4.1 The following provisions in this Section 4 apply only to Work completed on a reimbursable basis. Contractor shall obtain prior Approval of Company before commencing any such Work. Company will not be responsible for any amounts whatsoever in relation to such Work which has not been so Approved prior to its commencement.
- 4.2 Where applicable, full compensation to Contractor for full and complete performance of any Work performed on a reimbursable basis shall be the sum of the following costs (which include mark-ups for all overheads and profit) exclusive of HST:

- (a) Sum of Contractor's Labour Rates, as detailed in Appendix D – Personnel Rate Schedule, multiplied by Approved hours of Work, detailed on Approved timesheets;
- (b) Sum of Contractor's Equipment Rates, as detailed in Appendix E – Equipment Rate Schedule, multiplied by Approved hours of use, detailed on Approved timesheets; and
- (c) pre-Approved material expenses, travel and mileage expenses, and third party expenses.

Contractor shall advise Company in writing when it has expended seventy-five percent (75%) of the total estimated price for such reimbursable Work as stated in this Exhibit 2.

The labour and equipment rates stated in the Appendices of this Exhibit 2 will not be adjusted for any reason whatsoever except as a result of the issuance of a Change Order by Company.

The Contractor shall not be compensated for any Contractor's Personnel not identified in Appendix D – Personnel Rate Schedule.

4.3 When Contractor is requested to purchase materials on a reimbursable basis:

- (a) All actual costs to Contractor for materials supplied for incorporation into the permanent facility to which the Work applies (including those costs related to transportation to the Site) shall be at actual invoiced cost to Contractor (exclusive of HST) as substantiated by invoices certified as paid or by such documentation as may be required by Company, plus a mark-up of five percent (5%); provided that each consumable, expendable and small tool which costs Contractor less than \$2,000.00 Canadian each, and all consumables, expendables and small tools listed in Appendix D - Personnel Rate Schedule, shall not be reimbursed by Company.
- (b) To be eligible for reimbursement, invoicing for third party supplied materials shall be fully supported by Billing Information and any other documentation that Company may reasonably require.
- (c) Company reserves the right to provide, at no cost to Contractor, materials, equipment, services, supplies or incidentals required to perform the Work.

4.4 When Contractor is requested to supply equipment on a reimbursable basis:

- (a) All costs of Contractor for Contractor-owned equipment shall be at the rates set forth in Appendix E – Equipment Rate Schedule.

CM TD

- (b) When Contractor's equipment does not resemble the equipment having rental rates listed in Appendix E – Equipment Rate Schedule, the rate of such equipment shall be determined insofar as it is practical to do so, in accordance with and in the manner provided for in the latest revised edition of the publication of the Government of Newfoundland and Labrador, Department of Works, Services and Transportation, Highway Design Division's Form 1000 entitled "Newfoundland Equipment Rental Schedule" at the time of the Effective Date.
- (c) All costs of Contractor, exclusive of HST, for equipment which is rented from third parties and does not resemble the equipment having rental rates listed in Appendix E – Equipment Rate Schedule must be Approved prior to rental and shall be at actual cost, exclusive of HST, to Contractor, including transportation to the Site, as substantiated by invoices certified paid or by such documentation as may be required by Company, plus a mark-up of five percent (5%).
- (d) To be eligible for reimbursement, invoicing for third party equipment shall be fully supported by Billing Information and any other documentation that Company may reasonably require.
- (e) For reimbursable equipment, Company reserves the right to substitute and provide, at no cost to Contractor, equipment to perform the Work. Contractor shall not be allowed to claim for loss of profit and/or any of its own costs resulting from such substitution by Company.

4.5 When Contractor requires third party services (including Subcontractors) to assist with Work being performed on a reimbursable basis:

- (a) Contractor shall secure pre-Approval of any third party services, materials, tools, supplies and consumables that are required for the performance of the Work and are additional to that which is included in Appendix A - Schedule of Price Breakdown, Unit Prices and lump sum amounts, rates and prices outlined herein. Company shall reimburse Contractor for the actual, documented and necessary costs (exclusive of HST) of such materials, tools, supplies, consumables, equipment and/or services.
- (b) All third party services provided by others for performance of the Work which have been previously Approved shall be at actual cost to Contractor, exclusive of HST, of such third party services plus a mark-up of five percent (5%).
- (c) In no instance shall the third party rates plus mark-up exceed Contractor's rates for similar services.
- (d) To be eligible for reimbursement, invoicing for third party services shall be fully supported by Billing Information and any other documentation that Company

may reasonably require.

- 4.6 When Contractor requires labour for Work being performed on a reimbursable basis:
- (a) All costs of Contractor for such labour shall be at the rates set forth in Appendix D - Personnel Rate Schedule, which rates include a mark-up for overhead and profit of twelve percent (12%). Contractor represents that such rates includes such mark-up.
 - (b) All costs of Contractor, exclusive of HST, for Contractor's own forces labour that does not resemble that which is listed in Appendix D - Personnel Rate Schedule must be Approved prior to the engagement of such labour and shall be at actual cost, exclusive of HST, to Contractor, as substantiated by Approved time sheets or by such documentation as may be required by Company, plus a mark-up of twelve percent (12%).
 - (c) To be eligible for reimbursement, invoicing for such labour shall be fully supported by Billing Information and any other documentation that Company may reasonably require.
- 4.7 In relation to Contractor's unionized employees deployed at the Site under this Agreement, any and all costs, exclusive of HST, relating to Contractor provided:
- (a) air transportation,
 - (b) travel allowance, and
 - (c) board (but only to the extent that accommodations are not available at Site for such employees)
- will be compensated in accordance with the applicable labour agreement between Contractor and its employees relating to the Site, as pass through expenses without any mark-up for administration, overhead and/or profit. Contractor shall not be compensated for any other items, costs or expenses in relation to Contractor's Personnel.
- 4.8 For all Work carried out on a reimbursable basis, Contractor shall prepare time sheets for those Personnel identified in Appendix D – Personnel Rate Schedule, equipment, material and third party services assigned to the performance of the Work which will be provided daily to the Company for Approval. Copies of time sheets shall accompany all Contractor invoices.
- 4.9 When Contractor uses materials, equipment and/or services of any of its Affiliates or any Person with which Contractor has a non-arm's length relationship (including but not limited to common ownership, subsidiary, strategic partner or licensee) to undertake

reimbursable Work, then the Contractor shall be entitled to charge Company the actual documented base cost of such Affiliate or Person (as the case may be) for such materials, equipment and/or services, subject to the removal of any element of overhead and/or profit, plus a mark-up of five percent (5%).

- 4.10 For all Work carried out on a reimbursable basis and to be performed by third party suppliers or service providers, Contractor shall solicit a minimum of three bids for material purchases of \$25,000.00 Canadian and greater. Contractor shall select the qualified bidder with the lowest bid unless otherwise directed and/or Approved by Company. Contractor's procurement process shall be subject to Approval. At Company's request, all received bids and bid evaluation information, including Contractor's award recommendation, shall be made available to Company prior to award.

5.0 CHANGES

Compensation for a Change shall be determined in accordance with the Articles of Agreement, this Exhibit 2 and Exhibit 3 – Coordination Procedures. Rates and prices outlined in Appendices A - Schedule of Price Breakdown, Appendix D - Personnel Rate Schedule and Appendix E - Equipment Rate Schedule of this Exhibit 2 will apply for both increases and decreases in the Work.

Where any Work relating to a Change is performed without agreement between Company and Contractor on a price for such Work:

- (a) the adjustment to the Contract Price shall be in accordance with the provisions of the Articles of this Agreement; and
- (b) for the purpose of Article 26.10(b)(i) of this Agreement, the allowance referenced therein shall be the total of:
 - (i) the percentage amount stated in Section 4.3(a) for purchased materials;
 - (ii) the percentage amount stated in Section 4.4(c) for supplied equipment;
 - (iii) the percentage amount stated in Section 4.5(b) for third party services;
 - (iv) the percentage amount stated in Section 4.6(b) for labour;

but only if, and to the extent that, purchased materials, supplied equipment, third party services and/or labour are required for such Change Work and Approved by Company.

6.0 STANDBY TIME

When the Work is delayed by Company for a reason that is not related to the Contractor's performance of the Work, the following provisions will apply:

- (a) Company will pay Contractor for stand-by time of:
- (i) equipment, other than rented equipment described in paragraph (ii) below, at fifty percent (50%) of the applicable rate stated in Appendix E - Equipment Rate Schedule; and
 - (ii) rented equipment (including rented equipment supplied with operators) at one hundred percent (100%) of the lessor's invoice price;
- where it is necessary to retain the equipment in the Work area for extended periods as Approved by Company.
- (b) For all standby time Approved by Company, Contractor shall prepare daily time sheets for all labour and equipment assigned to the performance of the Work, which will be reviewed, and if Approved, signed by the Company. Copies of time sheets shall accompany all Contractor invoices.
- (c) Payment for such standby will be limited to not more than eight hours in a twenty-four hour day or forty hours in a week.

Notwithstanding the above, no compensation will be allowed for equipment that is inoperable due to breakdown, unavailability or the like. No payment will be allowed for equipment that is not operating because the Work has been delayed or suspended by Contractor for its own reasons.

7.0 MILESTONE PAYMENT SCHEDULE

Appendix B - Milestone Payment Schedule of this Exhibit 2 includes the Milestone payments to be paid by Company to Contractor. Company will pay each Milestone payment due to Contractor upon successful completion of the applicable Payment Milestone, in accordance with the Articles and Exhibit 3 - Coordination Procedures of this Agreement.

8.0 MONTHLY PAYMENT FORECAST SCHEDULE

Appendix C - Monthly Payment Forecast Schedule of this Exhibit 2 includes the Monthly Payment Forecast Schedule provided by Contractor. Company will pay the Contractor monthly for actual progress achieved which shall be accompanied by all relevant supporting documentation as Company or Engineer may require to verify completion of the progress.

9.0 PROJECT LABOUR AGREEMENT

A formal application has been made for the enactment of a Special Project Order ("SPO"). Two (2) Collective Agreements will be applicable to the Work as follows:

- The Muskrat Falls Collective Agreement between the Muskrat Falls Employers' Association Inc. (MFEA) and the Resource Development Trades Council (RDTC) of Newfoundland and Labrador (the "Muskrat Falls Collective Agreement"); and
- The Transmission Construction Collective Agreement between the Transmission

TS
 CAG

Construction Employers' Association Inc. (TCEA) and the International Brotherhood of Electrical Workers, IBEW Local 1620 (the "Transmission Construction Collective Agreement");
(collectively, the "Project Labour Agreements" or "PLAs").

These PLAs have been ratified and are included in Exhibit 11 - Company Supplied Documents, as well as a summary of its key provisions.

In addition, the PLA demarcation for each Site will be as follows:

- The Muskrat Falls Collective Agreement is applicable to the Work at the Muskrat Falls Site only to the completion of the foundations and anchor bolt installation.
- The Transmission Construction Collective Agreement is applicable to all Work at Muskrat Falls after the anchor bolts. This Collective Agreement is also applicable to all Work at Soldier's Pond and Churchill Falls Sites.

All Contractor's Personnel will be required to attend a Site orientation session that includes: health, safety and environment obligations; human resources policies, including respectful workplace, cultural sensitivity, gender equity and diversity; and labour relations, including PLA overview, Site standards, corrective action and dispute resolution.

The Contractor shall be bound to the terms of the PLAs for the duration of its Work under the PLAs, become a member of the applicable Project Employers' Association and name at least one (1) staff person to be responsible for daily labour relations matters at the Site. Prior to working at all Sites (Muskrat Falls, Churchill Falls, and Soldiers Pond), all Contractor's Personnel will be required to attend an LCP Site orientation session that includes: health, safety and environment obligations; human resources policies, including respectful workplace, cultural sensitivity, gender equity and diversity; and labour relations, including PLA overview, Site standards, corrective action and dispute resolution.

10.0 PERFORMANCE SECURITY

Contractor shall provide performance security specified in Article 7 to secure Contractor's obligations under this Agreement, in the form and with the content set out in Exhibit 14 – Performance Security.

11.0 LIQUIDATED DAMAGES

If Contractor fails to deliver that part of the Work to achieve the Milestones for "Commissioning Static Checks Complete" by the Milestone dates specified in Exhibit 9 - Schedule, Contractor shall pay Company as liquidated damages the full amount set out below for each calendar day, including any part thereof, of the delay of that Milestone, from the date the delay commenced to the date the Milestone is achieved, subject to the liability limit referred to in Article 36.2 of this Agreement, unless the failure to achieve the Milestone is due to an event of Force Majeure:

- (a) For "Commissioning Static Checks Complete - Soldiers Pond",

- Ten Thousand Dollars (\$10,000) per day for the first sixty seven (67) days after the Milestone date specified in Exhibit 9-Schedule;
 - One Hundred Thousand Dollars (\$100,000) per day, commencing sixty-eight (68) days after the Milestone date specified in Exhibit 9 – Schedule,
- (b) For “Commissioning Static Checks Complete at Churchill Falls and Muskrat Falls”,
- Twenty-five Thousand Dollars (\$25,000) per day for the first sixty seven (67) days after the Milestone date for specified in Exhibit 9 – Schedule; and
 - One Hundred and Fifty Thousand Dollars (\$150,000) per day, commencing sixty-eight (68) days after the Milestone date specified in Exhibit 9 – Schedule.
- (c) For greater certainty, notwithstanding the number of Sites for which liquidated damages are otherwise payable in accordance with this Section 11.0 for a day of delay, Contractor shall not be liable for more than One Hundred and Fifty Dollars (\$150,000) per day in the aggregate.

12.0 CONTRACTOR FUEL

Contractor shall be responsible for supplying fuel to perform the Work. All costs associated with such fuel shall be all inclusive and deemed to be included in the Contract Price. Contractor shall be responsible for tracking diesel fuel purchases, metering fuel usage and providing a Monthly Fuel Consumption Report in the form as attached in Exhibit 6 – Environmental and Regulatory Compliance Requirements (which shall be attached to Contractor’s invoices). All supporting documentation, as required by Company, shall be subject to the Approval of Company.

13.0 PROPERTY IN TRANSIT

Further to Article 18.3(g) Contractor shall be required to provide property insurance coverage.

14.0 LIQUIDATED DAMAGES FOR KEY PERSONNEL

- 14.1 Key Personnel shall be identified by name of nominated individual prior to Effective Date. All individuals named are required to be accepted by Company. Where Company personnel have not met nominated individuals, all such individuals shall be subject to interview. Contractor shall not remove any Key Personnel (as listed below or any Approved successors) from the Work without first obtaining Approval from Company. Such Approval shall be at Company's sole and absolute discretion and provided that Contractor has satisfied the following conditions:
- (a) requesting Approval by Company at least 60 days in advance of the date of the proposed removal of individual Key Personnel;
 - (b) providing curricula vitae for replacement candidates, who must have qualifications and experience at least equivalent to those of the Key Personnel Contractor proposes to replace;
 - (c) arranging a minimum 14 day hand-over period between Key Personnel to be

- replaced and the Company accepted replacements; and
- (d) accepting that all costs associated with reassignments initiated by Contractor, including mobilization and demobilization, to replace Key Personnel shall be at the sole expense of Contractor if Key Personnel are removed before the projected end date for Key Personnel.

14.2 Contractor shall pay Company liquidated damages in Canadian dollars as identified below per instance if Contractor replaces Key Personnel without following the requirements in Section 14.1. Notwithstanding anything to the contrary, such obligation shall not apply to the exclusions set out in Section 5.7 of the Agreement. Such amount is agreed as a genuine pre-estimate of the disruptive effect on the Work due to Contractor's withdrawal of individual Key Personnel. This provision shall not limit Company's other rights under the Agreement in the event of recurrent unauthorized withdrawal of Key Personnel by Contractor.

POSITION DESCRIPTION (TITLE)	LIQUIDATED DAMAGES (\$CDN)	KEY PERSONNEL (NAME)
Project Manager	500,000.00	Daniel De Blois
Deputy Construction Project Manager	250,000.00	Andre Lambert
Interface Manager	250,000.00	Francois Guay
Project Engineering Manager	250,000.00	Sarah Norris
Site Manager — Churchill Falls	250,000.00	Q1 2015
Completions Manager	250,000.00	Q1 2015

15.0 GROUNDING GRID

In line with document LCP-SN-CD-4000-EL-TS-0010-01, Grounding Material Technical Specification, the grounding grid shall be designed by Contractor during Agreement execution based on actual conditions (soil, external network, etc.). Any difference in quantity with the 20m x 20m budgeted grounding grid quantities as listed in document no. LCP-SN-CD-4000-EL-TS-0010-01, Grounding Material Technical Specification shall entitle Contractor to a change based on the following unit rates:

- 18 Canadian dollars per linear metre for supply of grounding material including all accessories and necessary connections at Muskrat Falls and Soldiers Pond substations and the Churchill Falls 315kV switchyard (4/0 AWG copper conductor);
- 43 Canadian dollars per linear metre for supply of grounding material including all accessories and necessary connections at Churchill Falls 735kV switchyard (500kcmil copper conductor) and,
- 72 Canadian dollars per linear metre for installation at all substation sites.

Exhibit 2 - Appendix A
Schedule of Price Breakdown
Agreement Number: CD0502-001

EXHIBIT 2 - APPENDIX A

SCHEDULE OF PRICE BREAKDOWN

ca TS

**CD0502 CONSTRUCTION OF AC SUBSTATIONS
 OVERALL SUMMARY**

ITEM	SPV	DESCRIPTION	DIRECT* PERSON HOURS	LABOUR PRICE (\$CDN)	MATERIAL PRICE (\$CDN)	EQUIPMENT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
1	LTC	Churchill Falls AC Substation	305,970	\$32,306,983.07	\$32,199,830.07	\$5,246,794.64	\$69,753,607.78
2	LTC	Muskrat Falls AC Substation	204,636	\$28,378,183.86	\$31,938,081.30	\$4,046,098.05	\$64,362,363.21
3	LIL	Soldiers Pond AC Substation	188,742	\$23,574,022.90	\$20,128,459.12	\$4,145,330.86	\$47,847,812.88
4a	LTC	Project Management Team (73.7% of Total)		\$3,126,587.22			\$3,126,587.22
4b	LIL	Project Management Team (26.3% of Total)		\$1,115,729.22			\$1,115,729.22
5		50% Performance Bond with Rider & 5% Letter of Credit during Warranty Period			\$0.00		\$0.00
6a	LTC	15% Letter of Credit reducing to 5% during Warranty Period (73.7% of Total)			\$888,436.57		\$888,436.57
6b	LIL	15% Letter of Credit reducing to 5% during Warranty Period (26.3% of Total)			\$317,040.46		\$317,040.46
		Total Contract Price	699,348	\$88,501,506.26	\$85,471,847.51	\$13,438,223.55	\$187,411,577.33

OPTIONAL PRICING

ITEM	SPV	DESCRIPTION	DIRECT PERSON HOURS	LABOUR PRICE (\$CDN)	MATERIAL PRICE (\$CDN)	EQUIPMENT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
A	LTC	Churchill Falls Additional Operation and Maintenance (O&M) Assistance		\$128,195.00			\$128,195.00
B	LTC	Muskrat Falls Additional Operation and Maintenance (O&M) Assistance		\$0.00			\$0.00
C	LIL	Soldiers Pond Additional Operation and Maintenance (O&M) Assistance		\$0.00			\$0.00
D	LTC	Churchill Falls Online Partial Discharge Monitoring for 315 kV GIS		\$509,545.00			\$509,545.00
E	LTC	Muskrat Falls Online Partial Discharge Monitoring for 315 kV GIS		\$730,740.00			\$730,740.00
F	LTC	PF Measuring Portable Device for 315 kV GIS (MF or CF)		\$71,089.00			\$71,089.00
G	LTC	Churchill Falls Online CB Monitoring for 315 kV GIS		\$52,286.00			\$52,286.00
H	LTC	Muskrat Falls Online CB Monitoring for 315 kV GIS		\$172,404.00			\$172,404.00
		Total Optional Price		\$1,664,259.00			\$1,664,259.00

Contractor Clarification:

- Although individual line items on this Schedule of Price Breakdown are as accurate as possible, this Schedule of Price Breakdown takes into account a distribution of indirect costs included in the Total Contract Price. Consequently, the removal of any line item shall be subject to the prior approval of Contractor, as some of the indirect costs included in such lines may have to be redistributed in the event of scope reduction.
- *Hours do not include GIS Building at CF and MF

CM
 (7)

CA-15

**CHURCHILL FALLS AC SUBSTATION
 SUMMARY**

ITEM	SPV	DESCRIPTION	QTY	UNIT	DIRECT PERSON HOURS	LABOUR PRICE (\$CDN)	MATERIAL PRICE (\$CDN)	EQUIPMENT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
1.1		Engineering Works							
1.1.1	LTC	Engineering Works	1	lot		\$3,068,434.32			\$3,068,434.32
		Total for Engineering Works (Lump Sum)				\$3,068,434.32			\$3,068,434.32
1.2		Procurement							
1.2.1	LTC	High Voltage Equipment	1	lot			\$19,527,158.25		\$19,527,158.25
1.2.2	LTC	Protection and Control	1	lot			\$2,967,495.34		\$2,967,495.34
1.2.3	LTC	Other Equipment & Systems	1	lot			\$4,926,461.05		\$4,926,461.05
		Total for Procurement (Lump Sum)					\$27,421,114.64		\$27,421,114.64
1.3		Construction							
1.3.1	LTC	Mobilization/Demobilization	1	lot		\$3,928,321.42	\$0.00	\$0.00	\$3,928,321.42
1.3.2	LTC	Site Management	1	lot		\$6,103,831.36			\$6,103,831.36
1.3.3	LTC	Civil Works	1	lot	168,716	\$5,020,403.64	\$3,924,143.18	\$1,475,436.99	\$10,419,983.80
1.3.4	LTC	Electromechanical Installation Works	1	lot	137,254	\$12,692,113.60	\$0.00	\$3,771,357.65	\$16,463,471.26
		Total for Construction (Lump Sum)			305,970	\$27,744,670.03	\$3,924,143.18	\$5,246,794.64	\$36,915,607.84
1.4		Completions							
1.4.1	LTC	Commissioning Static Checks	1	lot		\$1,000,693.41			\$1,000,693.41
1.4.2	LTC	Dynamic Commissioning / System Commissioning	1	lot		\$250,173.35			\$250,173.35
1.4.3	LTC	Trial Operation	1	lot		Included			Included
1.4.4	LTC	Completions Standby Time (if required)	1	lot		\$228,985.47			\$228,985.47
		Total for Completions (Lump Sum)				\$1,479,852.24			\$1,479,852.24
1.5		Spare Parts and Maintenance Tools							
1.5.1	LTC	Spare Parts and Maintenance Tools	1	lot			\$854,572.25		\$854,572.25
		Total for Spare Parts and Maintenance Tools (Lump Sum)					\$854,572.25		\$854,572.25
1.6		Training							
1.6.1	LTC	Training	1	lot		\$14,026.49			\$14,026.49
		Total for Training (Lump Sum)				\$14,026.49			\$14,026.49
		GRAND TOTAL CHURCHILL FALLS AC SUBSTATION (Lump Sum)			305,970	\$32,306,983.07	\$32,199,830.07	\$5,246,794.64	\$69,753,607.78

OPTIONAL PRICING

A		Additional Operation and Maintenance (O&M) Assistance							
A.1	LTC	Additional Operation and Maintenance (O&M) Assistance	1	lot		\$128,195.00			\$128,195.00
		Total for Additional O&M Assistance (Lump Sum)				\$128,195.00			\$128,195.00

**CHURCHILL FALLS AC SUBSTATION
 ENGINEERING**

ITEM	SPV	DESCRIPTION	TOTAL PRICE (\$CDN)
1.1.1		Engineering Works	
1.1.1.1	LTC	Equipment and System Specifications	\$558,092.68
1.1.1.2	LTC	Design Studies	\$558,092.68
1.1.1.3	LTC	Substation Layout Design	\$558,092.68
1.1.1.4	LTC	Substation System Design	\$558,092.68
1.1.1.5	LTC	Civil Works Design	\$662,483.28
1.1.1.6	LTC	"As-Built" drawings	\$173,580.32
1.1.1.7	LTC	Complete O&M manual	Included
		Total for Engineering Works (Lump Sum)	\$3,068,434.32

cm
 TD

CW
 -15

**CHURCHILL FALLS AC SUBSTATION
 PROCUREMENT**

ITEM	SPV	DESCRIPTION	QTY	UNIT	UNIT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
1.2.1		High Voltage Equipment				
1.2.1.1	LTC	Circuit Breaker, Live Tank, 800 kV	5	each	\$845,000.00	\$4,225,000.00
1.2.1.2	LTC	Circuit Breaker, Live Tank, 362 kV	0	each	\$340,000.00	\$0.00
1.2.1.3	LTC	Disconnect Switch, 800 kV	8	each	\$170,000.00	\$1,360,000.00
1.2.1.4	LTC	Disconnect Switch with Grounding Switch, Hinge Side, 800 kV	2	each	\$230,000.00	\$460,000.00
1.2.1.5	LTC	Disconnect Switch with Grounding Switch, Jaw Side, 800 kV	4	each	\$230,000.00	\$920,000.00
1.2.1.6	LTC	Disconnect Switch, 362 kV	0	each	\$65,000.00	\$0.00
1.2.1.7	LTC	Disconnect Switch with Grounding Switch, Jaw Side, 362 kV	0	each	\$90,000.00	\$0.00
1.2.1.8	LTC	Disconnect Switch with Grounding Switch, Hinge Side, 362 kV	0	each	\$90,000.00	\$0.00
1.2.1.9	LTC	Disconnect Switch with Outrigger, Jaw Side, 362 kV	0	each	\$67,500.00	\$0.00
1.2.1.10	LTC	Capacitor Voltage Transformer, 735/√3 kV; 6000-3750:1:1:1; CL. 0.3 WXYZ(1), 3PX(2)	6	each	\$30,200.00	\$181,200.00
1.2.1.11	LTC	Capacitor Voltage Transformer, 735/√3 kV; 6000-3750:1:1:1; CL. 0.3 WXYZ(1), 3PX(1)	6	each	\$30,200.00	\$181,200.00
1.2.1.12	LTC	Capacitor Voltage Transformer, 315/√3 kV; 1500-2600:1:1:1; CL. 0.3 WXYZ(1), 3PX(1)	0	each	\$10,300.00	\$0.00
1.2.1.13	LTC	Capacitor Voltage Transformer, 315/√3 kV; 1500-2600:1:1:1; CL. 0.3 WXYZ(1), 3PX(2)	0	each	\$10,300.00	\$0.00
1.2.1.14	LTC	Current Transformer 800kV, 2000:5, 50kA; CL. 0.3B1.8(1), 10L800(3)	6	each	\$76,990.00	\$461,940.00
1.2.1.15	LTC	Current Transformer 800kV, 1000-2000:5:1:1:1; CL. 0.3B1.8(1), 5P20(3)	24	each	\$68,140.00	\$1,635,360.00
1.2.1.16	LTC	Current Transformer 362kV, 1250-2500:5:1:1:1; CL. 0.3B1.8(1), 5P20(3)	0	each	\$34,200.00	\$0.00
1.2.1.17	LTC	Current Transformer 362kV, 1250-2500:5:1:1:1; CL. 0.3B1.8(1), 5P20(1), TPY(2)	0	each	\$33,000.00	\$0.00
1.2.1.18	LTC	Surge Arrester, Metal Oxide Gapless Ur = 612 kV	18	each	\$25,533.25	\$459,598.46
1.2.1.19	LTC	Surge Arrester, Metal Oxide Gapless Ur = 276 kV	12	each	\$5,233.30	\$62,799.65
1.2.1.20	LTC	315 kV GIS (Alstom T155), including spare parts	1	each	\$9,580,060.14	\$9,580,060.14
		Sub-Total, HV Equipment (Lump Sum)				\$19,527,158.25

**CHURCHILL FALLS AC SUBSTATION
 PROCUREMENT**

ITEM	SPV	DESCRIPTION	QTY	UNIT	UNIT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
1.2.2		Protection and Control				
1.2.2.1	LTC	Control Panel General	7	each	\$30,295.28	\$212,066.93
1.2.2.2	LTC	Control Panel with Recloser and Auto-Synchronization	4	each	\$44,358.01	\$177,432.02
1.2.2.3	LTC	Control Panel with Teleprotection (for 735 kV interlock)	4	each	\$0.00	\$0.00
1.2.2.4	LTC	Redundant SMCS System	1	lot	\$200,597.35	\$200,597.35
1.2.2.5	LTC	Redundant IEC-61850 Ethernet LAN and other related Devices	1	lot	\$191,277.77	\$191,277.77
1.2.2.6	LTC	Control Panel for Auxiliary Services	1	each	\$37,089.37	\$37,089.37
1.2.2.7	LTC	Digital Fault Recorder System	1	lot	\$184,967.39	\$184,967.39
1.2.2.8	LTC	Fault Locator System	1	lot	\$27,587.50	\$27,587.50
1.2.2.9	LTC	Revenue Meter Panel	1	each	\$35,768.44	\$35,768.44
1.2.2.10	LTC	Protection Panel for 735 kV BusBar, Group A	2	each	\$171,834.26	\$343,668.52
1.2.2.11	LTC	Protection Panel for 735 kV BusBar, Group B	2	each	\$72,201.75	\$144,403.50
1.2.2.12	LTC	Protection Panel for 735 kV Existing BusBar Protection Upgrade, Group A	2	each	\$39,202.32	\$78,404.65
1.2.2.13	LTC	Protection Panel for 735 kV Existing BusBar Protection Upgrade, Group B	2	each	\$30,647.35	\$61,294.69
1.2.2.14	LTC	Protection Panel for 735 kV Existing BusBar Protection Upgrade, Group B	2	each	\$54,086.07	\$108,172.14
1.2.2.15	LTC	Protection Panel for 315 kV BusBar, Group A	2	each	\$68,771.20	\$137,542.39
1.2.2.16	LTC	Protection Panel for 315 kV BusBar, Group B	2	each	\$86,136.23	\$172,272.46
1.2.2.17	LTC	Protection Panel for Power Transformer, Group A	2	each	\$74,181.79	\$148,363.59
1.2.2.18	LTC	Protection Panel for Power Transformer, Group B	2	each	\$71,383.11	\$142,766.23
1.2.2.19	LTC	Protection Panel for 315 kV Transmission Line, Group A	2	each	\$57,380.62	\$114,761.23
1.2.2.20	LTC	Protection Panel for 315 kV Transmission Line, Group B	2	each	\$73,750.52	\$147,501.04
1.2.2.21	LTC	Protection Panel for Tie Breaker General	3	each	\$42,352.82	\$127,058.46
1.2.2.22	LTC	Cabling Material, Accessories and Hardware	1	lot	Included	Included
1.2.2.23	LTC	Other Works, if any, not included above (Impact of item 13 of Annex 1- Commercial Options)	1	lot	\$174,499.67	\$174,499.67
		Sub-total, Protection and Control (Lump Sum)				\$2,967,495.34

(TS)
 (CM)

Can
 75

**CHURCHILL FALLS AC SUBSTATION
 PROCUREMENT**

ITEM	SPV	DESCRIPTION	QTY	UNIT	UNIT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
1.2.3		Other Equipment and Systems				
1.2.3.1	LTC	Auxiliary Service Equipment including SST	1	lot	\$1,487,595.16	\$1,487,595.16
1.2.3.2	LTC	Busbar Materials	1	lot	\$1,725,615.52	\$1,725,615.52
1.2.3.3	LTC	Ground Grid and Grounding Materials	1	lot	\$230,083.94	\$230,083.94
1.2.3.4	LTC	LV Control & Power Cables and Installation Accessories	1	lot	\$1,443,811.46	\$1,443,811.46
1.2.3.5	LTC	MV Power Cable including Terminations & Accessories	1	lot	\$39,354.98	\$39,354.98
1.2.3.6	LTC	Mechanical Equipment	1	lot	Included	Included
		Sub-Total, Other Equipment and Systems (Lump Sum)				\$4,926,461.05

CHURCHILL FALLS AC SUBSTATION
 CONSTRUCTION

ITEM	SPV	DESCRIPTION	QTY	UNIT	DIRECT PERSON HOURS	LABOUR PRICE (\$CDN)	MATERIAL PRICE (\$CDN)	EQUIPMENT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
1.3.1 Mobilization/Demobilization									
1.3.1.1	LTC	Mobilization	1	lot		\$1,784,822.76	Included	Included	\$1,784,822.76
1.3.1.2	LTC	Final Cleanup and Demobilization	1	lot		\$697,516.07	Included	Included	\$697,516.07
1.3.1.3	LTC	Temporary Site Facilities	1	lot		\$1,445,982.58	Included	Included	\$1,445,982.58
Sub-total, Mobilization/Demobilization (Lump Sum)						\$3,928,321.42	\$0.00	\$0.00	\$3,928,321.42
1.3.2 Site Management									
1.3.2.1	LTC	All Site Management (all non-trade labour i.e., Supervision, Administration, Controls, HS&E...)	1	lot		\$6,103,831.36			\$6,103,831.36
Sub-total, Site Management (Lump Sum)						\$6,103,831.36			\$6,103,831.36
1.3.3 Civil Works									
1.3.3.1	LTC	Foundation of HV Switchgear, Bus and Gantry Structures (Incl concrete testing)	4,175	m ³	75,020	\$1,906,827.88	\$1,773,676.80	\$705,257.18	\$4,385,761.86
1.3.3.2	LTC	Foundation of Transformers (including OWS & Firewalls)	1,870	m ³	27,712	\$779,643.40	\$625,568.19	\$274,106.49	\$1,679,318.09
1.3.3.3	LTC	Control Building Foundation	407	m ³	5,649	\$119,908.16	\$97,094.78	\$38,071.38	\$255,074.32
1.3.3.4	LTC	Control Building Structure - Exterior	1	lot	2,640	\$144,452.64	Included	\$23,930.64	\$168,383.28
1.3.3.5	LTC	Control Building Structure - Interior	1	lot	Included	\$102,822.69	Included	\$18,550.22	\$121,372.92
1.3.3.6	LTC	Control Building - Bldg Services (Lights, HVAC, Fire Prot, Plumbing, etc.)	1	lot	28,639	\$110,019.31	\$215,077.67	Included	\$325,096.99
1.3.3.7	LTC	Interface Building Foundation	48	m ³	957	\$25,354.41	\$19,238.52	\$7,331.44	\$51,924.37
1.3.3.8	LTC	Interface Building Structure & Services	1	lot	6,688	\$54,129.82	Included	\$62,397.54	\$116,527.36
1.3.3.9	LTC	GIS Building	1	lot		\$710,122.73	\$355,061.36	\$118,353.79	\$1,183,537.88
1.3.3.10	LTC	Steel Structures Works	398	MT	Incl. in EM Install	Incl. in EM Install	\$326,508.09	Included	\$326,508.09
1.3.3.11	LTC	Fencing (Including foundations and access gates)	1	lot	5,660	\$153,079.31	\$89,946.88	\$29,164.60	\$272,190.79
1.3.3.12	LTC	Final Grading, Access Roads, Permanent Site Drainage							
1.3.3.12.1	LTC	Site Grading	1	lot	4,306	\$379,657.27	Included	\$67,251.91	\$446,909.18
1.3.3.12.2	LTC	Access Roads	1	lot	2,220	\$198,179.74	Included	\$32,757.52	\$230,937.27
1.3.3.12.3	LTC	Permanent Drainage	1	lot	2,393	\$143,901.62	Included	\$23,885.08	\$167,786.70
1.3.3.12.4	LTC	Grounding Grid Excavation	1	lot	4,008	\$108,890.52	Included	\$18,116.41	\$127,006.93
1.3.3.13	LTC	Installation of Other Civil Works, if any, not included above (cable trench (prefab and buried) and culverts) Included Potable Water Storage Tank	1	lot	2,824	\$83,414.13	\$421,970.87	\$56,262.78	\$561,647.79
Sub-Total, Civil Works (Lump Sum)					168,716	\$5,020,403.64	\$3,924,143.18	\$1,475,436.99	\$10,419,983.80
1.3.4 Electromechanical Installation Works									
1.3.4.1	LTC	Installation of High Voltage Switchgears & Bus Works	1	lot	98,168	\$8,087,340.32	Included	\$2,405,372.23	\$10,492,712.55
1.3.4.2	LTC	Installation of Power Transformer, SST, Grounding Reactor and Resistor	1	lot	6,527	\$579,450.96	Included	\$167,324.21	\$746,775.18
1.3.4.3	LTC	Installation of Protection Equipment	1	lot	725	\$76,601.84	Included	\$22,814.25	\$99,416.09
1.3.4.4	LTC	Installation of Control Equipment	1	lot	887	\$82,586.36	Included	\$24,596.61	\$107,182.97
1.3.4.5	LTC	Installation of Auxiliary Service Equipment	1	lot	2,957	\$260,925.02	Included	\$77,711.04	\$338,636.07
1.3.4.6	LTC	Installation of Power & Control Cabling Systems	1	lot	23,681	\$2,028,084.43	Included	\$603,825.80	\$2,631,910.23
1.3.4.7	LTC	Installation of Grounding System	1	lot	4,309	\$375,827.78	Included	\$111,932.42	\$487,760.20
1.3.4.8	LTC	Installation of Outdoor Area Lighting	1	lot	Included	\$1,201,296.88	Included	\$357,781.08	\$1,559,077.96
1.3.4.9	LTC	Installation of Other Elect Works, if any, not included above (Bidder to provide details)	1	lot	0	\$0.00	\$0.00	\$0.00	\$0.00
Sub-Total, Electromechanical Works (Lump Sum)					137,254	\$12,692,113.60	\$0.00	\$3,771,357.65	\$16,463,471.26

63-2

**CHURCHILL FALLS AC SUBSTATION
 COMPLETIONS**

ITEM	SPV	DESCRIPTION	QTY	UNIT	LABOUR PRICE (\$CDN)	MATERIAL PRICE (\$CDN)	EQUIPMENT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
1.4.1		Commissioning Static Checks						
1.4.1.1	LTC	Commissioning Static Checks of HV Equipment, Bus Works and Grounding Works	1	lot	\$1,000,693.41			\$1,000,693.41
1.4.1.2	LTC	Commissioning Static Checks of Power Transformers	1	lot	Included			Included
1.4.1.3	LTC	Commissioning Static Checks of Electrical Auxiliary System & Cables	1	lot	Included			Included
1.4.1.4	LTC	Commissioning Static Checks of Protection and Control	1	lot	Included			Included
1.4.1.5	LTC	Commissioning Static Checks of Buildings & Associated Mechanical Systems	1	lot	Included			Included
		Sub-Total, Commissioning Static Checks (Lump Sum)			\$1,000,693.41			\$1,000,693.41
1.4.2		Dynamic Commissioning / System Commissioning						
1.4.2.1	LTC	Dynamic Commissioning / System Commissioning	1	lot	\$250,173.35			\$250,173.35
		Sub-Total, Dynamic Commissioning / System Commissioning (Lump Sum)			\$250,173.35			\$250,173.35
1.4.3		Trial Operation						
1.4.3.1	LTC	Trial Operation	1	lot	Included			Included
		Sub-Total, Trial Operation (Lump Sum)			\$0.00			\$0.00
1.4.4		Completions Standby Time (if required)	QTY	UNIT			UNIT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
1.4.4.1	LTC	Mobilization for Dynamic Commissioning / System Commissioning and Trial Operation	1	Lot			\$45,000.00	\$45,000.00
1.4.4.2	LTC	Demobilization for Dynamic Commissioning / System Commissioning and Trial Operation	1	Lot			\$22,500.00	\$22,500.00
1.4.4.3	LTC	Preservation between Commissioning Static Checks and Dynamic Commissioning / System Commissioning and Trial Operation (assume 6 months)	6	Month			\$26,914.25	\$161,485.47
		Sub-Total, Completions Standby Time (if required) (Lump Sum)						\$228,985.47

Note: For item 1.4.4.3, Contractor has assumed full-time presence of one (1) Alstom Supervisor for six (6) months.

**CHURCHILL FALLS AC SUBSTATION
 TRAINING AND OPERATIONS & MAINTENANCE ASSISTANCE**

ITEM	SPV	DESCRIPTION	QTY	UNIT	LABOUR PRICE (\$CDN)	TOTAL PRICE (\$CDN)
1.6.1		Training				
1.6.1.1	LTC	Training at Site - Circuit Breakers, Disconnect Switches, MV Switchgear	1	lot	included	included
1.6.1.2	LTC	Training at Site - Protection and Control Systems	1	lot	included	included
1.6.1.3	LTC	Training at Factory - Circuit Breakers and Disconnect Switches	1	lot	included	included
1.6.1.4	LTC	Training at Factory - Protection and Control Systems	1	lot	included	included
		Sub-Total, Training (Lump Sum)				\$14,026.49
A.1		Operation and Maintenance Assistance (Optional)				
A.1.1	LTC	First 90 days after completion of trial operation	1	lot	\$128,195.00	\$128,195.00
A.1.2	LTC	Subsequent 9 months	1	lot	N/A	N/A
A.1.3	LTC	Remainder of warranty period	1	lot	N/A	N/A
A.1.4	LTC	Other (specify)	1	lot	\$0.00	\$0.00
		Sub-Total, Operation and Maintenance Assistance				\$128,195.00

FD
 CA



**MUSKRAT FALLS AC SUBSTATION
 SUMMARY**

ITEM	SPV	DESCRIPTION	QTY	UNIT	DIRECT PERSON HOURS	LABOUR PRICE (\$CDN)	MATERIAL PRICE (\$CDN)	EQUIPMENT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
2.1		Engineering Works							
2.1.1	LTC	Engineering Works	1	lot		\$3,068,434.32			\$3,068,434.32
		Total for Engineering Works (Lump Sum)				\$3,068,434.32			\$3,068,434.32
2.2		Procurement							
2.2.1	LTC	High Voltage Equipment	1	lot			\$20,681,957.64		\$20,681,957.64
2.2.2	LTC	Protection and Control	1	lot			\$3,068,986.61		\$3,068,986.61
2.2.3	LTC	Other Equipment & Systems	1	lot			\$5,787,739.12		\$5,787,739.12
		Total for Procurement (Lump Sum)					\$29,538,683.37		\$29,538,683.37
2.3		Construction							
2.3.1	LTC	Mobilization/Demobilization	1	lot		\$3,893,231.01	\$0.00	\$0.00	\$3,893,231.01
2.3.2	LTC	Site Management	1	lot		\$5,618,560.90			\$5,618,560.90
2.3.3	LTC	Civil Works	1	lot	83,622	\$3,878,537.11	\$2,217,539.40	\$730,317.68	\$6,826,394.19
2.3.4	LTC	Electromechanical Installation Works	1	lot	121,014	\$11,154,873.97	\$0.00	\$3,315,780.38	\$14,470,654.34
		Total for Construction (Lump Sum)			204,636	\$24,545,202.99	\$2,217,539.40	\$4,046,098.05	\$30,808,840.44
2.4		Completions							
2.4.1	LTC	Commissioning Static Checks	1	lot		\$600,416.05			\$600,416.05
2.4.2	LTC	Dynamic Commissioning / System Commissioning	1	lot		\$150,104.01			\$150,104.01
2.4.3	LTC	Trial Operation	1	lot		Included			\$0.00
2.4.4	LTC	Completions Standby Time (if required)	1	lot		\$0.00			\$0.00
		Total for Completions (Lump Sum)				\$750,520.06			\$750,520.06
2.5		Spare Parts and Maintenance Tools							
2.5.1	LTC	Spare Parts and Maintenance Tools	1	lot			\$181,858.53		\$181,858.53
		Total for Spare Parts and Maintenance Tools (Lump Sum)					\$181,858.53		\$181,858.53
2.6		Training							
2.6.1	LTC	Training	1	lot		\$14,026.49			\$14,026.49
		Total for Training (Lump Sum)				\$14,026.49			\$14,026.49
		GRAND TOTAL MUSKRAT FALLS AC SUBSTATION (Lump Sum)			204,636	\$28,378,183.86	\$31,938,081.30	\$4,046,098.05	\$64,362,363.21

OPTIONAL PRICING

B		Additional Operation and Maintenance (O&M) Assistance							
B.1	LTC	Additional Operation and Maintenance (O&M) Assistance	1	lot		\$0.00			\$0.00
		Total for Additional O&M Assistance (Lump Sum)				\$0.00			\$0.00

**MUSKRAT FALLS AC SUBSTATION
 ENGINEERING**

ITEM	SPV	DESCRIPTION	TOTAL PRICE (\$CDN)
2.1.1		Engineering Works	
2.1.1.1	LTC	Equipment and System Specifications	\$558,092.68
2.1.1.2	LTC	Design Studies	\$558,092.68
2.1.1.3	LTC	Substation Layout Design	\$558,092.68
2.1.1.4	LTC	Substation System Design	\$558,092.68
2.1.1.5	LTC	Civil Works Design	\$662,483.28
2.1.1.6	LTC	"As-Built" drawings	\$173,580.32
2.1.1.7	LTC	Complete O&M manual	Included
		Total for Engineering Works (Lump Sum)	\$3,068,434.32

TS
 C/M

CM
 LG

**MUSKRAT FALLS AC SUBSTATION
 PROCUREMENT**

ITEM	SPV	DESCRIPTION	QTY	UNIT	UNIT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
2.2.1		High Voltage Equipment				
2.2.1.1	LTC	Circuit Breaker, Live Tank, 362 kV	0	each	\$340,000.00	\$0.00
2.2.1.2	LTC	Disconnect Switch, 362 kV	0	each	\$65,000.00	\$0.00
2.2.1.3	LTC	Disconnect Switch with Grounding Switch, Jaw Side, 362 kV	0	each	\$90,000.00	\$0.00
2.2.1.4	LTC	Disconnect Switch with Grounding Switch, Hinge Side, 362 kV	0	each	\$90,000.00	\$0.00
2.2.1.5	LTC	Disconnect Switch with Outtrigger, Jaw Side, 362 kV	0	each	\$67,500.00	\$0.00
2.2.1.6	LTC	Capacitor Voltage Transformer, 315/√3 kV; 1500-2600:1:1:1; CL. 0.3 WXYZ(1), 3PX(1)	0	each	\$10,300.00	\$0.00
2.2.1.7	LTC	Capacitor Voltage Transformer, 315/√3 kV; 1500-2600:1:1:1; CL. 0.3 WXYZ(1), 3PX(2)	0	each	\$10,300.00	\$0.00
2.2.1.8	LTC	Current Transformer 362kV, 1250-2500:5:1:1:1; CL. 0.3B1.8(1), 5P20(3)	0	each	\$34,200.00	\$0.00
2.2.1.9	LTC	Current Transformer 362kV, 1250-2500:5:1:1:1; CL. 0.3B1.8(1), 5P20(1), TPY(2)	0	each	\$33,000.00	\$0.00
2.2.1.10	LTC	Current Transformer 362kV, 1250-2500:5:5; CL. 0.3B1.8(2)	0	each	\$29,350.00	\$0.00
2.2.1.11	LTC	Surge Arrester, Metal Oxide Gapless Ur = 276 kV	36	each	\$5,288.83	\$190,397.84
2.2.1.12	LTC	315 kV GIS (Alstom T155), including spare parts	1	each	\$20,491,559.79	\$20,491,559.79
		Sub-Total, HV Equipment (Lump Sum)				\$20,681,957.64

**MUSKRAT FALLS AC SUBSTATION
 PROCUREMENT**

ITEM	SPV	DESCRIPTION	QTY	UNIT	UNIT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
2.2.2		Protection and Control				
2.2.2.1	LTC	Control Panel General	8	each	\$45,786.15	\$366,289.19
2.2.2.2	LTC	Control Panel with Recloser and Auto-Synchronization	4	each	\$47,259.83	\$189,039.31
2.2.2.3	LTC	Control Panel with Recloser	2	each	\$0.00	\$0.00
2.2.2.4	LTC	Control Panel with POW	4	each	\$50,174.55	\$200,698.19
2.2.2.5	LTC	Redundant SMCS System	1	lot	\$160,663.15	\$160,663.15
2.2.2.6	LTC	Redundant IEC-61850 Ethernet LAN and other related Devices	1	lot	\$161,785.91	\$161,785.91
2.2.2.7	LTC	Control Panel for Auxiliary Services	1	each	\$36,789.90	\$36,789.90
2.2.2.8	LTC	Digital Fault Recorder System	1	lot	\$242,974.53	\$242,974.53
2.2.2.9	LTC	Fault Locator System	1	lot	\$27,587.50	\$27,587.50
2.2.2.10	LTC	Revenue Meter Panel	3	each	\$30,095.53	\$90,286.60
2.2.2.11	LTC	Protection Panel for 315 kV BusBar, Group A	2	each	\$81,675.49	\$163,350.98
2.2.2.12	LTC	Protection Panel for 315 kV BusBar, Group B	2	each	\$133,882.17	\$267,764.35
2.2.2.13	LTC	Protection Panel for Power Transformer, Group A	2	each	\$78,903.38	\$157,806.77
2.2.2.14	LTC	Protection Panel for Power Transformer, Group B	2	each	\$77,567.17	\$155,134.34
2.2.2.15	LTC	Protection Panel for 315 kV Transmission Line, Group A	2	each	\$67,205.96	\$134,411.93
2.2.2.16	LTC	Protection Panel for 315 kV Transmission Line, Group B	2	each	\$75,327.32	\$150,654.65
2.2.2.17	LTC	Protection Panel for Tie Breaker General	8	each	\$51,933.20	\$415,465.63
2.2.2.18	LTC	Cabling Material, Accessories and Hardware	1	lot	Included	Included
2.2.2.19	LTC	Other Works, if any, not included above (Impact if Item 13 of Annex 1 - Commercial Options and Spare Optimization)	1	lot	\$148,283.67	\$148,283.67
		Sub-total, Protection and Control (Lump Sum)				\$3,068,986.61

TS
 Cm

CM
 13

**MUSKRAT FALLS AC SUBSTATION
 PROCUREMENT**

ITEM	SPV	DESCRIPTION	QTY	UNIT	UNIT PRICE (\$CDN)	TOTAL PRICE (\$CDN)
2.2.3		Other Equipment and Systems				
2.2.3.1	LTC	Auxiliary Service Equipment including SST	1	lot	\$2,078,568.88	\$2,078,568.88
2.2.3.2	LTC	Busbar Materials	1	lot	\$438,099.53	\$438,099.53
2.2.3.3	LTC	Ground Grid and Grounding Materials	1	lot	\$53,574.53	\$53,574.53
2.2.3.4	LTC	LV Control & Power Cables and Installation Accessories	1	lot	\$1,226,287.00	\$1,226,287.00
2.2.3.5	LTC	MV Power Cable including Terminations & Accessories	1	lot	\$101,940.55	\$101,940.55
2.2.3.6	LTC	HV Power Cable including Terminations & Accessories	1	lot	\$1,889,268.64	\$1,889,268.64
2.2.3.7	LTC	Mechanical Equipment	1	lot	Included	Included
		Sub-Total, Other Equipment and Systems (Lump Sum)				\$5,787,739.12

**LABRADOR TRANSMISSION CORPORATION and
LABRADOR-ISLAND LINK LIMITED PARTNERSHIP**

and

ALSTOM GRID CANADA, INC.

ENGINEER, PROCURE AND CONSTRUCT AGREEMENT

Construction of AC Substations

Agreement No. CD0502-001

DATED AS OF August 15, 2014



TABLE OF CONTENTS

Article 1 Interpretation 1

Article 2 Contractor’s Status 13

Article 3 Contractor’s Obligations 14

Article 4 Contractor’s Design Obligations 16

Article 5 Contractor’s Personnel 17

Article 6 Subcontracts 19

Article 7 Performance Security 20

Article 8 Policy on Ethics/Conflicts of Interest 20

Article 9 Compliance With Laws 21

Article 10 Company’s Obligations 21

Article 11 Role and Responsibilities of Engineer 22

Article 12 Compensation and Terms of Payment 23

Article 13 Taxes 29

Article 14 Audit and Records 31

Article 15 Health, Safety and Environmental Protection 32

Article 16 Access and Quality 36

Article 17 Warranty 37

Article 18 Contractor Insurance 40

Article 19 Workers Compensation 43

Article 20 Project Insurance 43

Article 21 Indemnification 44

Article 22 Site and Transport Route Conditions 49

Article 23 Title and Risk 51

Article 24 Completion and Delivery 52

Article 25 Substantial and Final Completion 54

Article 26 Changes in the Work 57

Article 27 Publicity Communications 60

Article 28 Confidentiality 60

Article 29 Patents, Trademarks, Copyrights 62

Article 30 Assignment 63

Article 31 Force Majeure 65

Article 32 Default and Termination 67

Article 33 Bankruptcy, Insolvency and Receivership 72

Article 34 Suspension 72

TJ
CW

Article 35 Labour Relations 74
 Article 36 Liquidated Damages 75
 Article 37 Contractor’s Representations, Warranties and Covenants..... 76
 Article 38 Entirety of Agreement, Non Waiver 78
 Article 39 Dispute Resolution 79
 Article 40 Notices 80
 Article 41 Liens and Claims 82
 Article 42 Enurement, Time, Survival of Provisions 83
 Article 43 Counterparts..... 83
 Article 44 Cost Reduction Proposals 83

Exhibit	Description
1	Scope of Work
2	Compensation
3	Coordination Procedures
4	Supplier Document Requirement List
5	Health and Safety Requirements
6	Environmental and Regulatory Compliance Requirements
7	Quality Requirements
8	Subcontractors, Manufacturers and Material Sources
9	Schedule
10	Declaration of Residency
11	Company Supplied Documents
12	Site Conditions
13	Provincial Benefits
14	Performance Security
15	Rules for Arbitration
16	Lower Churchill Construction Projects Benefits Strategy
17	Joint Savings Initiative for Civil Works

THIS AGREEMENT MADE as of the 15th day of August, 2014

BETWEEN:

LABRADOR TRANSMISSION CORPORATION formed pursuant to the laws of the Province of Newfoundland and Labrador, and having its head office at the City of St. John's, Province of Newfoundland, Canada, and **LABRADOR-ISLAND LINK LIMITED PARTNERSHIP**, a limited partnership formed pursuant to the laws of the Province of Newfoundland and Labrador, represented by its general partner, Labrador-Island Link General Partner Corporation (hereinafter together or separately referred to as "**Company**")

- and -

Alstom Grid Canada, Inc. a corporation duly incorporated pursuant to the laws of the Province of Quebec (hereinafter referred to as "**Contractor**").

WHEREAS, Company desires the design, engineering, supply and construction for a 735-315 kV ac substation at Churchill Falls, Labrador, a 315 kV ac substation at Muskrat Falls, Labrador, a 230 kV substation at Soldiers Pond, Newfoundland, all with related interfaces, all of which is more fully described as the Work in this Agreement;

Whereas, the Work is to be performed on an engineer, procure and construct turnkey basis;

WHEREAS, Contractor is engaged in the business of performing such Work and will provide all expertise, equipment, material and personnel to perform the Work;

WHEREAS Company and Contractor wish to set out the terms and conditions on which Contractor shall carry out the Work;

NOW THEREFORE, the Parties, each in consideration of the promises and agreements of the other, hereby agree as follows:

**ARTICLE 1
INTERPRETATION**

1.1 The following Exhibits are attached hereto and shall form and be read and construed as an integral part of this Agreement:

Exhibit	Description
1	Scope of Work
2	Compensation
3	Coordination Procedures
4	Supplier Document Requirement List

Exhibit	Description
5	Health and Safety Requirements
6	Environmental and Regulatory Compliance Requirements
7	Quality Requirements
8	Subcontractors, Manufacturers and Material Sources
9	Schedule
10	Declaration of Residency
11	Company Supplied Documents
12	Site Conditions
13	Provincial Benefits
14	Performance Security
15	Rules for Arbitration
16	Lower Churchill Construction Projects Benefits Strategy
17	Joint Savings Initiative for Civil Works

1.2 For the purpose of this Agreement, except as is otherwise expressly provided or unless the context otherwise requires, the terms defined in this Article shall have the meanings assigned to them in this Article.

- (a) **"Acceptance"** means express acceptance, concurrence or consent in writing by Engineer and **"Accepted"**, **"Acceptable"** and **"Accept"** shall be construed accordingly.
- (b) **"Aconex"** means a cloud based computer software program for communication that can be accessed via an internet connection and a web browser.
- (c) **"Affiliate"** or **"Affiliate(s)"** has the meaning given to affiliate in the *Canada Business Corporations Act*, R.S.C. 1985, c. C-44 and includes any limited partnership whose general partner is an affiliate of Company under that statute.
- (d) **"Affiliate Assignee"** has the meaning ascribed thereto in **Article 30.1(a)**.
- (e) **"Agent Party"** means initially the Security Trustee, and from time to time any agent or other person designated by the Security Trustee to enforce the Security Interests, or any receiver of the Affiliate Assignee or any person appointed as a receiver by the Security Trustee for the assets of the Affiliate Assignee. At any point in time there shall only be one Agent Party and the Security Trustee shall inform Contractor each time there is a change in the designation of the Agent Party.
- (f) **"Agreement"** means this document, including the Exhibits as referenced in **Article 1.1**, originally executed or as they may from time to time be supplemented, amended, revised or otherwise modified in accordance with the applicable provisions of this document and the Exhibits.

- (g) **"Applicable Laws"** means any laws, statutes, regulations, standards, codes, orders, directives or other rules enacted or issued from time to time by any governmental or regulatory body or other duly constituted public authority (whether legislative, administrative or executive) having jurisdiction over Contractor or Company or the activities carried out under this Agreement, including safety, occupational health, customs and excise, taxation, workers compensation, labour and environmental protection laws, statutes, regulations, standards, codes, orders, directives and other rules.
- (h) **"Approval"** means express acceptance, concurrence or consent in writing and **"Approve"** and **"Approved"** shall be construed accordingly. Approvals shall not unreasonably be withheld.
- (i) **"Authority"** means any:
- (i) government or government department or agency;
 - (ii) municipality, local government authority or council;
 - (iii) other statutory authority;
 - (iv) fiscal or judicial body, commission, board, tribunal or agency; or
 - (v) other regulatory person or body;
- (excluding Company) having jurisdiction or authority in any way over Contractor or Company or the subject matter of the Agreement, including a right to impose a requirement or whose Approval is required with respect to the LCP or the Work.
- (j) **"Billing Information"** has the meaning ascribed thereto in **Article 12.6**.
- (k) **"Breach"** has the meaning ascribed thereto in **Article 30.2(a)**.
- (l) **"Business Day"** means a day that is not a Saturday, Sunday or any other day which is a statutory holiday in the Province of Newfoundland and Labrador.
- (m) **"Change"** means any of the following:
- (i) An addition to the Work;
 - (ii) A significant increase or decrease in quantities of items forming part or all of the Work;
 - (iii) A deletion of any part of the Work;
 - (iv) A revision or modification to any part of the Work already completed;

- (v) A variation or reduction or extension of time to the schedule for the completion of a Milestone;
- (vi) A modification in, variation to or deviation from the requirements set out in Exhibit 1 – Scope of Work;
- (vii) An amendment to or imposition of new Applicable Laws that impact Contractor's cost to perform the Work because:
 1. HST is replaced by tax system comprising of a goods and services tax (GST) and provincial sales tax (PST); or
 2. duties are applied to goods, materials or equipment that were duty free as of the Effective Date; and
 3. new requirements for permits or licenses are imposed during the execution of the Work.

but for greater certainty, a Change shall not include:

- (A) modifications, revisions or deviations that are necessary to make the Work satisfy the performance requirements set out in Exhibit 1 – Scope of Work;
 - (B) any items that can reasonably be inferred as being included in the Work, including the advancement and development of the design of any element of the Work within the Contactor's responsibility under the Agreement;
 - (C) modifications, revisions or deviations to the requirements of Exhibit 1 – Scope of Work or any additional services that are reasonably requested by Company that are necessary because of delays solely attributable to Contractor Group;
 - (D) corrections or additional services that are required because of Contractor's breach of any of its representations, covenants, warranties, guarantees or other obligations under this Agreement, including corrections or additional services made necessary due to noncompliance with the Agreement, Applicable laws or the requirements of Authorities;
 - (E) the supply of any services, materials or equipment required to rectify any omissions, defects or deficiencies in the Work; or
 - (F) matters that might otherwise be grounds for alteration of a date for completion of a Milestone but which coincide with any concurrent delay of a material nature on the same Milestone one cause of which is the failure of Contractor Group to comply with its obligations under this Agreement.
- (n) **"Change Order"** means an order or directive for a Change issued in the form set out in Exhibit 3 – Coordination Procedures and signed by Company.

- (o) **"Change Request"** means a request for a Change issued in the form set out in Exhibit 3 – Coordination Procedures.
- (p) **"Claim"** means damages (including punitive and exemplary damages), expenses, costs, losses, injuries, liabilities, claims, liens, judgments, settlements, awards, remedies, debts, expenses, causes of action, demands, court costs, legal fees or disbursements.
- (q) **"Commissioning"** means the checks, inspections, activities and tests required in the document entitled "ac Substations - Testing and Commissioning" in the Technical Specifications to verify that the Work performs in accordance with the requirements of this Agreement and is safe for use and/or occupation.
- (r) **"Commissioning Static Checks"** has the meaning ascribed thereto in Section 1.3 of the Technical Specification entitled "ac Substations Completion (Testing and Commissioning)"
- (s) **"Company"** means Labrador Transmission Corporation and Labrador-Island Link Limited Partnership, acting jointly or independently as the circumstance may require, and their successors and permitted assigns.
- (t) **"Company Group"** means collectively Company and Company's Other Contractors (including Engineer), and the respective Affiliates and Personnel of each of the foregoing, and any independent engineer, and its Personnel, retained by or on behalf of an entity that provides financing to Company or any of its Affiliates for the LCP or any part thereof.
- (u) **"Company's Other Contractors"** means all contractors and subcontractors of Company or its Affiliates, including all of their contractors and consultants (including any warranty surveyor or inspector) except Contractor and Subcontractors.
- (v) **"Company Representative"** means the person designated in accordance with **Article 10.4**.
- (w) **"Company Supplied Data"** means those documents listed in Exhibit 11 – Company Supplied Documents, together with such other documents to be provided by Company as shall be designated by Company in writing from time to time.
- (x) **"Confidential Information"** has the meaning ascribed thereto in **Article 28.1**.
- (y) **"Contract"** as used in the Exhibits has the same meaning as Agreement.
- (z) **"Contract Price"** means the sum of money specified in the Agreement, as the same may be adjusted from time to time by agreement between the Parties or in accordance with the terms of the Agreement, being the consideration for the satisfactory performance of the Work by Contractor in accordance with the Agreement and as specified in Exhibit 2 - Compensation.



- (aa) **"Contractor"** means the Person identified as Contractor on the first page of this Agreement and its successors and permitted assigns.
- (bb) **"Contractor Group"** means Contractor and Subcontractors (including Subcontractor's subcontractors of every tier), and Contractor's Affiliates and the respective Personnel of each of the foregoing.
- (cc) **"Contractor's Items"** means all machinery, systems, fittings, parts, spare parts, apparatus, tools, materials, supplies and any other equipment, material or items which are necessary to be supplied by Contractor Group at their cost to perform the Work.
- (dd) **"Contractor's Personnel"** means the Personnel to be provided by Contractor Group from time to time to perform the Work.
- (ee) **"Contractor's Proprietary Information"** means information of a scientific or technical nature, including patented inventions, designs or trade secrets which Contractor employs in the course of performing the Work and is not otherwise required to be disclosed or delivered in accordance with other provisions in this Agreement.
- (ff) **"Contractor's Representative"** is the person nominated in accordance with **Article 5.5**.
- (gg) **"Court"** means a court of competent jurisdiction and includes the Supreme Court of Canada.
- (hh) **"Cure Period"** has the meaning ascribed thereto in **Article 30.2(a)**.
- (ii) **"Defect"** means any error, omission, deficiency, defect and/or failure in design, materials, engineering, workmanship, manufacture and/or installation.
- (jj) **"Deliver", "Delivered" or "Delivery"** means that point in time at which Contractor provides and Company takes physical possession of the Work (or any part), in accordance with **Article 24**.
- (kk) **"Dispute"** has the meaning ascribed thereto in **Article 39.1**.
- (ll) **"Drawings"** means the drawings set out in Exhibit 1 - Scope of Work.
- (mm) **"Effective Date"** means August 15, 2014.
- (nn) **"Engineer"** means Lower Churchill Management Corporation, or such other Person designated by Company in writing from time to time by giving Notice to Contractor, and any successors or assigns.
- (oo) **"Execution Date"** means the date noted as the date the Parties executed this Agreement as shown on the final page of these Articles of Agreement.

- (pp) "**Exhibits**" means the Exhibits forming part of this Agreement and identified in **Article 1.1**.
- (qq) "**Final Completion**" means that point in time when Contractor has completed all the Work except for Warranty obligations.
- (rr) "**Final Completion Certificate**" has the meaning ascribed thereto in **Article 25.7**.
- (ss) "**Force Majeure**" has the meaning ascribed thereto in **Article 31.1**.
- (tt) "**General Warranty Period**" has the meaning ascribed thereto in **Article 17.1**.
- (uu) "**Good Utility Practice**" means the practices, methods and acts engaged in, or approved by, a significant portion of the electric utility industry in North America, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, are expected to accomplish the desired result at a reasonable cost consistent with good business, reliability, safety, environmental and expediting practices. Good Utility Practice is not intended to be limited to optimum practice, method or act to the exclusion of all others, but rather to include all practices, methods or acts generally accepted by the electric utility industry in North America.
- (vv) "**HST**" means all amounts exigible pursuant to Part IX of the *Excise Tax Act* (Canada), R.S.C. 1985, c. E-15, including, for greater certainty, the taxes commonly referred to as the goods and services tax (GST) and the harmonized sales tax (HST).
- (ww) "**HVac**" means high voltage alternating current.
- (xx) "**HVdc**" means high voltage direct current.
- (yy) "**LCP**" means lower Churchill Projects which includes hydroelectric power developments on the lower Churchill River in the Labrador portion of the Province of Newfoundland and Labrador and associated power transmission facilities.
- (zz) "**LEG2/96**" means the 1996 "Model 'Consequences' Defects Wording" published by the London Engineering Group.
- (aaa) "**Letter of Credit**" means the letters of credit described in **Article 7.1**.
- (bbb) "**Logistics and Transportation Strategy**" means Contractor's logistics and transportation strategy required by Exhibit 4 - Supplier Document Requirement List.
- (ccc) "**Lower Churchill Construction Projects Benefits Strategy**" means the policy, strategy, obligations and procedures set out in Exhibit 16 - Lower Churchill Construction Projects Benefits Strategy.
- (ddd) "**Milestone**" has the meaning ascribed thereto in Exhibit 3 - Coordination Procedures.

TJ
CMA

- (eee) **"Milestone Schedule"** means the schedule for performance of the Work (or any part) as set out in Exhibit 9 – Schedule, as the same may be amended from time to time by agreement of the Parties or otherwise in accordance with the provisions of the Agreement.
- (fff) **"Notice"** means a written communication that is required to be delivered in accordance with **Article 40**.
- (ggg) **"Party"** means Company, each of Labrador Transmission Corporation and Labrador-Island Link Limited Partnership individually, or Contractor, as the context requires, and **"Parties"** means Company and Contractor collectively.
- (hhh) **"Payment Certificate"** means the certificate for payment of all or any portion of the Contract Price that is issued by Contractor to Engineer for Approval by Company, all in accordance with **Article 12**.
- (iii) **"Payment Milestone"** means a Milestone identified in Exhibit 2 – Compensation for which payment of a portion of the Contract Price is to be made by Company to Contractor.
- (jjj) **"Person"** means an individual, a partnership, a corporation, a trust, an unincorporated organization, a union, a government or any department or agency thereof and the heirs, executors, administrators, successors, assigns or other legal representatives of an individual, and words importing persons have a similar meaning.
- (kkk) **"Personnel"** means the directors, officers, employees, consultants, non-employed representatives and agents of a Person.
- (lll) **"Privacy Law"** means the *Access to Information and Protection of Privacy Act*, S.N.L. 2002 c. A 1.1, and all other applicable federal or provincial laws relating to disclosure of information, and the privacy, confidentiality or use of any information, about individuals and corporations.
- (mmm) **"Products Warranty Period"** has the meaning ascribed thereto in **Article 17.2**.
- (nnn) **"Punch List"** means a list of Defects and/or items or parts of the Work that are not complete.
- (ooo) **"Quality Plan"** means the plan described in Exhibit 7 – Quality Requirements.
- (ppp) **"Ready for Operations Handover Certificate"** means the certificate issued by Contractor to Company described in Exhibit 1 – Scope of Work.
- (qqq) **"Security Interests"** means the following rights granted by Labrador Transmission Corporation and/or Labrador-Island Link Limited Partnership to the Security Trustee:

- (i) any right of set-off or combination of accounts intended to secure the payment or performance of an obligation,
 - (ii) any interest in property securing an obligation owed to, or a claim by, a Person other than the owner (which for the purposes hereof shall include a possessor under a title retention agreement and a lessee under a capital lease or in a sale and leaseback transaction), including by way of mortgage, pledge, charge, lien, assignment by way of security, hypothecation, security interest, hire purchase agreement, conditional sale agreement, deposit arrangement, deemed trust, title retention, capital lease, discount, factoring or securitization arrangement deemed trust, on recourse terms,
 - (iii) any preference, priority, adverse claim, levy, execution, seizure, attachment, garnishment or other encumbrance which binds property, and
 - (iv) any agreement to grant any of the foregoing rights or interests.
- (rrr) **"Security Trustee"** means the collateral trustee under a deed of trust and mortgage relating to senior secured bonds of Labrador Transmission Corporation and/or Labrador-Island Link Limited Partnership, for and on behalf of the holders of such bonds from time to time, and any successor or assignee thereof.
- (sss) **"Site"** means the location for the performance of Work as may be further described in Exhibit 1 – Scope of Work, which may include:
- (i) at the power plant, dam and/or immediate vicinity at Muskrat Falls (Labrador);
 - (ii) at any substations, converter stations, condenser stations and transition compounds at Churchill Falls (Labrador), Forteau Point (Labrador), Soldiers Pond (Newfoundland), Shoal Cove (Newfoundland); and/or
 - (iii) at power transmission line routes, including all roads and access routes to Muskrat Falls (Labrador), Churchill Falls (Labrador), Forteau Point (Labrador), Soldiers Pond (Newfoundland), Shoal Cove (Newfoundland) and associated transmission lines.
- (ttt) **"Standard of a Prudent Contractor"** means good faith performance of contractual obligations and exercising that degree of care, skill, diligence, prudence, workmanship and foresight expected from a skilled and experienced contractor engaged in the same type of undertaking, in similar circumstances or conditions and in compliance with all Applicable Laws and to the satisfaction of Authorities.
- (uuu) **"Subcontract"** means an agreement (including any supplement or amendment) entered into between Contractor and any Person in the manner and to the extent permitted under the terms of the Agreement by which Contractor engages such Person to perform any part of the Work.



- (vvv) "**Subcontractor**" means any Person engaged by Contractor to perform any part of the Work pursuant to a Subcontract, and shall include the successors and permitted assigns of any such Person.
- (www) "**Substantial Completion**" means that the Work has been completed to the extent specified in **Articles 25.1**
- (xxx) "**Substantial Completion Certificate**" means the certificate issued in accordance with **Article 25.2**.
- (yyy) "**Suspension Expenses**" has the meaning ascribed thereto in **Article 34.2**.
- (zzz) "**Suspension Period**" has the meaning ascribed thereto in **Article 34.1**.
- (aaaa) "**Tax**" or "**Taxes**" means any tax, fee, levy, rental, duty, (including for greater certainty, all customs duties, anti-dumping duties and countervailing duties) charge, royalty or similar charge including, for greater certainty, any federal, state, provincial, municipal, local, aboriginal, foreign or any other assessment, governmental charge, imposition or tariff wherever imposed, assessed or collected, and whether based on or measured by gross receipts, income, profits, sales, use and occupation or otherwise, and including any income tax, capital gains tax, fuel tax, capital tax, goods and services tax, harmonized sales tax, value added tax, sales tax, withholding tax, property tax, business tax, ad valorem tax, transfer tax, franchise tax, payroll tax or excise tax, together with all interest, penalties, fines or additions imposed, assessed or collected with respect to any such amounts.
- (bbbb) "**Technical Data Schedules**" means schedules attached to documents in the Technical Specifications.
- (cccc) "**Technical Requirements**" means specifications, drawings, plans or other documentation of a technical or scientific nature, and tests, set out or referenced in the Exhibits.
- (dddd) "**Technical Specifications**" or "**Specifications**" means the documents as listed in the Technical Document List contained in Exhibit 1 – Scope of Work.
- (eeee) "**Term**" has the meaning ascribed thereto in **Article 1.16**.
- (ffff) "**Trial Operation**" has the meaning ascribed thereto in Exhibit 1 – Scope of Work.
- (gggg) "**Warranty**" means Contractor's obligations set out in **Article 17**.
- (hhhh) "**Warranty Period**" means the General Warranty Period or the Products Warranty Period as the context or circumstances may require.
- (iiii) "**Warranty Work**" has the meaning ascribed thereto in **Article 17.6**.

- (jjjj) "**Work**" means all design, engineering, labour, services and obligations to be performed and materials, equipment and products to be supplied by Contractor under the terms of this Agreement, as more particularly described in **Article 3**, Exhibit 17 - Joint Cost Savings Initiative for Civil Works and Exhibit 1 – Scope of Work, including Changes and the provision of all Personnel, plant, supplies, facilities, documentation, records and other items necessary to the performance of such design, engineering, labour, services and obligations.
- (kkkk) "**Worksite**" means any lands, waters and any other places on, under, over, in or through which the Work is to be performed, including design offices, workshops, onshore facilities, factories, fabrication facilities and places where Contractor Items are obtained, stored or used for the purposes of this Agreement.
- 1.3 The doctrine of *contra proferentem* shall not apply in the interpretation of this Agreement, meaning that if there is any ambiguous language in this Agreement it shall not be interpreted more strongly against the Party who prepared or drafted the ambiguous language.
- 1.4 Reference to any Party includes that Party's executors, administrators, substitutes (including, but not limited to, persons taking by novation), successors and permitted assigns.
- 1.5 If an action pertaining to the administration of this Agreement, Notices or Disputes is required to be completed on a specified day which is not a Business Day, then the action shall be completed instead on the next Business Day.
- 1.6 Whenever in this Agreement the singular member or a masculine gender occurs the same shall be respectively construed as the plural, feminine or neuter and vice versa as the context or reference may require. Where a word is defined in this Agreement, a derivative of that word shall have a corresponding meaning.
- 1.7 Unless the context otherwise requires, reference to any Article is a reference to an Article or paragraph in this Agreement, and any reference to a Section is a reference to a Section or paragraph in an Exhibit.
- 1.8 The titles, headings, captions or indices shall not be used in any way in construing or interpreting any provisions of this Agreement.
- 1.9 The recitals form part of and are incorporated into this Agreement.
- 1.10 The words "includes" and "including", whether or not used with the words "without limitation" or "but not limited to", shall not be construed to be limited by the specific enumeration of items but shall in all cases be without limitation and construed and interpreted to mean "includes without limitation" and "including without limitation".
- 1.11 Reference to any Act or legislation, or to a provision of an Act or legislation, is to the Act or legislation as amended and includes any statutory modification or re-enactment of it, a

CM TS

legislative provision substituted for it and any regulation, subordinate legislation or other statutory instrument issued under it.

1.12 If any provision in the Exhibits conflicts with a provision in the Articles of this Agreement, the provision in the Articles of this Agreement shall prevail. In the event that any provision in any of the Exhibits conflicts with any other provision in the Exhibits, priority shall be given in the order listed as follows:

- (a) Exhibit 17 - Joint Cost Savings Initiative for Civil Works
- (b) Exhibit 1 - Scope of Work
- (c) Exhibit 9 – Schedule
- (d) Exhibit 2 – Compensation
- (e) Exhibit 7 - Quality Requirements
- (f) Exhibit 3 - Coordination Procedures
- (g) Exhibit 11 - Company Supplied Documents
- (h) the remaining Exhibits in their numerical order by Exhibit number

except in respect of Technical Requirements, in which case the more stringent provision will prevail.

1.13 If the Standard of a Prudent Contractor conflicts with any other provision in this Agreement, the other provision in the Agreement shall prevail. Contractor shall give Notice to Company of any standard or requirement in this Agreement that Contractor considers is less stringent than the Standard of a Prudent Contractor.

1.14 The language of this Agreement shall be English and all communications and dealings under and the resolution of any disputes concerning this Agreement shall be conducted in the English language. All information, data or documentation of any nature that Contractor prepares in the performance of the Work, is required to submit to Company or is requested by Company to submit, shall be prepared in English.

1.15 Any Approval by Company or Acceptance by Engineer shall not waive Contractor's obligations under Applicable Laws or as outlined in this Agreement.

1.16 This Agreement shall be effective from the Effective Date and shall remain in full force and effect until the Work, and all Warranty obligations, is complete (the "**Term**"), unless earlier terminated in accordance with the provisions of this Agreement.

1.17 Whenever an amount of money is referred to in this Agreement, such amount shall, unless otherwise expressly stated, be deemed to be Canadian dollars.

- 1.18 The illegality or unenforceability of any provision of this Agreement shall in no way affect the legality or enforceability of any other provision hereof. Any illegal or unenforceable provision shall be deemed severed from this Agreement and the remainder of this Agreement shall be construed and enforced as if this Agreement did not contain such illegal or unenforceable provision.
- 1.19 This Agreement shall be construed and the relations between the Parties determined in accordance with the Applicable Laws of Newfoundland and Labrador and Canada, including any limitation periods, and reference to such Applicable Laws shall not, by application of conflict of laws rules or otherwise, require the application of the Applicable Laws in force in any jurisdiction other than Newfoundland and Labrador. All Disputes, with the exception of Disputes (i) involving intellectual property, patents, trademarks and copyrights; (ii) relating to taxation issues where Revenue Canada is a party to the dispute; and (iii) where the remedy sought is an injunction, are required to be resolved in accordance with **Article 39**. The Parties hereby irrevocably attorn to the Courts of Newfoundland and Labrador and Canada for any Disputes (i) involving intellectual property, patents, trademarks and copyrights; (ii) relating to taxation issues where Canada Revenue Agency is a party to the Dispute; and (iii) where the remedy sought is an injunction.
- 1.20 The rights and recourse of Company and Contractor contained in the Agreement are cumulative and not in the alternative unless otherwise provided. The exercise of any such rights or recourse shall not constitute a waiver or renunciation of any other rights or recourse. Except as expressly provided in the Agreement, the obligations imposed by the Agreement and the rights and remedies available thereunder are in addition to and not a limitation of any obligations, rights and remedies otherwise imposed or available by law.
- 1.21 Company is entering into this Agreement, and Contractor acknowledges that Company is entering into this Agreement, solely in its own right and not on behalf of or as agent of the Crown in right of the Province of Newfoundland and Labrador.
- 1.22 Labrador Transmission Corporation and Labrador-Island Link Limited Partnership shall be jointly and severally liable to Contractor for all liabilities, indemnities and obligations of Contractor under, and relating to, this Agreement. Subject to the limitation of liability pursuant to **Article 21.14**, Contractor acknowledges and agrees that all legal rights and remedies available to Company at law or under this Agreement may be exercised individually by Labrador Transmission Corporation or Labrador-Island Link Limited Partnership

ARTICLE 2 CONTRACTOR'S STATUS

- 2.1 In the performance of its obligations under this Agreement, Contractor is an independent contractor and neither Contractor nor Contractor's Personnel shall be employees of Company. Contractor's Personnel shall be under the direct supervision and control of Contractor and not of Company. Contractor accepts complete responsibility as the principal for Contractor's Personnel.

- 2.2 Contractor is not an agent of Company or an agent of any Affiliate of Company. Contractor shall not represent or hold itself out as an agent of Company or an agent of any Affiliate of Company.
- 2.3 This Agreement shall not constitute a joint venture or partnership of Company and Contractor or of Company and any Subcontractor.
- 2.4 Contractor acknowledges that it shall be carrying on business in the Province of Newfoundland and Labrador during the performance of the Work and agrees to comply with the registration and other relevant provisions of the *Corporations Act*, RSNL 1990, c. C-36.

ARTICLE 3 CONTRACTOR'S OBLIGATIONS

- 3.1 Contractor shall carry out all of its obligations under this Agreement and shall perform the Work, including:
- (a) any necessary design or engineering which is the responsibility of Contractor under this Agreement;
 - (b) all work required for the procurement, fabrication, manufacturing, construction, testing, transport, delivery, maintenance, storage, documentation, preservation, installation, commissioning, repair and remediation of the Work;
 - (c) provision of all supervision, services, labour, trades, drafting, accounting, purchasing, expediting, inspection, testing, Personnel, Contractor's Items, transportation, mobilization and demobilization required for the compliance with and fulfillment of all Contractor's obligations under this Agreement;
 - (d) provision and installation of all equipment, products and materials required by this Agreement at the Site;
 - (e) ensuring the Work conforms strictly as to quality and description with the particulars stated in Exhibit 1 - Scope of Work and Company Supplied Data and complies with all Applicable Laws;
 - (f) satisfaction of the performance requirements set out in Exhibit 1 – Scope of Work;
 - (g) provision of all documents as required under, and in accordance with, the terms of this Agreement;
 - (h) provision of any work not expressly detailed in this Agreement or in Contractor's proposal, but which is reasonably necessary for the performance of the Work in accordance with this Agreement;
 - (i) rectification of any and all deficiencies as noted by Company, Engineer or any Authority; and

- (j) completing the Work, and portions thereof, in accordance with Exhibit 9 - Schedule.
- 3.2 Contractor shall review and verify the details contained in Exhibit 17 - Joint Cost Savings Initiative for Civil Works, Exhibit 1 - Scope of Work, and Exhibit 11 - Company Supplied Documents and represents that it has a full knowledge and understanding of the nature and the scope of the Work, and including weather and all other conditions at Worksites. Contractor shall advise Company of any errors, omissions and inconsistencies in this Agreement and shall not proceed with any part of the Work affected by such until resolved by Engineer.
- 3.3 Contractor shall ensure the work it performs is sufficient to encompass all matters necessary for the proper and efficient fulfillment of Contractor's obligations under this Agreement. Without limitation, Contractor shall undertake the Work in accordance with Applicable Laws, this Agreement and as required by any Authority.
- 3.4 Contractor shall perform the Work to the Standard of a Prudent Contractor and in accordance with Good Utility Practice and shall ensure that Subcontractors shall perform to the same standards. Any material failure or any refusal or inability of Contractor to comply with the foregoing requirements shall constitute a breach of the terms and conditions of this Agreement. Contractor shall be solely responsible for any operations comprising the Work performed by Contractor Group.
- 3.5 Except for the authorizations, permits and licenses provided by Company pursuant to **Article 10.3**, Contractor shall obtain and maintain all directions, guidelines, permits, certificates, authorizations, dispensations and licences of any type whatsoever necessary for the performance of the Work and shall comply with requirements of Authorities. Contractor shall promptly notify Company in writing upon any discovery of a failure to adhere to the foregoing requirements in connection with the performance of the Work. Contractor shall not be liable for any delays in the issuance of permits or licenses of any type that Contractor is not obliged to obtain by Applicable Laws or under this Agreement. The Parties shall provide necessary assistance to each other in a timely manner upon request for the purpose of obtaining permits and licenses for the performance of the Work.
- 3.6 Contractor shall assist Company and provide necessary information and documents to support Company fulfilling Company's obligations set out in **Article 10.3**.
- 3.7 Contractor shall comply with all lawful instructions of Company pertaining to the performance of the Work, as communicated through the Company Representative, Engineer or otherwise in accordance with this Agreement. The absence of instructions from Company shall not permit Contractor to avoid its duty to perform its obligations under this Agreement. If Contractor fails to comply with a lawful instruction, then Company may at Contractor's sole risk and cost take whatever measures Company considers necessary to implement the instruction.
- 3.8 Contractor shall cooperate with Company's Other Contractors and Company Personnel working at the Worksites with a view to reducing interference with Company's Other Contractors and Company Personnel or with the operations of Company.



- 3.9 Contractor shall at all times promptly take all steps necessary to maintain good labour relations with Contractor Personnel to the extent that such requirement is consistent with sound business practice in accordance with the Standard of a Prudent Contractor. Subject to **Article 31.1(c)**, the existence of any labour disturbance relating to Contractor Personnel shall not relieve Contractor of its obligations hereunder.
- 3.10 Contractor shall transfer all unused excess materials, if any, to Company at the completion of the Work or, at Company's option, such excess materials shall be sold by Contractor and any amounts realized from such sales shall be credited to Company as a deduction from the Contract Price.
- 3.11 Contractor shall take such action as Company may specify to enable Company to comply with all Applicable Laws to be complied with by Company and in particular, Applicable Laws governing the use of local personnel, goods and services, which are in effect or which may come into effect during the Term.
- 3.12 Contractor shall not change any location or place of origin identified in the Agreement for fabrication, manufacture or sourcing of equipment, materials or products without the prior Approval of Company.
- 3.13 Contractor shall be responsible, at its cost, for maintaining such inventories of Contractor's Items as necessary so as to avoid interruptions in the performance of the Work.

ARTICLE 4
CONTRACTOR'S DESIGN OBLIGATIONS

- 4.1 The provisions of this **Article 4** shall only apply to any design, engineering or architectural requirements that are the responsibility of Contractor under this Agreement.
- 4.2 All parts of the Work required by Applicable Laws to be performed by licensed or registered professional engineers or architects shall be performed by registered professional engineers and architects. In particular, any drawings, including design, installation and construction drawings, specific to the Province of Newfoundland and Labrador must be stamped by professional engineers registered to practice in the Province of Newfoundland and Labrador.
- 4.3 In the engineering and design of any equipment, products or materials to be incorporated into the Work and in the performance of the Work, Contractor shall exercise the standard of care normally exercised by licensed or registered professional engineers or architects having specialized knowledge, expertise and experience in the design of similar work and the standard of care for Good Utility Practice.
- 4.4 For all engineering and design Contractor Group shall employ only engineering and design personnel who have the requisite knowledge and skills through education, training and experience to perform the engineering and design assigned to them.

- 4.5 Contractor shall design and engineer the Work for a useful life that is not less than the minimum stated in the Technical Requirements.
- 4.6 Contractor shall promptly remedy any error, omission, ambiguity, inconsistency or inadequacy or any other Defect identified by Engineer or Company in any Work.
- 4.7 Engineering and design review meetings will be scheduled and coordinated by Engineer in accordance with the provisions of Exhibit 3 – Coordination Procedures. Contractor shall attend all such engineering and design review meetings.
- 4.8 Contractor shall be solely responsible for all design and engineering for the Work for which it is responsible under this Agreement. Contractor shall not be relieved of its obligations under this Agreement by virtue of any Approval by Company or Acceptance by Engineer of Contractor's design and engineering or by virtue of a design and engineering review by Company Group.
- 4.9 Within fifteen (15) Business Days of receipt of drawings issued by Contractor to Company or Engineer, Company or Engineer shall Approve or Accept the drawings or provide reasons in writing for rejection.

ARTICLE 5 CONTRACTOR'S PERSONNEL

- 5.1 Contractor shall furnish and procure the numbers and classifications of Contractor's Personnel required to perform the Work. In the event Contractor fails to provide the numbers or classifications of Contractor's Personnel required in respect of the Work, Company may issue a Notice that Contractor is in default of this **Article 5.1**, and:
- (a) require Contractor within five (5) Business Days of such Notice to prepare an action plan to cure the default for Company's Approval;
 - (b) require Contractor to commence and diligently follow the Approved action plan; and
 - (c) if Contractor fails to commence and diligently follow the action plan, Company may, at Contractor's sole expense, retain other contractors and deduct the costs associated with retaining such other contractors from the applicable compensation payable by Company to Contractor for the period such positions remain unfilled by Contractor.
- 5.2 Contractor shall ensure that throughout the Term each of Contractor's Personnel has the qualifications, training and experience, and holds the licenses and certifications necessary to carry out assigned duties in the performance of the Work. Contractor shall furnish records of competence for all of Contractor's Personnel when requested to do so by Company.
- 5.3 Contractor shall immediately remove and/or replace, at Contractor's own expense, any of Contractor's Personnel if, in the sole judgment of Company, any of Contractor's Personnel:

- (a) cease to carry out his or her duties in a manner satisfactory to Company or engages in misconduct, unsafe activities, or is incompetent or negligent;
 - (b) is certified by a medical practitioner as being medically unfit for the duties required of him or her; or
 - (c) risks impairing his or her usefulness in the performance of his or her duties through the use of alcohol or drugs.
- 5.4 Unless otherwise Approved by Company, Contractor shall replace, or cause to be replaced, at Contractor's own expense, any of Contractor's Personnel who is transferred or dismissed by Contractor or any Subcontractor, or leaves Contractor's or Subcontractor's employ.
- 5.5 Contractor shall nominate in writing one of Contractor's Personnel as Contractor's Representative. Contractor's Representative shall:
- (a) be in charge of Contractor's Personnel and shall supervise Contractor's Personnel and maintain strict discipline in order to ensure the timely and efficient performance of the Work, and shall notify Company in writing of the occurrence of or threat of any labour dispute involving Contractor's Personnel;
 - (b) have full authority to act on behalf of and bind Contractor on all labour and Contractor's Personnel issues which arise between Company and Contractor;
 - (c) supervise the performance of the Work;
 - (d) have the authority to commit Contractor to any course of action within the bounds of its rights and obligations under this Agreement; and
 - (e) be authorized to receive on behalf of Contractor any Notices, information or decisions of Company made pursuant to this Agreement.
- 5.6 Subject to **Article 5.7**, if positions of Contractor's Personnel of key importance to the performance of the Work are listed in Exhibit 2 – Compensation, Contractor shall not change any Personnel in such positions without the prior written consent of Company which consent may be withheld in Company's sole and absolute discretion. If Contractor removes or replaces key Personnel listed in Exhibit 2 – Compensation without Company's prior written consent then Contractor shall pay Company liquidated damages in accordance with Section 12 of Exhibit 2 - Compensation. Any liquidated damages payable by Contractor to Company with respect to key Personnel shall be independent of and not governed by any limits on liquidated damages set out in **Article 36** or otherwise affect Company's rights under this Agreement.
- 5.7 In the event any key Personnel listed in Exhibit 2 – Compensation leave the service of Contractor Group due to illness, death, retirement or termination of employment, Contractor shall promptly use all commercially reasonable efforts to retain suitably trained and experienced replacement key Personnel. In such circumstances, Company shall have the right, which shall be reasonably exercised by Company, to Approve such replacement

key Personnel. Contractor shall not retain such replacement key Personnel on a permanent basis without first obtaining Company's Approval, which shall not be unreasonably withheld or delayed.

ARTICLE 6 SUBCONTRACTS

- 6.1 Subject to **Article 6.2** and **Article 6.3**, Contractor may employ Subcontractors to perform or support the performance of the Work or to furnish equipment to be provided by Contractor hereunder.
- 6.2 Contractor shall not Subcontract the whole of the Work. Subject to **Article 6.3**, Contractor shall not Subcontract the performance of any portion of the Work, or its obligations hereunder, without Company's prior Approval.
- 6.3 Subcontractors that are identified in Exhibit 8 – Subcontractors, Manufacturers and Material Sources, are Approved by Company. Contractor shall not be entitled to replace or add one or more Subcontractors without the prior Approval of Company. Company shall respond to Contractor's request for Approval to replace a Subcontractor within a reasonable time, and such Approval shall not be unreasonably withheld.
- 6.4 Any Subcontract permitted under this **Article 6** shall not relieve Contractor of any of its duties, obligations, warranties, liabilities or responsibilities under this Agreement. Contractor shall be responsible for the acts, omissions and negligence of any delegate and any Subcontractors and any of their respective Personnel as fully as if they were the acts, omissions or negligence of Contractor's own Personnel.
- 6.5 Contractor shall oversee the performance of all Subcontractors and delegates and shall keep such records and accounts and furnish such reports and information relative to Subcontractors as Company may reasonably request. No Subcontract shall bind or purport to bind Company. All Subcontracts shall contain:
- (a) a clear statement that Contractor is entering into such Subcontracts as principal and not as agent for any other Person; and
 - (b) a provision permitting the assignment of the Subcontract by Contractor to Company, at Company's option, without consent of Subcontractor.
- 6.6 Contractor shall ensure that any provisions of this Agreement which are required to be included in its Subcontracts have been so included. Contractor shall preserve and protect the rights of Company under this Agreement with respect to the Work to be performed by any Subcontractors so that the subcontracting thereof shall not prejudice such rights.
- 6.7 Contractor shall be responsible for, and shall defend, protect, release, indemnify and hold Company harmless from and against all Claims of any nature incurred by Company in connection with the payment of Subcontractors and Subcontractor's Personnel, including all compensation, medical costs, Taxes (including all Canadian and foreign payroll and

withholding Taxes and remittances), unemployment insurance premiums, Canada pension plan contributions and other benefits of whatever nature or as may be applicable in any jurisdiction (including any jurisdiction where the Work is performed or where the Personnel reside or are employed).

- 6.8 Company shall have the option, which it may exercise at its sole discretion, to assign to Contractor part or all of the agreement between Company and a supplier for the supply of certain transformers and associated equipment and services pursuant to contract number PD0537 ("PD0537"). Contractor agrees that upon Company exercising its option to assign PD0537 to Contractor, or any part thereof:
- (a) Contractor consents to and accepts the assignment;
 - (b) Contractor assumes and shall be responsible for all Company's obligation existing and remaining unperformed as of the date of the assignment; and
 - (c) the supplier party to PD0537 shall be a Subcontractor and PD0537 shall be a Subcontract for the purposes of this Agreement.

ARTICLE 7 PERFORMANCE SECURITY

- 7.1 Contractor shall deliver within fifteen (15) Business Days of the Execution Date a letter of credit issued by a bank listed in Schedule I to the *Bank Act*, S.C. 1991, c.46 as security for the proper performance of Contractor's obligations under this Agreement, in the form and with the content specified in Exhibit 14 – Performance Security, the value and duration of which shall be:
- (a) equal to fifteen percent (15%) of the Contract Price until Commissioning Static Checks is complete at all Sites; and thereafter
 - (b) equal to five percent (5%) of the Contract Price from completion of Commissioning Static Checks at all Sites to the end the General Warranty Period.
- 7.2 All costs and expenses incurred in relation to the establishment and maintenance of the Letter of Credit described in this **Article 7** shall be included in the Contract Price.
- 7.3 Company may claim and have recourse to the Letter of Credit if Contractor has not performed its obligations in accordance with the Agreement or if Company otherwise has a Claim against Contractor.

ARTICLE 8 POLICY ON ETHICS/CONFLICTS OF INTEREST

- 8.1 Contractor, in performing its obligations under this Agreement, shall establish and maintain appropriate business standards, procedures and controls including those necessary to avoid any real or apparent impropriety or adverse impact on the interests of Company and its

Affiliates. Company reserves the right to review such standards and procedures at any time during the Term.

- 8.2 Contractor agrees to perform the Work and to conduct its operations in a manner which is in accordance with all Applicable Laws, consistent with the highest of ethical standards, including the Code of Business Conduct and Ethics set out in Exhibit 11 – Company Supplied Documents, and to avoid any unlawful or unethical intervention in the political affairs of any country. Contractor agrees to cause all Subcontractors to adopt and enforce the foregoing policy.
- 8.3 Contractor shall not pay any commission or fee, or grant any rebate or make any loan to any Personnel of Company Group or government official, or favour any Personnel of Company Group or government official with any gift or entertainment of significant value or enter into any business arrangement with any Personnel of Company Group or government official. Contractor agrees to cause all Subcontractors engaged in the performance of the Work to adopt and enforce the foregoing policy.

ARTICLE 9 COMPLIANCE WITH LAWS

- 9.1 In performing the Work and carrying out the provisions of this Agreement, the Parties shall comply with all Applicable Laws.
- 9.2 Company may from time to time require Contractor to provide to Company, and Contractor shall promptly so provide, evidence acceptable to Company, acting reasonably, that Contractor has in all respects complied with the obligations set forth in **Article 9.1**.

ARTICLE 10 COMPANY'S OBLIGATIONS

- 10.1 Subject to the provisions of this Agreement, Company agrees to engage Contractor to perform the Work in accordance with the terms of this Agreement.
- 10.2 Company, through the Company Representative or Engineer, shall provide to Contractor such instructions and information which can only be provided by Company. Subject to **Articles 40.5** and **40.6**, Contractor shall be entitled to reasonably rely on such instructions and information. The provision of any such instructions or information shall not in any way relieve Contractor of any of its obligations under this Agreement.
- 10.3 Company shall obtain all authorizations, permits and licenses as identified in Exhibit 6 – Environmental and Regulatory Compliance Requirements which Company is responsible to obtain in its own name.
- 10.4 Company shall designate a Company Representative who shall have authority to act on behalf of Company regarding matters under the Agreement, receive and issue Notices and perform such other duties and acts reserved to the Company Representative under this Agreement.



- 10.5 Company Representative shall at all times during the Term have access to Contractor's Items and Worksites and may without limitation monitor the performance of the Work.
- 10.6 Company Representative, by Notice to Contractor, may delegate any of his or her authority to any nominated deputy. Such Notice shall specify the precise authority of such deputy.
- 10.7 Company may change the Company Representative at any time at its sole discretion by Notice to Contractor.
- 10.8 Company is not obligated to supply any equipment, products or materials unless expressly stated in the Exhibits that Company will supply specific equipment, products or materials. If any such equipment, products or materials are supplied by Company to Contractor, the equipment, products and materials shall be in the care and custody of Contractor but shall remain the property of Company. Contractor shall not use any such equipment, products and materials supplied by Company except for the purpose for which they were intended under this Agreement, and Contractor shall be responsible for the proper care, handling and maintenance of all such equipment and materials and shall indemnify Company against any direct loss or damage to the equipment, products and materials supplied by Company to the extent caused by Contractor's negligent acts or omissions.
- 10.9 Subject to coordination and interfacing with work performed by Company's Other Contractors pursuant to Exhibit 9 – Schedule and drawings in Exhibit 1- Scope of Work, Company shall allow Contractor and all of its Subcontractors unrestricted access to each Site where Work is to be performed, including as required laydown areas.

ARTICLE 11

ROLE AND RESPONSIBILITIES OF ENGINEER

- 11.1 Engineer has been retained by Company to provide engineering, procurement and construction administration services. Engineer shall have such powers, discretions, functions and authorities as are specified in or as may be implied from this Agreement (including issuing instructions, decisions, orders and Acceptance).
- 11.2 Wherever Engineer is required to exercise its discretion by the giving of a decision, opinion or Acceptance, or to determine the cost or value of any matter which may affect the rights or obligations of a Party, Engineer shall exercise such discretion impartially within the terms of this Agreement, having regard to all circumstances.
- 11.3 Contractor shall comply with the decisions, orders and instructions given by Engineer in accordance with this Agreement.
- 11.4 Engineer shall confirm any decision, order or instruction in writing and any decision, order or instruction shall not be effective until such written confirmation has been received by Contractor.
- 11.5 Engineer shall be the interpreter of first instance of the Technical Requirements.

- 11.6 Contractor agrees that all Contractor's Items may be subject to inspection and Acceptance from time to time by Engineer or any Authority. Any Contractor Item which is rejected for not performing to standards set out in this Agreement or by Applicable Laws shall be immediately removed from the Worksite by Contractor and replaced with Contractor's Items Acceptable to Engineer at Contractor's cost.
- 11.7 Contractor shall not commence any Work involving permanent installation of any equipment, materials or products until Contractor has submitted to Engineer and Engineer has Accepted the health, safety and environmental plans required by **Article 15** and drawings marked "Issued for Construction" for the part of the Work to be performed.
- 11.8 Engineer shall notify Contractor when the Site is available for permanent installation of any equipment, materials or products as part of the Work, and Contractor shall not commence any Work at the Site until such notification has been given.
- 11.9 Where the Agreement calls for the Acceptance by Engineer or Approval by Company with respect to design, manufacture, installation, testing and commissioning of the Work, any such Acceptance or Approval is for general compliance with the Technical Requirements and does not relieve Contractor from satisfying all Technical Requirements. No inspection, review or Acceptance by Engineer or Approval by Company shall release Contractor from compliance with Contractor's obligations under this Agreement or Applicable Law.

ARTICLE 12 COMPENSATION AND TERMS OF PAYMENT

- 12.1 As full compensation for the performance by Contractor of all its obligations under this Agreement, Company shall pay Contractor the Contract Price in accordance with the terms of this Agreement including this **Article 12**, Exhibit 2 – Compensation and Exhibit 3 – Coordination Procedures. Only those rates and prices specifically identified in Exhibit 2 – Compensation shall be paid by Company and any costs not specifically identified in Exhibit 2 - Compensation shall be deemed to be included in such rates and prices. Except as may be otherwise expressly provided in Exhibit 2 – Compensation, Company shall have no obligation to pay Contractor for the purchase of any goods or performance of services which have not been Approved prior to the delivery to Company of such goods or prior to the performance of such services.
- 12.2 Within thirty (30) days of the Execution Date, Engineer, on behalf of Company, shall provide Contractor with a pro forma invoice that sets out all relevant Company cost codes and required information for billing. Contractor shall utilize the pro forma invoice and cost codes when billing Company.
- 12.3 Contractor shall be paid the portion of the Contract Price applicable to a Payment Milestone following Approval by Company of a Payment Certificate and in accordance with the provisions of this **Article 12**.
- 12.4 Contractor shall provide, maintain and issue to Engineer, a detailed listing of the invoiced amounts of the Work and cash flow requirements regarding unbilled portions of the Work in



accordance with the requirements set out in Exhibit 3 – Coordination Procedures. Contractor shall develop and present a format for the listing for Company Approval.

- 12.5 Contractor's invoices shall comply in all respects with Company's invoicing instructions as provided for in this Agreement including Exhibit 2 – Compensation, Exhibit 3 – Coordination Procedures and Exhibit 13 - Provincial Benefits.
- 12.6 Invoices shall be accompanied by:
- (a) all relevant supporting documentation as Company or Engineer may require to verify completion of the Work, the accuracy of the fees, charges and third party charges invoiced including copies of any relevant third party invoices, receipts, and purchase orders;
 - (b) timesheets Accepted by Engineer for any Work performed on a time and materials basis;
 - (c) receiving reports and a summary page of all third party invoices, complete with summary sheet cross referring to all backup information;
 - (d) a sworn declaration, in the form set out in Appendix G to Exhibit 2 – Compensation, that Contractor has paid Subcontractors, vendors and suppliers all amounts properly due for work, services, materials and equipment supplied or performed and billed by the Subcontractors, vendors and suppliers and carried in Contractor's invoices for which Payment Certificates have been Approved by Company.

(All invoicing requirements, information and documentation described in this **Article 12.6** shall hereinafter be referred to as the "**Billing Information**". Billing Information should always comprise a summary sheet with cross referencing to all backup information which demonstrates a clear audit trail substantiating all charges presented on the invoice.)

- 12.7 Company shall not be required to pay any invoice from Contractor until complete Billing Information has been provided to Company. Company shall not be responsible for delays in payment due to Contractor not providing complete Billing Information.
- 12.8 When Contractor considers that a Payment Milestone has been completed and the criteria for completion of that Milestone have been achieved, Contractor shall issue to Engineer, for Company's Approval, a single Payment Certificate in the form set forth in Exhibit 3 – Coordination Procedures, that sets out:
- (i) for Work items paid on a unit price basis, the number of units completed for the Payment Milestone together with the unit price and total claimed for each unit price item;
 - (ii) for Work items paid on a fixed lump sum basis, the amount claimed for each fixed lump sum item based on the percentage completed less any amounts previously paid by Company for each such item;

- (iii) for Work items paid on a reimbursable basis, Contractor will include such reimbursable items accompanied by appropriate references to the Agreement covering such items and a summary sheet cross referencing such items to all relevant Billing Information to demonstrate a clear audit trail substantiating all such items presented with the Payment Certificate;

together with all relevant supporting documentation as Engineer or Company may reasonably require to verify the successful completion of the relevant Milestone criteria and achievement of the Payment Milestone.

- 12.9 Where payment is made for Work items on a unit price basis, the quantities of unit priced items in Exhibit 1 – Scope of Work and/or Exhibit 2 - Compensation are estimated quantities only. Any increase or decrease in the quantities of Work performed in respect of those unit price items listed in Exhibit 1 – Scope of Work and/or Exhibit 2 – Compensation shall not result in a change in the unit price for those items.
- 12.10 On receipt of a Payment Certificate, Engineer shall review it and the supporting documentation to determine if the Milestone has been achieved. Engineer shall render its decision within ten (10) Business Days from receipt of a Payment Certificate from Contractor. If Engineer determines that:
- (a) the Milestone has been achieved Engineer shall:
- (i) recommend to Labrador Transmission Corporation and Labrador-Island Link Limited Partnership that the Payment Certificate may be Approved, and
- (ii) direct Contractor as to the amount to invoice each of Labrador Transmission Corporation and Labrador-Island Link Limited Partnership;
- or
- (b) the Milestone has not been achieved, Engineer shall reject the Payment Certificate and advise Contractor in writing the reasons why the Milestone has not been achieved.
- 12.11 Within five (5) Business Days after the first day of each month following a month in which a Payment Certificate has been Approved by Company for a Payment Milestone, Contractor shall submit an invoice to each of Labrador Transmission Corporation and Labrador-Island Link Limited Partnership for the amount due as determined in accordance with Exhibit 2 – Compensation and the requirements of Exhibit 3 – Coordination Procedures. The invoice shall be supported by the Approved Payment Certificate and all Billing Information as Engineer or Company may reasonably require.
- 12.12 Contractor shall address invoices to:

For Labrador Transmission Corporation:

Labrador Transmission Corporation



350 Torbay Road Plaza, Suite No. 2
St. John's, NL
A1A 4E1
Attention: Lower Churchill Project Accounts Payable

For Labrador-Island Link Limited Partnership:

Labrador-Island Link Limited Partnership
350 Torbay Road Plaza, Suite No. 2
St. John's, NL
A1A 4E1
Attention: Lower Churchill Project Accounts Payable

- 12.13 If any Change affects the Contract Price, Contractor may issue an invoice for the Work completed pursuant to the applicable Change Order, as follows:
- (a) For Change Orders carried out on a lump sum or unit price basis, Contractor shall comply with the requirements outlined in **Articles 12.5** through **12.13** in the same manner as if the completion of the Change Order Work constituted a Payment Milestone.
 - (b) For Change Orders carried out on a reimbursable basis, Contractor shall include in its application for payment pursuant to **Article 12.8** that portion of the Change completed in the previous month accompanied by all Billing Information including an executed copy of the relevant Change Order, a copy of timesheets Accepted by Engineer for work compensated on a time and material basis, daily progress reports and any other information as Engineer may require to verify the progress, completion and associated charges pertaining to the Change. The final invoice for reimbursable Changes shall also include any information as Engineer may reasonably require to verify the successful completion of the Change.
- 12.14 If Contractor fails to comply with the requirements of **Article 12.6**, the Work shall be deemed incomplete and Company may withhold monies otherwise payable to Contractor and/or return invoices to Contractor for resubmission until such Billing Information has been provided to the satisfaction of Company.
- 12.15 Within thirty (30) days following Engineer's receipt of a properly prepared invoice, accompanied by acceptable Billing Information in accordance with this **Article 12**, Company shall pay to Contractor the amount and stated to be due, subject to the following:
- (a) Company shall be entitled to withhold from such payment any amount(s) required by Applicable Laws or permitted hereunder;
 - (b) if Engineer disputes any item charged in any invoice, Engineer shall notify Contractor of the disputed item specifying the reason therefore, and payment of such disputed item shall be withheld until settlement of the dispute, provided that payment shall be made on the undisputed portion; and

- (c) Company shall be entitled to set-off amounts which it owes to Contractor under this Agreement or any other agreement with Contractor against amounts which Contractor owes to Company under this Agreement or any other agreement with Company.
- 12.16 Company shall be entitled to deduct and shall retain from each payment a ten percent (10%) holdback pursuant to the *Mechanics' Lien Act*, R.S.N.L 1990, c.M-3. Company shall release the holdback funds in accordance with **Articles 25.6**.
- 12.17 Company shall be entitled to withhold payment or to deduct from Contractor's compensation, any amounts associated with:
- (a) invoiced items reasonably disputed by Company;
 - (b) Contractor's failure to remit or pay any Tax or make any other payment required under Applicable Laws;
 - (c) Defects in the Work not remedied;
 - (d) liens or claims filed or registered against property, or reasonable evidence indicating to Company the probability of claims or liens being filed or registered, with respect to the Work;
 - (e) as expressly provided in Exhibit 2 – Compensation, or elsewhere in this Agreement; and
 - (f) amounts owing to Company by Contractor as liquidated damages pursuant to **Article 36**.
- 12.18 Company's obligation to pay any amounts to Contractor under this Agreement is subject to the following terms and conditions, which are inserted for the sole benefit of Company and may be waived by Company in whole or in part in respect of any payment, without prejudicing the rights of Company at any time to assert such terms or conditions in respect of any subsequent payment, namely:
- (a) no notice of claim for lien shall have been given in connection with the Work or if a notice of such a claim for lien shall have been given, such claim shall have been released, vacated or, if applicable, removed from title or the claim shall have been secured through the delivery of a bond in respect of the full amount of the claim;
 - (b) there shall exist no default, or any event which, with the passage of time or the giving of notice or both, would constitute a material default on the part of Contractor;
 - (c) Company shall have received such other documents or satisfied such other conditions as Company or its project lenders may reasonably require and which are material to the Work.

- 12.19 Payments by Company to Contractor hereunder will be made by electronic transfer to Contractor's bank. Contractor shall provide Company, in writing, with the necessary banking information to facilitate electronic transfer of funds to Contractor's bank. Any changes in Contractor's banking information or payment instructions shall be submitted in writing to the Company's Representative. Company shall not be held liable or responsible for errors or delays resulting from incorrect or delayed submission of changes in banking instructions.
- 12.20 If a Party fails to make payments as they become due under the terms of this Agreement or under an award by arbitration or Court, interest at the three (3) month Treasury Bill rate, as published by the Bank of Canada for the period in question, on unpaid amounts will also be due and payable until payment. Interest will apply at the rate and in the manner prescribed by this **Article 12.20** on the amount of any claim settled pursuant to **Article 39** from the date the amount would have been due and payable under this Agreement, had it not been in dispute, until the date it is paid.
- 12.21 For greater certainty, Contractor and Company acknowledge that, notwithstanding any other provision of this Agreement, any amounts payable by Company to Contractor pursuant to this **Article 12** are exclusive of any HST as payable pursuant to Section 165 of the *Excise Tax Act* (Canada), R.S.C. 1985, c. E-15. If Contractor is required to collect from Company an amount of HST with respect to the provision of any goods or services supplied pursuant to this Agreement, then Company, subject to compliance by Contractor with this **Article 12**, shall pay the amount of such HST to Contractor.
- 12.22 Contractor represents and warrants that it is now and shall remain registered for the purposes of the HST in accordance with Part IX of the *Excise Tax Act* (Canada), R.S.C. 1985, c. E-15, for the Term and that its HST Registration number. Contractor's current HST registration number as of the Effective Date is 86793 1701RT0001. Contractor shall promptly provide any change of HST registration number to Company by Notice.
- 12.23 Contractor shall provide, at all times when any HST is required to be collected, such documents and particulars relating to the supply as may be required by Company to substantiate a claim for any input tax credits as may be permitted pursuant to the *Excise Tax Act* (Canada), R.S.C. 1985, c. E-15, in respect of such HST. Without limiting the foregoing, Contractor shall include on all invoices issued pursuant to this **Article 12** all of the following particulars:
- (a) HST registration number of Contractor;
 - (b) the subtotal of all taxable supplies;
 - (c) the applicable HST rate(s) and the amount of HST charged on such taxable supplies; and
 - (d) a subtotal of any amounts charged for any "exempt" or "zero-rated" supplies as defined in Part IX of the *Excise Tax Act* (Canada), R.S.C. 1985, c. E-15.

- 12.24 Except for ground transportation provided by Company in accordance with Sections 10.5 and 10.6 of Exhibit 12 – Site Conditions, the cost of all travel by Contractor's Personnel for the Work is included in the Contract Price.

ARTICLE 13

TAXES

- 13.1 Contractor acknowledges that it shall be carrying on business in the Province of Newfoundland and Labrador (and elsewhere as applicable) during the performance of the Work and agrees to prepare and to file in a timely manner all Tax returns or declarations required by any applicable Authority or Applicable Laws having jurisdiction over this Agreement or any portion thereof. Contractor shall lawfully discharge its Tax obligations.
- 13.2 Subject to the obligation of Company to pay HST pursuant to **Article 12.21**, Contractor shall pay all Tax and shall use its best efforts to ensure payment by Subcontractors of all Tax which may be lawfully assessed upon Contractor or any Subcontractor by any Authority having jurisdiction over Contractor, Subcontractor or this Agreement.
- 13.3 Contractor represents that Contractor's residence status for the purposes of Canadian income tax legislation is as set forth in Exhibit 10 – Declaration of Residency. Contractor shall advise Company of the country where Contractor is a resident for income tax purposes and shall give thirty (30) days Notice to Company and obtain its prior written consent before making or allowing any change to its tax residency status. If Contractor obtains, and provides to Company a copy of, an income tax waiver from the Canada Revenue Agency (CRA) waiving a non-resident tax source deduction as may be required by Canadian income tax legislation, Company agrees not to withhold any such income tax deduction to the extent waived so long as the waiver remains in force. In any event, Contractor further agrees to be liable for all such Taxes and shall indemnify Company in respect thereof pursuant to **Article 21.7** of this Agreement.
- 13.4 If required by the Applicable Laws of any country having jurisdiction, Company shall have the right to withhold amounts, at the withholding rate specified by such Applicable Laws, from any compensation payable for the Work performed by Contractor, and any such amounts paid by Company to an Authority pursuant to such Applicable Laws shall, to the extent of such payment, be credited against and deducted from amounts otherwise owing to Contractor hereunder. Contractor shall note on each invoice whether any portion of the Work covered by such invoice was performed inside or outside of Canada for the purposes of Canadian income tax legislation or such other information requested or required by Company to properly assess withholding requirements. At the request of Contractor, Company shall deliver to Contractor properly documented evidence of all amounts so withheld which were paid to the proper Authority for the account of Contractor. If Company cannot provide such evidence in a timely manner that the amount withheld is required by Applicable Laws of any country having jurisdiction, Company shall pay the amount withheld to Contractor in order for Contractor to receive full payment as described herein.

CW 13

- 13.5 Contractor shall supply and arrange for all Contractor's Personnel to supply Company with all information relating to the activities under this Agreement that is necessary to enable Company or its Affiliates to comply with the lawful demand for information by any Authority. In the event Contractor does not supply or take all steps to arrange for any Subcontractor to supply such information and, as a result, an Authority imposes a Tax or fine upon Company or any of its Affiliates, Contractor shall forthwith pay or reimburse Company or any of its Affiliates for such Tax or fine.
- 13.6 Subject to the obligation of Company to pay HST pursuant to **Article 12.21**, the Contract Price shall include, and Contractor shall be responsible for, all Taxes which Contractor or Company is obliged pursuant to Applicable Laws to pay and does pay, for the purchase, sale, importation and exportation of the Work, or Contractor's Items, or personal property of any member of Contractor Group. Except as otherwise expressly provided herein, Contractor shall be the "importer of record" for the purpose of importing into Canada all Contractor's Items and the Work, or any part thereof and shall pay all Taxes payable in respect of such importations.
- 13.7 Contractor shall obtain for the benefit of Company all available exemptions from or recoveries of Taxes and shall employ all prudent mitigation strategies to minimize the amounts of Taxes required to be paid in accordance with Applicable Laws. In the event Contractor obtains any rebate, refund or recovery in respect of any such Taxes, it shall immediately be paid to Company to the extent that such amounts were paid by Company or reimbursed to Contractor by Company.
- 13.8 For greater certainty, Contractor and Company acknowledge that, notwithstanding any other provision of this Agreement, any amounts payable by Contractor to Company pursuant to this Agreement are exclusive of any HST payable pursuant to the *Excise Tax Act* (Canada), R.S.C. 1985, c. E-15 or any other Taxes exigible in respect of such amounts payable. If Company is required to collect from Contractor an amount of HST or other Taxes with respect to any such amounts payable pursuant to this Agreement, then Contractor shall pay the amount of such HST or other Taxes to Company. If the amounts payable by Contractor to Company pursuant to this Agreement are deemed by any Applicable Law to include an amount of HST or other Taxes, the amount otherwise payable pursuant to this Agreement shall be increased to the extent necessary so that the amount payable to Company, net of such HST or other Taxes, is equal to the amount that would have been payable to Company if such HST or other Taxes were not deemed to have been included in such amount.
- 13.9 Notwithstanding any other provision of this Agreement, Contractor Group shall not make any statement, representation, filing, return or settlement regarding Taxes on behalf of Company to an Authority without the prior written consent of Company.
- 13.10 For greater certainty, anti-dumping duties, countervailing duties and the like shall, in all cases, be borne by Contractor. Should any such duties become payable by Company, Contractor shall be liable for and defend, protect, release, indemnify and hold Company harmless from and against any such duties, together with any interest, penalties and reasonable costs related thereto, and Contractor shall immediately provide Company with

sufficient funds to pay such duties and other amounts in full. If Company has already paid such duties or other amounts, Contractor shall reimburse Company, on demand, the full amount of such duties and other amounts so paid.

ARTICLE 14
AUDIT AND RECORDS

- 14.1 Contractor shall maintain, in accordance with generally accepted accounting principles and practices satisfactory to Company, books, records, expense accounts and accounts pertaining to the provision of the Work, including Contractor's personnel records, correspondence, cost estimates, instructions, plans, schedules for the performance of the Work, drawings, receipts, vouchers, memoranda, tapes, data, models, data stored in computer libraries and such other documentation reasonably necessary for an accurate audit and verification of costs of that portion of the Work provided on a reimbursable basis provided under **Article 14.3** and any costs claimed under this Agreement and general contract compliance.
- 14.2 Contractor and Subcontractors shall preserve the documents and records, described in **Article 14.1** during the provision of the Work and for a period of not less than seven (7) years after expiration or any termination of this Agreement or for such longer period as may be required under Applicable Laws. Thereafter, Contractor shall give no less than sixty (60) days notice to Company of Contractor's or Subcontractors' intention to destroy any of said documents and Company shall have the option to take possession of such records.
- 14.3 Company, its Affiliates and/or its independent consultants shall, at their sole cost and expense and during regular business hours during the period described in **Article 14.2**, have access to and be authorized to examine and make copies of all documents, records set forth in **Article 14.1** and such other documents and records and, under Contractor's control and supervision, systems as may be related to this Agreement for an accurate audit and verification of field or other costs for the Work provided on a reimbursable basis and/or an accurate audit and verification of costs in respect of any claim by Contractor for additional compensation which Company may reasonably require. In addition and without limiting the foregoing:
- (a) For Work provided on a reimbursable basis as set out in Section 4.0 of Exhibit 2 - Compensation, such documents and records shall consist of time sheets for labour, equipment logs and invoices paid for materials.
 - (b) For Work provided on a lump sum basis in accordance with Exhibit 2 - Compensation, such documents and records shall allow Company to verify Contractor's invoices to Company to actual quantities delivered and services provided.
 - (c) Company shall be authorized to interview Contractor's Personnel as may be necessary to understand Contractor's accounting method and systems.

CM (S)

- 14.4 Contractor shall insert in all Subcontracts an audit clause that (1) mandates Subcontractors to maintain in accordance with **Article 14.2** and in accordance with generally accepted accounting principles and practices satisfactory to Company, books, records, expense accounts and accounts pertaining to the provision of the Work, including each Subcontractor's personnel records, correspondence, cost estimates, instructions, plans, schedules for the performance of the Work, drawings, receipts, vouchers, memoranda, tapes, data, models, data stored in computer libraries and such other documentation reasonably necessary for an accurate audit and verification of costs of each Subcontractor's Work ("Subcontractor Data") and that (2) allows Company to fully and completely audit such Subcontractor Data during regular business hours at each Subcontractor's location.
- 14.5 Notification of any claims made or discrepancies disclosed by an audit pursuant to this **Article 14** shall be made in writing to Contractor. Contractor and Company shall diligently attempt to resolve and agree upon such audit claims or discrepancies. Upon an audit claim or discrepancy being resolved and agreed upon, Contractor shall forthwith reimburse Company for any monies due Company as a result of such agreement or determination, or Company may set off any amounts owed to it by Contractor for audit claim or discrepancies against any payments owed to Contractor by Company.
- 14.6 Contractor shall not be reimbursed for any costs it may incur as a result of Company conducting an audit pursuant to this **Article 14**. All such audits shall be conducted during normal business hours of Contractor and Company shall give reasonable notice to Contractor of the audit and shall specify the matters which are the subject of the audit.

ARTICLE 15

HEALTH, SAFETY AND ENVIRONMENTAL PROTECTION

- 15.1 Contractor shall be responsible for ensuring the health and safety of all of Contractor's Personnel who are engaged in the performance of the Work and also be responsible for environmental management. Without limiting the foregoing, Contractor shall:
- (a) ensure that all Contractor's Items and equipment within Contractor's control are maintained in safe, sound and proper condition and capable of performing the function for which each is intended and meets all industry standards and Applicable Laws;
 - (b) cease all activities in the area of any identified health, safety or environmental problem until such problem is resolved;
 - (c) immediately report to Engineer all health, safety and environmental problems and hazards;
 - (d) provide sufficient supervision, instruction and resources to ensure that Contractor Group's Work execution and Worksites comply with all Applicable Laws and good environmental practices;

- (e) at its own expense and in accordance with Applicable Laws, supply and maintain Contractor's Personnel with personal protective equipment which shall be worn and used on all occasions as indicated by notices, instructions, good practice or as required by risk assessment;
 - (f) conduct such drills and tests of Contractor's Items, equipment, Personnel and procedures to ensure that they are available, trained and in place, respectively, for immediate and effective action in the event of emergency;
 - (g) comply with Company's emergency response requirements as described in Exhibit 11 – Company Supplied Documents;
 - (h) cooperate fully and comply with any directions given by Authorities, including the police, safety and environment regulatory officials and fire authorities; and
 - (i) report to Engineer monthly training compliance and safety statistics as identified by Engineer.
- 15.2 Contractor shall develop and submit to Engineer for Acceptance a detailed health and safety plan for the Work which demonstrates that, in connection with Contractor's performance of the Work, Contractor has identified risks pertaining to the health and safety of Contractor's Personnel, and that effective controls are implemented to prevent accidents and health and safety threats. Contractor's plan shall:
- (a) satisfy the requirements of Exhibit 5 – Health and Safety Requirements;
 - (b) be structured in accordance with various elements within the Work such as fabrication, transportation, installation and commissioning;
 - (c) include measurable, achievable targets for health and safety performance, including: lost time frequency; total recordable frequency; injury severity data; and first aid cases;
 - (d) comply with Company's safety policies and procedures set out or described in Exhibit 11 – Company Supplied Documents; and
 - (e) comply with Applicable Laws and Exhibit 3 – Coordination Procedures.
- 15.3 Contractor shall develop and submit to Engineer for Acceptance a detailed environmental protection plan for the Work which demonstrates that, in connection with Contractor's performance of the Work, Contractor has identified risks pertaining to the environment and that effective controls are implemented to prevent threats and damage to the environment. Contractor's plan shall:
- (a) satisfy the requirements of Exhibit 6 – Environmental and Regulatory Compliance Requirements;

- (b) be structured in accordance with various elements within the Work such as fabrication, transportation, installation and commissioning;
 - (c) include measurable, achievable targets for performance, including performance criteria for environmental emissions and waste, and hazardous materials; and
 - (d) include an environmental management plan that satisfies the Technical Requirements and Applicable Laws.
- 15.4 Engineer, on behalf of Company, shall Accept Contractor's plans required by **Article 15.2** and **Article 15.3** provided the plans comply with this Agreement, Applicable Laws and any ordinances, orders and decrees of any Authority having jurisdiction over health, safety and environmental compliance of the Work or the Worksite and any other requirements of Company.
- 15.5 Contractor shall comply with all such standards and the provisions of the plans required by **Article 15.2** and **Article 15.3**, along with any changes thereto as Contractor may be notified from time to time by Engineer, and all Applicable Laws relating to occupational health, safety and environmental protection. Contractor shall ensure that all Contractor's Personnel involved in the performance of the Work comply with the provisions of Contractor's health, safety and environmental plans and all Applicable Laws relating to occupational health, safety, and environmental protection. Contractor shall appoint a safety officer who shall assist Contractor in safety matters relating to Contractor's Personnel.
- 15.6 Contractor shall promptly investigate and report to Engineer and Authorities having jurisdiction any near miss incidents or any accidents resulting in injury, death or illness to any of Contractor's Personnel engaged in the performance of the Work, any criminal acts, any damage to property or any adverse impact on the environment and any release of substances hazardous to the environment.
- 15.7 Contractor shall submit to Engineer for Acceptance Contractor's drug and alcohol policy which shall be in compliance with Applicable Laws. Contractor shall ensure that Contractor's Personnel who are engaged in the performance of the Work, are familiar with, and comply with, Contractor's drug and alcohol policy.
- 15.8 Company shall have the right to suspend performance of the Work for as long as necessary to prevent or stop any violation of this **Article 15**. During such period of suspension, Contractor shall not demobilize from the Worksite. No compensation shall be payable to Contractor by Company and Contractor shall not be entitled to compensation for any costs it incurs as a result of the suspension.
- 15.9 Company reserves the right to audit and inspect the Worksites to verify compliance with this Agreement, which audits and inspections may be performed by Engineer or such other third party as Company may direct.

- 15.10 Notwithstanding **Article 40.6**, in the event Company declares an emergency with respect to any matter affecting health, safety, the environment or potential damage to or loss of property, Contractor shall comply with verbal instructions issued by Company or Engineer with respect to such emergency. Company or Engineer shall confirm such instructions in writing at the first reasonable opportunity.
- 15.11 Contractor shall exercise all diligence to conduct operations under this Agreement in a manner that will prevent any adverse impact to the environment including seepage, discharge or escape of pollutants, hazardous substances, debris and damage to or destruction of habitat. Contractor shall be responsible for all risks and costs to:
- (a) handle, dispose and/or cleanup those hazardous substances, if any, identified in Exhibit 11 – Company Supplied Documents in respect of the Site;
 - (b) handle, dispose and/or cleanup those hazardous substances disposed of or discharged on the Site by Contractor Group in connection with or incidental to the performance of or default in any of Contractor's obligations under this Agreement;
 - (c) remediate any environmental damage arising from Contractor's performance of the Work including the removal and cleanup of any pollution, debris and hazardous substances;
 - (d) take such measures as are necessary in the circumstances to prevent or mitigate any environmental damage resulting from any pollution, seepage or discharge or escape of pollutants, debris and hazardous substances; and
 - (e) take such measures that Contractor or Company is under instructions to take from any Authority having jurisdiction to so instruct.
- 15.12 Company shall provide Contractor with written disclosure of all known hazardous substances, contaminants and conditions existing at the Site prior to Contractor's mobilization to Site. Contractor shall be solely responsible for any loss, damage or injury caused by Contractor Group's negligent acts or omissions in the handling, storage or use of any hazardous substances or contaminants Contractor brings to the Site.
- 15.13 If Contractor:
- (a) encounters hazardous substances at the Site; or
 - (b) has reasonable grounds to believe that hazardous substances are present in or on or under any of the Site which are not disclosed in the Exhibit 11 – Company Supplied Documents or are present in or on or under or migrating from any other sites,
- then Contractor shall:
- (c) take all reasonable steps to secure such Site, including stopping the Work, to ensure that no individual suffers an injury, sickness or death and that no property is

damaged or destroyed as a result of exposure to the presence of the hazardous substances;

- (d) immediately report the circumstances to Engineer in writing; and
 - (e) report the circumstances to Authorities as required by Applicable Laws.
- 15.14 If hazardous substances are encountered during the Work, Contractor shall employ best practices and methods so as to minimize the costs of any work which may be required to handle and dispose of the hazardous substances and any environmental cleanup and to meet the requirements of Applicable Laws or Authorities.

ARTICLE 16 ACCESS AND QUALITY

- 16.1 Company shall, in accordance with this **Article 16**, have the right to send Company Group Personnel to the Worksites to monitor the progress of the Work, including to any manufacturing facility operated by any member of Contractor's Group where any materials, components, equipment or product is being manufactured, fabricated or assembled for the Work. At all times during the Term, Contractor Group Personnel shall provide all requisite assistance to Company Group Personnel.
- 16.2 Company Group Personnel shall, at all times during the Term, be granted unrestricted right of access to inspect the Work and monitor all the Work in progress or Contractor Items utilized in connection with the creation or construction of the Work for the purpose of determining that the Work is being created or constructed in accordance with this Agreement.
- 16.3 Contractor, with the prior Acceptance of Engineer, shall permit representatives of Authorities to enter onto and inspect a Worksite, with reasonable advance notice and escorted access to the Work. Contractor may provide, and each such Person shall accept, reasonable safety and security measures implemented by Contractor. Contractor shall also promptly provide information reasonably requested by Company, Authorities or any of their representatives.
- 16.4 Contractor shall include appropriate provisions in all its Subcontracts and purchase orders to ensure the proper enforceability of the provisions of this **Article 16**.
- 16.5 No inspection, representation, responsibility or action of any Company Group Personnel hereunder shall relieve Contractor Group of any of its obligations or liabilities under this Agreement or operate as a waiver or release of the same.
- 16.6 Commencing on the Effective Date and throughout the Term, Contractor shall maintain a Quality Plan in respect of every aspect of the Work in accordance with Exhibit 7 – Quality Requirements.
- 16.7 Notwithstanding any Company, Engineer, Authority or other third party inspection, testing or witnessing, Contractor shall be responsible for quality control, quality

surveillance/inspection, testing and quality assurance of the Work to verify and be able to demonstrate compliance with the requirements of this Agreement. Contractor shall carry out its quality management activities in accordance with Exhibit 7 – Quality Requirements.

- 16.8 Contractor shall conduct tests on the Work in accordance and in compliance with the provisions of Exhibit 1 - Scope of Work, Quality Plan, Contractor's quality management system, Company Supplied Data and Applicable Laws. Company and Engineer shall have the right at all times to request and witness any such test on the Work contemplated by this **Article 16.8**.
- 16.9 Contractor shall rectify, at Contractor's sole cost, any failure to comply with the requirements of Exhibit 1 – Scope of Work and Applicable Laws that are identified during testing, commissioning and inspection of the Work.
- 16.10 Upon completion of work necessary to satisfy **Article 16.9** and at the reasonable request of Company or Engineer, Contractor shall re-test the Work at Contractor's sole cost in order to confirm that the requirements of this Agreement are met. Company or Engineer may further require Contractor to re-test, at Contractor's cost, all the Work similar to that Work which originally failed any tests or inspection.
- 16.11 Company and Engineer shall have the right to reject any Work, workmanship, equipment and documentation which do not conform to this Agreement. Contractor shall, at its sole expense, promptly remove any items so rejected and shall immediately repair or replace the same and shall carry out such further inspections or tests on other parts of the Work, as Company or Engineer may require, to ensure that there are no similar parts of the Work that fail to conform with this Agreement.

ARTICLE 17 WARRANTY

- 17.1 Except for Work which is subject to the warranty in **Article 17.2**, Contractor agrees that, for a period of three (3) years following the date of Final Completion shown on the Final Completion Certificate ("**General Warranty Period**"), it shall at its own expense promptly:
- (a) correct any Work which is not in accordance with this Agreement;
 - (b) rectify and make good or cause to be rectified and made good all Defects in the Work which are detected and discovered; and
 - (c) have available at the Worksites or at a proximate location to the Worksites all necessary equipment, spare parts and labour to comply with the foregoing obligations.
- 17.2 Contractor shall provide to Company a products and workmanship warranty on any products, materials, and equipment incorporated into the Work to remain in effect forty-two (42) months from the completion of Commissioning Static Checks for each Site ("**Products Warranty Period**"). Such warranties shall provide for replacement of the

component parts of such products or equipment or replacement of materials and shall cover incidental direct costs incurred by Company arising out of Defects in or failure of the warranted product, materials or equipment.

17.3 Contractor shall perform all tests and take all measurements specified in the Technical Specifications to be made and taken during the Warranty Period.

17.4 Nothing in this Article shall be construed so as to restrict, limit, waive or otherwise diminish Contractor's warranty of adequacy of the Work, and Contractor guarantees that:

- (a) all material will be new and free from Defects;
- (b) all Work will be of a good and workmanlike quality;
- (c) to the extent that Contractor is responsible for design under this Agreement, the Work applicable to such design shall be fit for purpose, as more specifically set forth in the Technical Specifications which form part of this Agreement and where no purpose is specified, fit for its intended use where such use is consistent with this Agreement; and
- (d) all of the Work and Warranty Work shall be free from Defects, including latent Defects.

17.5 For the avoidance of doubt, the provisions of this **Article 17** shall also extend to all portions of the Work and Warranty Work carried out by Subcontractors. Contractor shall cause to be extended to Company any applicable representations, warranties, guarantees and obligations with respect to design, engineering, materials, workmanship, equipment, tools and supplies furnished by its Subcontractors. All representations, warranties, guarantees and obligations of Subcontractors shall be:

- (a) so written as to survive all Company and Contractor inspections, tests and Approvals; and
- (b) extended to and be enforceable by Company, its successors and assigns.

If applicable, Contractor shall assign to Company all of Contractor's rights and interest in all extended warranties for periods exceeding the relevant Warranty Period which were received by Contractor from any of its Subcontractors or vendors.

17.6 If, within the relevant Warranty Period, any of the Work is faulty, defective or deficient, Contractor, on receipt of Notice from Company, shall commence and diligently perform all services and work and supply all materials and equipment required to remedy such Defect to the Standard of a Prudent Contractor and in the manner and at the times that Company directs so that it conforms to the requirements in the Agreement ("**Warranty Work**").

17.7 During the period that Warranty Work is being performed, Contractor shall continue to cooperate with Company's Other Contractors and Company Personnel in accordance with **Article 3.8**.

- 17.8 If Contractor does not fulfill its requirements under this **Article 17** or fails to commence appropriate steps to correct any Defects, within five (5) Business Days of Notice to Contractor by Company, Company may have the Work which is the subject of the Notice from Company corrected by a third party at the sole cost of Contractor. Such recourse shall in no way relieve Contractor from its Warranty obligations.
- 17.9 Contractor shall not substitute any materials in performing Warranty Work without the prior Approval of Company.
- 17.10 All work required to be performed in accordance with the terms of this **Article 17** shall be performed at the expense of Contractor and shall not give rise to any right of Contractor to remuneration.
- 17.11 This Warranty is subject to the following additional terms and conditions:
- (a) Notwithstanding anything contained elsewhere in the Agreement, this Warranty shall apply to items manufactured and/or installed by Contractor, regardless of whether components or raw materials are supplied by others.
 - (b) Subject to **Article 17.9** Contractor shall have the option of repairing or replacing any Defects in the Work provided such repair or replacement meets all the requirements and specifications outlined in this Agreement.
 - (c) This Warranty does not apply to damage to the Work caused by ordinary wear and tear, abuse by Company Group, alteration or application of products, materials or equipment for purposes not contemplated by the Technical Requirements.
- 17.12 Unless otherwise instructed by Company, Contractor shall remove from the Site and dispose of any parts or equipment that have been replaced, and Contractor shall be solely responsible for all costs associated with such removal and disposal. Company shall have the option, to be exercised at its discretion, to retain ownership of removed and replaced parts, and upon exercising such option Company may use or dispose of the parts as Company shall deem fit.
- 17.13 Company, itself or through Engineer, shall notify Contractor in writing with reasonable promptness after discovery of any Defect in respect of which Contractor shall be obliged pursuant to this **Article 17** to perform Warranty Work. Notice of any Defect discovered during the relevant Warranty Period must be given to Contractor no more than sixty (60) days after the end of the relevant Warranty Period.
- 17.14 Company, at its sole discretion, may retain independent third parties to inspect, test, review and/or observe the Work for compliance with this Agreement. Contractor, upon reasonable notice, shall provide such independent third parties access to the Work and to any facility in which any equipment or products are being manufactured for installation as part of the Work in order to permit the independent third parties to perform their duties.

- 17.15 Notwithstanding anything to the contrary in this Agreement, this Warranty is exclusive of any other warranty, express, implied, statutory or otherwise.

ARTICLE 18
CONTRACTOR INSURANCE

- 18.1 Contractor will maintain in place for the duration of the Work insurance policies in accordance with the requirements of **Article 18.3** from a financially sound insurance company. If Contractor fails to procure such policies or fails to provide certificates of insurance confirming such coverage within the time specified in **Article 18.2**, or if any insurance is cancelled and not immediately replaced with comparable insurance, then Company may at any time by Notice to Contractor terminate the Agreement.
- 18.2 Prior to commencing work at the Site or within ten (10) Business Days following the Execution Date, whichever is earlier, Contractor shall submit to Company certificates of insurance or such other documentation as Company may require evidencing the insurance required by **Article 18.3**. Failure of Company to advise Contractor of any insurance deficiencies shall not relieve Contractor of any liability related to its obligations under this **Article 18**. If required by court order, Contractor shall provide copies of its insurance policies required to be maintained as set forth in **Article 18.3**.
- 18.3 Contractor shall at all times while conducting the Work carry the following insurance coverages with limits specified below, covering property and liability outside the scope of the insurance supplied by Company pursuant to **Article 20**. The cost of insurance procured by Contractor, including deductibles or self-insurance or policy retentions, shall be for the sole account of Contractor:
- (a) Workers' Compensation
- Workers' Compensation coverage for all of its Personnel engaged in the Work in accordance with the Applicable Laws of the jurisdictions in which the Work is performed. Contractor shall further ensure that non-residents are fully covered by Workers' Compensation insurance and Employer's Liability insurance with such coverage including an extraterritorial benefits extension providing benefits equal to those provided by the jurisdiction in which the Work is performed.
- (b) Employer's Liability
- Employer's Liability insurance, with limits as required by Applicable Laws, but not less than Canadian five million dollars (\$5,000,000.00) covering each employee engaged in the Work.
- (c) Commercial General Liability
- Commercial General Liability insurance written on a claims made basis with limits of Canadian five million dollars (\$5,000,000.00) per claim for bodily injury and/or property damage including blanket contractual liability, sudden and accidental

pollution liability for risks assumed by Contractor, broad form property damage, personal injury, contractor's protective liability, products and completed operations for a period of not less than twenty-four (24) months, contingent employer's liability and incidental medical malpractice.

(d) Automobile Liability Insurance

When not otherwise covered by Contractor's Commercial General Liability policy, Contractor shall obtain and maintain in effect automobile liability insurance covering all licensed vehicles whether owned, non-owned, leased or hired. Such insurance will provide a combined single limit of liability for bodily injury and property damage of Canadian five million dollars (\$5,000,000.00) per occurrence.

(e) Owned and Non-owned Aircraft

To the extent that aircraft are used in the performance of the Work, owned and non-owned aircraft liability insurance with a combined single limit of Canadian ten million dollars (\$10,000,000.00).

(f) Property

"All risks" property insurance covering all real and personal property which Contractor owns, leases or has in its care, custody or control including all machinery and equipment to be used for the Work but not forming part of the Work.

(g) Property in Transit

If required by Exhibit 2 – Compensation, Contractor shall provide property insurance coverage for the full value of equipment, goods, products and materials to be incorporated into the Work with such coverage to apply during transportation from Contractor's plant, factory or distribution centre to the location for Delivery, with a maximum deductible of Canadian twenty-five thousand dollars (\$25,000.00).

(h) Subcontractors

Contractor is required to ensure that each of the Subcontractors provides insurance similar to the foregoing, as well as insurance which:

- (i) is required by Applicable Laws; or
- (ii) is reasonably appropriate in respect of the Work to be performed.

When requested to do so by Company, Contractor shall provide or cause to be provided to Company certificates of insurance confirming such Subcontractor insurance policies or such other evidence of insurance acceptable in form and content acceptable to Company, acting reasonably. Contractor Group shall not perform Work during any period when any required policy of insurance is not in effect.



(i) Other

In addition to the insurance coverage specified in this **Article 18**, Contractor shall carry such other insurance policies and in such amounts:

- (i) as may be required in order to comply with Applicable Laws; and
- (ii) as directed by Company with regard to liabilities assumed under the Agreement or in respect of specific activities performed for the Work.

- 18.4 All insurance policies required by this **Article 18** shall be endorsed to waive insurer's rights of subrogation against Company Group and their Personnel, stockholders, successors, assigns and Affiliates. All liability policies required above shall be endorsed to include Company Group and their Personnel, successors, assigns and Affiliates as additional insureds and shall contain cross liability and severability of interest provisions. Except with respect to the insurance coverage to be procured by Company pursuant to **Article 20**, all of Contractor's insurance policies shall operate as primary to any similar insurance policies maintained by Company and their Personnel, successors, assigns and Affiliates.
- 18.5 Contractor shall provide Company thirty (30) days prior written notice of cancellation or any material change in coverage.
- 18.6 Contractor shall give Company prompt notification of any claim involving the Work with respect to any of the insurance policies referred to in **Article 18.3**, accompanied by full details of the incident giving rise to such claim. Contractor agrees to do all acts, matters and things as may be reasonably necessary or required to expedite the adjustment of any loss or damage covered by insurance so as to expedite the release and disposition of such insurance in the manner and for the purposes contemplated in this Agreement. If requested by Company, Contractor shall advise Company in writing of the final resolution of any such insurance claims.
- 18.7 If requested by the other Party, a Party shall advise the other Party in writing of the final resolution of any such insurance claims.
- 18.8 Company may reduce or waive all or any portion of these insurance requirements under circumstances where the Work to be performed does not require equivalent insurance coverage. Such reduction or waiver shall be obtained in writing and shall in no way reduce or waive Contractor's responsibility or liability for the Work.
- 18.9 Nothing in this **Article 18** shall or is intended to limit the liability of Contractor under any other provision of this Agreement. The provisions of this **Article 18** will not be interpreted as relieving Contractor of any of its obligations under this Agreement. Contractor may purchase, at its own expense, any additional insurance it deems necessary.

ARTICLE 19
WORKERS COMPENSATION

- 19.1 Prior to the performance of the Work hereunder, Contractor shall provide Company with Contractor's Workers' Compensation number and a letter of good standing in accordance with the Applicable Laws of the jurisdiction in which the Work is performed.
- 19.2 Contractor shall at all times pay, or cause to be paid, any assessment or contribution required to be paid pursuant to Applicable Laws relating to Workers' Compensation in respect of Contractor's Personnel and, upon failure to do so, authorizes Company, in addition to any other rights of Company under this Agreement, to withhold and remit on behalf of Contractor an amount equal to such assessment or contribution, including any interest and penalty assessed thereon.
- 19.3 Upon completion of Subcontract work, each Subcontractor shall deliver to Engineer a clearance certificate from the Workplace Health, Safety and Compensation Commission of the Province of Newfoundland and Labrador.
- 19.4 Upon completion of the Work, Contractor and all Subcontractors which have not previously provided evidence of compliance with **Article 19.3** above shall deliver to Engineer a clearance certificate from the Workplace, Health, Safety and Compensation Commission of the Province of Newfoundland and Labrador.

ARTICLE 20
PROJECT INSURANCE

- 20.1 The following insurance coverages shall be procured by Company. The policies listed below will cover Company Group, Contractor and subcontractors of every tier (but not including vendors and suppliers except to the extent a vendor or supplier performs operations at the Site) as their interests and/or liabilities may appear:
- (a) Construction All Risk (CAR) insurance, including design defect coverage to LEG2/96 or better, subject to a limit of not less than the total Contract Price, attaching on or in place and in effect as of the Effective Date.
 - (b) Wrap-up Liability insurance, with Company as the named insured and its Personnel, stockholders, successors, assigns and Affiliates as additional insureds, written on an occurrence basis with limits not less than Canadian fifty million dollars (\$50,000,000.00) per occurrence for bodily injury and/or property damage including contractual liability, broad form property damage, personal injury, contractor's protective liability, completed operations for a period of not less than twenty-four (24) months, contingent employer's liability, incidental medical malpractice, cross liability and severability of interest provisions.
 - (c) Pollution Liability insurance, with Company as the named insured and its Personnel, stockholders, successors, assigns and Affiliates as additional insureds, written with



limits not less than Canadian ten million dollars (\$10,000,000.00) per occurrence and in the aggregate.

20.2 Insurance policies required by this **Article 20** shall:

- (a) be endorsed to waive insurer's rights of subrogation against Contractor and subcontractors of every tier (but not including vendors and suppliers except to the extent a vendor or supplier performs operations at the Site) and their stockholders, successors, assigns and Affiliates; and
- (b) include Contractor and subcontractors of every tier (but not including vendors and suppliers except to the extent a vendor or supplier performs operations at the Site) as additional insureds.

20.3 Contractor shall be responsible for deductibles under the Construction All Risk (CAR) policy of Canadian two million dollars (\$2,000,000.00), under the Wrap-up Liability policy of Canadian one hundred thousand dollars (\$100,000.00), under the pollution liability policy of Canadian two hundred fifty thousand dollars (\$250,000.00), up to a maximum of five percent (5%) of the Contract Price for any one claim, provided that:

- (a) Contractor shall not be responsible for deductibles arising from claims for damage or loss caused by earth quake;
- (b) Contractor shall not be responsible for deductibles arising from claims for damage or loss caused by flood except Contractor shall be responsible for deductibles where the flood was caused or exacerbated by the negligence of Contractor Group; and
- (c) to the extent a claim for damage or loss was caused by the negligence of Company, Company shall be responsible for that portion of the deductible which represents the proportion of fault attributable to Company.

20.4 The insurance policies required by **Article 20.1** shall be in place and shall be maintained until a Final Completion Certificate has been issued, with any completed operations coverage to continue after the Final Completion Certificate has been issued as set out in the policy.

20.5 Prior to Contractor commencing work at the Site, Company shall submit to Contractor certificates of insurance or such other documentation as Contractor may reasonably require evidencing the insurance required by this **Article 20**. Failure of Contractor to advise Company of any insurance deficiencies shall not relieve Company of any liability related to its obligations under this **Article 20**. If required by court order, the Company shall provide copies of its insurance policies to Contractor.

ARTICLE 21 INDEMNIFICATION

21.1 The Parties hereby agree and acknowledge that if a provision in this **Article 21** conflicts with any other provision in this Agreement, the provision in this **Article 21** shall prevail.

- 21.2 For the purposes of this Agreement, any liability assumed or indemnity given by Contractor for the benefit of Company shall be deemed to be given by Contractor for the benefit of Company, its successors and assigns, Affiliates and Personnel.
- 21.3 Except as otherwise specifically stated in this Agreement, Company shall defend, indemnify, keep indemnified and shall hold harmless Contractor and its Personnel and Affiliates, and each of their successors and assigns, from and against any and all Claims by a third party which such indemnified parties may at any time sustain or incur by reason of or in consequence of a breach or non-performance by Company or any agent, employee or licensee for whom Company is in law responsible arising from the performance of any of the obligations of Company under this Agreement.
- 21.4 Contractor shall defend, indemnify, keep indemnified and shall hold harmless Company and its Personnel and Affiliates, and each of their successors and assigns, from and against any and all third party Claims which such indemnified parties may at any time sustain, pay or incur by reason of or in consequence of any one or more of the following:
- (a) any negligent act or omission or wilful misconduct of Contractor Group, or any licensee, invitee or Person acting on behalf of any of them in connection with or incidental to the performance of or default in any of Contractor's obligations under this Agreement;
 - (b) any knowing or wilful inaccuracy in or gross negligence in the making of any representation or warranty made by Contractor Group, the guarantors or any other Person that delivers to Company any document, or security instrument containing any such representation or warranty pursuant to this Agreement;
 - (c) any breach or non-performance by Contractor Group, or any licensee or Person acting on behalf of Contractor of any of the material obligations of Contractor in respect of the performance of the Work;
 - (d) any Claims in contract, tort, under any statute or otherwise at law or in equity with respect to any bodily injury (including death), damage to or loss of tangible property arising out of a breach of contract or negligent actions or omissions or wilful misconduct of Contractor Group, or any licensee, invitee or Person acting on behalf of any of them in connection with the Work;
 - (e) any reasonable and necessary action taken by Company to mitigate or cure a breach or non-performance by Contractor Group of any covenant or inaccuracy in any representation or warranty pursuant to the Agreement;
 - (f) in respect of loss or damage to the property of Contractor Group however caused except to the extent the Claim was caused by the negligence or wilful act or omission by Company;

- (g) in respect of personal injury or death of Contractor's Personnel however caused and regardless of whether or not the Claim was caused by Contractor's negligence, breach of agreement or breach of duty;
- (h) any representation or holding out by Contractor that it is an agent of Company;
- (i) against all fines and penalties, as well as costs, expenses, rates and charges of Contractor Group, resulting from the failure of Contractor Group to comply with **Article 3.5**;
- (j) for any liabilities associated with the retention of such other contractors by Company as a result of Contractor's failure to satisfy the provisions of **Article 5.1**;
- (k) any failure by Contractor to comply with its obligations under **Article 9.1** and **Article 9.2**.

21.5 Contractor shall include in all of its Subcontracts, a provision stating that Subcontractors shall defend, indemnify and hold Company harmless from and against all Claims for the death of or bodily injury to Subcontractors and their respective Personnel, and for damage to or loss of the property of Subcontractors or their respective Personnel except to the extent the Claim was caused by the negligence or wilful act or omission by Company.

21.6 Without limiting the generality of **Article 21.4**, Contractor shall be liable for and defend, indemnify and hold Company harmless from and against all Claims (including any fine, penalty or demand of any Authority having jurisdiction) which may be brought against or suffered by Company or which Company may sustain, pay or incur, arising out of any failure by Contractor to comply with its obligations with respect to the environment under **Article 15**.

21.7 Without limiting the generality of **Article 21.4**, and subject to the obligation of Company to pay HST pursuant to **Article 12.21**, Contractor shall be liable for and defend, indemnify and hold Company harmless from and against:

- (a) any and all Taxes imposed by any Authority on any of Contractor Group in respect of this Agreement, and any and all Claims including payment of Taxes which may be brought against or suffered by Company or which Company may sustain, pay or incur in conjunction with the foregoing as a result of the failure by Contractor to pay any and all Taxes imposed as stated herein; and
- (b) any and all Taxes imposed by any Authority in respect of the Work, or Contractor's Items, or any other items used by Contractor Group in the performance of the Work, or in respect of any services performed by Contractor Group in respect of this Agreement, and any and all Claims (including Taxes) which may be brought against or suffered by Company or which Company may sustain, pay or incur in conjunction with the foregoing as a result of the failure by any member of Contractor Group to pay any and all Taxes imposed as stated herein.

- 21.8 Except where expressly stated otherwise, the liability and indemnities specified in this **Article 21** shall apply:
- (a) without limit and without regard to the cause of any Claim, including the negligence or fault (whether sole, concurrent, gross (except when gross negligence or wilful misconduct is expressly provided as an exception to a specific provision hereof), active or passive negligence) or otherwise or wilful act or omission and including strict liability, breach of contract, breach of duty (statutory or otherwise) and including any pre-existing conditions, of a Party or any other Person (including the Party or Person seeking indemnity);
 - (b) whether or not any Claim is asserted to have arisen by virtue of tort, contract, quasi-contract, statutory duty, or any Applicable Laws;
 - (c) whether or not any Claim is made or enjoyed by the Person sustaining the injury or loss or by the dependents, heirs, claimants, executors, administrators, successors, survivors or assigns of such Person.
- 21.9 The indemnities given in this **Article 21** shall apply in respect of the full liability of the indemnified Party for Claims, notwithstanding that the indemnified Party may be entitled to contribution thereto from any other Person and notwithstanding such liability may relate to the negligence of a third party, provided that in such case the indemnifying Party shall be fully subrogated to the rights of the indemnified Party against such third party.
- 21.10 If a Claim by a third party is asserted in circumstances which gives or may give rise to indemnification under this Article, the Party against whom the Claim is asserted (the "non-indemnifying Party") shall forthwith give Notice thereof to the other Party (the "indemnifying Party") and, at the discretion of the non-indemnifying Party, the indemnifying Party shall undertake the defence of such Claim. The Parties shall consult and cooperate in respect of such Claim and in determining whether such Claim and any legal proceedings relating thereto should be resisted, compromised or settled. Each Party shall make available to the other all information in its possession or to which it has access, and which it is legally entitled to disclose, which is relevant to the particular Claim. The indemnifying Party shall provide the non-indemnifying Party with reasonable information as to the progress of such Claim on a regular basis. No such Claim shall be settled or compromised without the written consent of the indemnifying Party. Notwithstanding the foregoing, if the indemnifying Party, within a reasonable time after Notice of any such Claim is given to it by the non-indemnifying Party, fails to defend such Claim, the non-indemnifying Party shall have the right to undertake the defence and compromise or settle such Claim on behalf of and for the account of the indemnifying Party.
- 21.11 During the period commencing at the time that Contractor has possession of, or control over, Work in which title has vested in Company pursuant to the provisions of **Article 23.2** or items free issued to Contractor, and until such time as Company takes care, custody and control of those items, Contractor shall:



- (a) be liable to Company for all Claims which Company may suffer, sustain, pay or incur directly or indirectly on account of damage to or loss of such Work or items or any other items free issued to Contractor; and
 - (b) defend, protect, release, indemnify and hold Company harmless from and against all Claims which may be brought against or suffered by Company or which Company may sustain, pay or incur directly or indirectly on account of damage to or loss of such Work or items or any other items free issued to Contractor.
- 21.12 Contractor shall be responsible for, and shall defend, indemnify and hold Company Group harmless from and against all Claims of any nature incurred by Company Group:
- (a) in connection with the payment of Contractor's Personnel, including all compensation, medical costs, Taxes (including all Canadian and foreign payroll and withholding Taxes and remittances), unemployment insurance premiums, Canada pension plan contributions and other benefits of whatever nature or as may be applicable in any jurisdiction (including any jurisdiction where the Work is performed or where the Personnel reside or are employed);
 - (b) against any damage to Company Group property arising from any negligent act or omission by Contractor's Personnel.
- 21.13 Subject to any liquidated damages payable pursuant to this Agreement, no Party shall have any responsibility and shall not be liable under this Agreement to another Party for any indirect, incidental or consequential damages or losses, including and whether or not the following are determined in any proceeding to be direct damages: any Claim in respect of loss of profit, loss of revenue, business interruption, loss of use, loss of opportunity, loss of goodwill, cost of capital, cost of replacement power, loss of benefit foreseen by the Lower Churchill Construction Benefits Strategy document, whether foreseeable or not, resulting from, arising out of or in connection with the performance or non-performance of any obligation pursuant to this Agreement howsoever caused.
- 21.14 Notwithstanding anything to the contrary in this Agreement, the maximum aggregate liability of Contractor toward Company for all Claims arising out of or connected with the Work or performance or breach of this Agreement, including **Article 21**, shall be limited to the sum of one hundred percent (100%) of the Contract Price, provided however that such limitation shall not apply in cases of:
- (i) Claims for personal injury (including death) suffered by third parties;
 - (ii) Claims for property damage or loss suffered by third parties;
 - (iii) Contractor's wilful, deliberate or intentional material and fundamental breach of this Agreement;

- (iv) Taxes, fines and/or penalties (including in respect of breaches of environmental laws) imposed by any Authority for which Contractor is liable under this Agreement; and
- (v) Claims for infringement of patents and/or other intellectual property rights.

21.15 The foregoing shall constitute the sole remedies and liabilities of the Parties for Claims under this **Article 21**.

ARTICLE 22 SITE AND TRANSPORT ROUTE CONDITIONS

- 22.1 Subject to **Articles 22.9 to 22.14**, Contractor shall inform itself fully as to the risks and contingencies and all other data, matters and things, local or otherwise, respecting the Site, transportation routes and any other aspects of the Work necessary to perform Contractor's obligations under this Agreement. Contractor shall be deemed to have been satisfied as to the suitability and availability of such Site, and other aspects of the Work, with the exception of the transportation route between Happy Valley Goose Bay and Cartwright Labrador.
- 22.2 Contractor acknowledges and agrees that utilities and service connections may not be located as exactly shown on drawings provided by Company or Engineer. Contractor shall satisfy itself fully as to the exact location of all utilities and service connections and shall, at no additional cost, make such alterations to the Work as may be required to avoid conflicts in or damage to utilities and connections.
- 22.3 Contractor shall be solely responsible for determining the transport route for shipment of all equipment, materials and products Contractor requires to perform and complete the Work. Contractor shall conduct its own tests or investigations to satisfy itself as to all transport route conditions, including obstructions, road conditions, weight restrictions, size limitations and utilities. Contractor accepts all risks and contingencies associated with the shipment of all equipment, materials and products for the Work.
- 22.4 For transportation within the Province of Newfoundland and Labrador on the Company's preferred route from the port in Cartwright to the Muskrat Falls Worksite only, the Company will undertake, at Company's cost, upgrades to transportation infrastructure necessary to transport the expected loads identified by Contractor in its Logistics and Transportation Strategy. Company will exercise reasonable efforts to complete necessary infrastructure upgrades to meet the expected delivery dates.
- 22.5 Contractor shall be solely responsible for and assumes all risks associated with the transportation of all Contractor's Personnel to and within the Site, and the cost of such transportation shall be included in the Contract Price.
- 22.6 Contractor waives its right to any claim against Company for additional compensation or any extension to a date for completion of performance of any part of the Work set out in the Milestone Schedule based on, resulting from or arising out of any differences between



transport route conditions that may exist and those conditions that may have been assumed or anticipated by Contractor, including resulting from any assumptions, anticipations, misunderstandings or misinterpretation by Contractor of port, bridge or road conditions or from any information provided by Company or Engineer.

- 22.7 Contractor shall bear all costs and charges for special and/or temporary rights which Contractor may require, including those for transport of components of the Work and access to a Worksite. Contractor shall also obtain, at Contractor's cost, any additional facilities outside a Worksite which Contractor may require for purposes of Work.
- 22.8 Subject to **Article 31**, Contractor shall be solely responsible for and assumes all risks associated with weather conditions at the Site, and the cost of performing the Work under all weather conditions experienced at the Site shall be included in the Contract Price.
- 22.9 If, during the course of the Work, Contractor encounters geological, groundwater or geotechnical conditions differing from the conditions described in document numbers LCP-AM-CD-8000-GT-RP-0001-0, MFA-AM-CD-8000-GT-RP-0001-01 and MFA-GA-CD-8210-GT-RP-0001-01 in Exhibit 11 - Company Supplied Documents, and LCP-SN-CD-4000-CV-TS-0003-01, and suffers delays and/or incurs costs as a direct result, Contractor shall immediately provide notice in writing to Engineer, which notice shall contain such information as is reasonably available to Contractor at that time relating to the nature of the differing geological, groundwater or geotechnical conditions.
- 22.10 Within fifteen (15) Business days of a notice delivered pursuant to **Article 22.9**, Contractor shall determine the magnitude of the delay resulting solely and directly from the differing geological, groundwater or geotechnical conditions, if any, and Contractor shall prepare and deliver to Engineer for Acceptance a revised Construction Schedule showing the impact thereof.
- 22.11 Except as may otherwise be agreed between the Parties, Contractor agrees that the Construction Schedule and timing of any Payment Milestone shall be adjusted by Engineer to reflect the time by which Contractor is solely and directly delayed or prevented from proceeding with the Work as a result of differing geological, groundwater or geotechnical conditions.
- 22.12 If Contractor disputes Engineer's decision regarding the delay, it may give a Notice of Dispute respect to the matter and thereafter refer the matter for resolution pursuant to the Dispute resolution procedures in **Article 39** and Exhibit 15 - Rules for Arbitration.
- 22.13 Contractor shall at all times use all reasonable efforts and take all reasonable steps as may be required to eliminate or mitigate the impact on the Construction Schedule due to differing geological, groundwater or geotechnical conditions .
- 22.14 In the event that any differing geological, groundwater or geotechnical conditions identified pursuant to **Article 22.9** constitute a Change, the provisions of **Article 26** and/or Sections 3.1(c) and/or 3.2(a) of Exhibit 17 – Joint Cost Savings Initiative for Civil Works shall apply.

ARTICLE 23
TITLE AND RISK

- 23.1 Contractor warrants good title to all Contractor's Items, consumables, goods and other items furnished by it under this Agreement and that they are free from any liens or encumbrances in favour of third parties. Risk of and in Contractor's Items shall remain with Contractor throughout the Term.
- 23.2 To the extent Company has compensated Contractor for Work:
- (a) Title to the Work (or any part of the Work) performed, including all Contractor's documentation related to the Work, shall vest in Company as and when performed or prepared. Title to all equipment, materials and products to be supplied by Contractor or its Subcontractors for incorporation into the Work shall vest in Company as and when identified and designated for incorporation into the Work;
 - (b) Contractor shall identify, segregate in a secure area so far as possible and mark or otherwise identify all equipment, materials and products for incorporation into the Work as property of Company. Title to any items free issued to Contractor by Company shall always remain vested in Company.
- 23.3 Contractor shall cause the inclusion of terms consistent with the terms of **Articles 23.1** and **23.2** in all Subcontracts so that Company and Contractor shall have the rights herein set forth with respect to each Subcontractor involved in the performance of the Work.
- 23.4 Contractor states to Company that, to the best of its knowledge and belief, Applicable Laws do not prevent Company from obtaining title to the Work in accordance with this **Article 23**.
- 23.5 Subject to **Article 17**, risk of and in the Work shall be assumed by Company upon Substantial Completion, and Contractor shall assume the risk of and undertake the care and control of the Work until Substantial Completion.
- 23.6 Contractor shall make available to Company all documentation relating to the operation and maintenance of the Work in electronic media for use by Company Group during the Term and during the operation of the Work. Contractor shall undertake all reasonable efforts to ensure documentation is provided in a form fully useable to Company with well recognized industry standard applications, including the requirements of Exhibit 3 - Coordination Procedures and Exhibit 11 - Company Supplied Documents. Provided Company has compensated Contractor in accordance with this Agreement and where the software necessary to enable Company to fully utilize documentation is based in whole or in part on Contractor's proprietary information/software, Contractor shall grant Company and its Affiliates a non-exclusive, royalty free, irrevocable (except in case of breach of this license) and non-transferable license to such information/software. Where such information/software is not proprietary to Contractor and obtained through usage of information/software leased or purchased from third parties, Contractor shall, subject to Company's Approval, arrange for and obtain for the benefit of Company and its Affiliates a non-exclusive, royalty free, irrevocable and non-transferable license to use such

information/software to enable Company Group to fully use the documentation for the sole purpose of operating and maintaining the Work. All Contractor's costs associated with such provision are deemed to be included in the Contract Price and are not separately reimbursable.

- 23.7 Company, at its discretion and upon Notice to Contractor, may take temporary possession of or temporarily use the Work, and/or any part of the Work, provided that such possession or use is for testing or interface purposes only and is for a limited time as reasonably agreed between the Parties, at any time prior to Substantial Completion of such Work provided that such possession or use does not have a material adverse effect on such Work, any remaining Work or the Warranty. Any such temporary possession or use of any part of the Work by Company, whether or not contemplated in Exhibit 1 – Scope of Work, shall not be deemed to be an Approval of that part of the Work and Contractor shall not be relieved of any of its obligations under this Agreement with respect to such part of the Work.
- 23.8 If Company takes permanent possession of or permanently uses the Work or any part thereof following a Notice pursuant to **Article 23.7** where the possession or use is not contemplated by Exhibit 1 – Scope of Work:
- (a) Engineer shall prepare a Punch List for that part of the Work used or possessed prior to Substantial Completion and upon completion of the Punch List items for compliance with this Agreement, that part of the Work used or possessed shall be deemed to be Approved by Company;
 - (b) the Warranty shall apply except that the Warranty shall commence upon use of that part of the Work to which the Notice applies, notwithstanding the time for commencement in **Article 17.1**, and continue for the duration specified in **Article 17.1**;
 - (c) Contractor shall not be relieved of its responsibilities and obligations under this Agreement; and
 - (d) Contractor shall cease to be liable for the care of the Work and responsibility for that part used and possessed, which shall therefore pass to the Company.

ARTICLE 24 COMPLETION AND DELIVERY

- 24.1 The Work shall be completed and Delivered to Company in accordance with the Milestone Schedule. In the event the Work (or any part) shall be tendered for Delivery before the applicable date in the Milestone Schedule, Company may, but shall not be obliged to, take Delivery of such Work. Any part of the Work ready for Delivery before the applicable date in the Milestone Schedule shall be stored and maintained by and at the expense of Contractor until Delivered to Company.
- 24.2 If Contractor fails to commence performance of the Work on the Effective Date or if the Contractor proceeds with the Work in such a manner that it is evident that the applicable

dates in the Milestone Schedule will be exceeded beyond the period where compensation is afforded by liquidated damages for such delay, for reasons within the control of Contractor Group, Company may terminate the Agreement or may elect to continue with the Agreement if Contractor, in accordance with the provisions of **Article 24.3**, proposes an amended Milestone Schedule which is Approved by Company in a Change Order. Any changes to the Milestone Schedule pursuant to this **Article 24.2** and **Article 31** shall not result in an increase to the Contract Price or otherwise affect Company's rights to liquidated damages if a Milestone has not been achieved in accordance with the changed Milestone Schedule.

- 24.3 If Contractor has not or considers that it will not achieve a Milestone by the date specified in Exhibit 9 – Schedule:
- (a) Contractor shall, within ten (10) Business Days of determining that a Milestone will not be achieved, submit for review and comment by Engineer a written completion plan detailing steps Contractor shall take to complete all necessary Work to meet the requirements of the Milestone, and Engineer shall provide written comment to Contractor within ten (10) Business Days of receipt;
 - (b) Contractor shall then resubmit to Engineer within five (5) Business Days a revised completion plan addressing any comments provided by Engineer, and Engineer shall provide written comment within five (5) Business Days of receipt;
 - (c) Contractor shall revise or resubmit the completion plan within the time limits in paragraphs (a) and (b) above until Contractor has addressed all comments of Engineer; and
 - (d) Contractor shall then promptly provide the necessary services, labour, materials and equipment as may be required under the completion plan.
- 24.4 The preparation, review and revision of a completion plan and provision of services, labour, materials and equipment as required by the completion plan shall not relieve Contractor of its obligations to achieve a Milestone by the date specified in Exhibit 9 – Schedule or be the basis for an increase in compensation.
- 24.5 Delivery of the Work shall be performed in the manner specified in the Agreement. Except as specified otherwise in the Agreement, Contractor shall be responsible for and shall bear the cost of packaging, loading and/or carriage of the Work to the location for Delivery specified in the Agreement.
- 24.6 Contractor shall ensure that provisions corresponding to those contained in this **Article 24** are included in all Subcontracts.



ARTICLE 25
SUBSTANTIAL AND FINAL COMPLETION

- 25.1 Substantial Completion of the Work shall have occurred if and only if all of the items in paragraphs (a) to (h), inclusive, of this **Article 25.1** have occurred to the satisfaction of Engineer in accordance with this Agreement:
- (a) The Work is ready for use or is being used for the purpose intended and is capable of achieving Final Completion at a cost of not more than two percent (2%) of the Contract Price;
 - (b) Contractor has delivered to Engineer all drawings, specifications, calculations, test data, performance data, equipment descriptions, equipment and system installation instruction manuals, integrated and coordinated operation and maintenance manuals, data, training aids and other technical documentation and information, for Company to use and maintain the Work;
 - (c) Contractor has delivered to Engineer a Notice:
 - (i) detailing all outstanding Claims of Contractor under this Agreement up to the time of Substantial Completion with documentation sufficient in the opinion of Engineer to support such Claims, and Company shall not be liable to Contractor for any Claim under this Agreement which is not identified within that Notice and supported by sufficient documentation; or
 - (ii) certifying that there are no such outstanding Claims;
 - (d) Contractor has delivered to Engineer the latest available clearance certificate from the Workers' Compensation Commission of Newfoundland and Labrador that no assessments or other amounts are owing to the date therein specified;
 - (e) Contractor has removed all Contractor Group's Personnel, supplies, equipment, materials, rubbish and temporary facilities, except those reasonably required for completion of outstanding Punch List items and any remaining Work, from the Worksite so that the Worksite is neat, clean and safe;
 - (f) Contractor shall have assigned to Company all representations, warranties, guarantees and obligations which Contractor received from Subcontractors subject to Contractor's right to retain the benefit of all Subcontractors that Contractor requires to complete the Work;
 - (g) There being no liens filed or registered pursuant to the *Mechanics' Lien Act*, RSNL 1990, c.M-3, with respect to or arising from the Work at that time; and
 - (h) Contractor shall have completed Trial Operation at each Site and received an Approved Ready for Operations Handover Certificate from Company.

- 25.2 When Contractor believes the requirements of Substantial Completion have been met, Contractor shall request from Engineer a Substantial Completion Certificate. Such request shall contain a declaration by Contractor that all the requirements of Substantial Completion have been met and a report of the results of any required tests for the Work with sufficient detail to enable Engineer to determine whether Substantial Completion has been achieved. If all requirements of Substantial Completion:
- (a) have been met to the satisfaction of Engineer, the date of Substantial Completion shall be the later of (i) the date specified in Contractor's request, and (ii) the date when the requirements of Substantial Completion were met to the satisfaction of Engineer;
 - (b) have not been met to the satisfaction of Engineer, then Engineer shall advise Contractor in writing why Substantial Completion has not been achieved.
- 25.3 Promptly after Substantial Completion has been achieved pursuant to **Article 25.2(a)**, Engineer shall issue a Substantial Completion Certificate to Contractor, which states the date of Substantial Completion and Contractor shall turn over control and operation of the Work to Company; if Engineer fails to promptly issue such Substantial Completion Certificate, the Substantial Completion Certificate shall be deemed to have been issued on the 90th day following the commencement of Trial Operation.
- 25.4 If any item of Work on the Punch List is not completed by the date specified on the Punch List for such item or at such time as the Parties may otherwise agree upon, Company may complete or employ others to complete the item and Contractor shall be liable for and pay Company one hundred ten percent (110%) the reasonable cost to complete such item, and Company may deduct such amount from any amount otherwise owing to Contractor, without affecting any Warranty.
- 25.5 Contractor's access to and continued presence at the Site after the date of Substantial Completion shall be for the sole purpose of achieving Final Completion. In performing such work Contractor will use its best efforts not to inconvenience or interfere with Company and Company's Other Contractors.
- 25.6 Forty-five (45) days after the date of Substantial Completion, and provided no liens have been filed or registered with respect to the Work, Company shall pay Contractor three quarters of the holdback retained by Company pursuant to the *Mechanics' Lien Act*, RSNL 1990, c. M-3.
- 25.7 When Contractor has completed all the Work in accordance with the terms of this Agreement, except Warranty obligations, Contractor may by Notice to Company request written confirmation that Contractor has fully performed all of the Work hereunder (the "**Final Completion Certificate**").
- 25.8 By submission of the Notice to Company for confirmation that Contractor has fully performed all of the Work pursuant to **Article 25.7**, Contractor agrees that, as of the date of the issuance of the Notice, Contractor waives, remises, releases and discharges Company of

any and all Claims as of the date of the Notice that are known, ought to have been known or discoverable by reasonable means by Contractor, which Contractor has or may have relating to or arising out of this Agreement and the subject matter of this Agreement, and all facts and circumstances related to the Work, save and except:

- (a) any Claims previously submitted in writing prior to the date of the Notice, and remaining unresolved;
- (b) the balance of the Contract Price payable, if any, upon the issuance of the Final Completion Certificate; and
- (c) any Claims arising out of Company's obligation to indemnify Contractor pursuant to **Article 21.3**.

25.9 Company shall not be obliged to issue the Final Completion Certificate until Contractor has fulfilled all of its Work obligations, including:

- (a) satisfying any liens, claims or encumbrances affecting Company's property in connection with the Work or Warranty Work in accordance with **Article 41**; and
- (b) paying in full any and all outstanding obligations against the Work including any liquidated damages payable to Company pursuant to **Article 36**.

25.10 Upon Contractor satisfying the criteria set forth in **Article 25.9**, Company shall provide Contractor with the Final Completion Certificate in the form set forth in Exhibit 3 – Coordination Procedures within thirty (30) days of Contractor's Notice under **Article 25.7** or Contractor demonstrating that it has satisfied the criteria set forth in **Article 25.9**, whichever is later.

25.11 The issuance of the Final Completion Certificate shall not release Contractor from the provisions of this Agreement which expressly or by their nature extend beyond the expiration or any termination of this Agreement.

25.12 Within fifteen (15) Business Days after issuance of the Final Completion Certificate, Company shall pay Contractor the balance of the Contract Price for the Work, including the balance of the holdback retained by Company pursuant to the *Mechanics' Lien Act*, R.S.N.L. 1990, c.M-3, less:

- (a) an amount to satisfy any liens registered against the property of Company arising out of Contractor Group's performance of the Work in accordance with **Article 41**;
- (b) any amount Company is entitled to set off against payment to Contractor; and
- (c) any amount payable by Contractor to Company under this Agreement.

25.13 If Trial Operation has not commenced as defined in the Technical Specifications within nine (9) months from the date of the completion of Commissioning Static Checks, for reasons not

attributable to Contractor, then Substantial Completion shall be deemed to have occurred nine (9) months after the date of completion of Commissioning Static Checks.

- 25.14 In the event that the specified tests set out in this Agreement cannot be conducted either in part, or in full, because necessary facilities or power for which Company is responsible have not been completed and/or is not available (including the power transmission line system between Muskrat Falls and Soldier Pond) then Contractor shall have the right by Notice to Company to suspend performance of the Work necessary to reach Substantial Completion until such time as the facilities and/or power are available to permit completion of the specified tests. In such event, the Milestone Schedule shall be extended by a period equivalent to the duration of the suspension plus the period specified in **Article 25.16**. The Contractor shall submit for Company Approval a Change Request for such an extension of the Milestone Schedule and the costs for the Suspension Period, including for the proper storage and preservation of the Work.
- 25.15 During the aforesaid period of suspension, Contractor shall be responsible for the proper storage and preservation of the Work.
- 25.16 When the facilities and/or power are available to permit completion of the specified tests, Company shall provide Contractor with twenty (20) Business Days advance notice to allow Contractor to re-mobilize Contractor's Personnel and prepare Contractor's Items.

ARTICLE 26 CHANGES IN THE WORK

- 26.1 Company has the right to make a Change at any time and from time to time during the performance of the Work by issuing a Change Order. Compensation for a Change shall be determined in accordance with Exhibit 2 – Compensation and Exhibit 3 – Coordination Procedures. Any such Change shall not constitute a material addition to the type and nature of the original Work as specified in Exhibit 1 - Scope of Work.
- 26.2 Contractor shall not perform and shall not be entitled to any compensation for a Change without a Change Order issued by Company to Contractor for the Change.
- 26.3 Contractor will comply with the requirements of Engineer and Exhibit 3 – Coordination Procedures in the development of the pricing, impacts on resources and schedule as it relates to such Change and present a comprehensive proposal covering the Change to Company for Approval.
- 26.4 Except to the extent expressly provided in a Change Order, no Changes shall vitiate or invalidate or be deemed to amend or be deemed to constitute a waiver of any provision of this Agreement. All Changes shall be governed by all the provisions of this Agreement. Except as may be set forth in a Change Order, Changes will not result in any limitation of Contractor's Warranty under **Article 17**.
- 26.5 Contractor shall commence with and shall execute all Changes with all due diligence in accordance with the Change Order.

- 26.6 In the event the Parties fail to reach agreement on the pricing and impacts on resources and schedule with respect to a Change, Contractor shall perform the work specified in the Change Order as issued by Company and the Dispute will be handled in accordance with **Article 39**, but in no case shall the price of a Change exceed that amount determined in accordance with **Article 26.10** and Section 6 of Exhibit 2 - Compensation.
- 26.7 If Contractor considers that a Change is necessary or desirable, Contractor may request a Change Order by submitting a Change Request in writing to Engineer in accordance with the procedure set out in Exhibit 3 – Coordination Procedures.
- 26.8 If Contractor considers that an occurrence has taken place which constitutes a Change, then Contractor shall, within fifteen (15) Business Days from the occurrence, contact Engineer and request a Change Order by submitting a Change Request to Engineer in accordance with the procedure set out in Exhibit 3 – Coordination Procedures. If Company:
- (a) agrees that the occurrence constitutes a Change, then Company shall issue a Change Order in respect of the Change; or
 - (b) disagrees that the occurrence constitutes a Change, Contractor shall proceed with the Work without delay and such continuation of the Work shall be without prejudice to Contractor's rights to advance a Dispute under **Article 39**.

If Contractor fails to comply with the conditions of this **Article 26.8**, it will relinquish its right to request a Change Order and waives any claim it may have for additional compensation and for an extension of time to complete a Milestone arising from the occurrence.

- 26.9 Changes shall be invoiced and paid for in accordance with **Article 12**, Exhibit 2 – Compensation and Exhibit 3 – Coordination Procedures. Cost of the work carried out under a Change Order will reflect any discounts, rebates, refunds or free material credits earned with purchase of material or other goods and services charged under a Change.
- 26.10 The adjustment in the Contract Price for a Change carried out prior to agreement by Contractor and Company on the price for the Change shall be determined on the basis of the cost of expenditures to perform the work and/or cost savings for a reduction in work that are attributable to the Change as determined in accordance with **Articles 26.11** and **26.12(a)**, and overhead and profit being addressed as follows:
- (a) to the extent rates and prices in Exhibit 2 – Compensation apply, there shall be no allowance for overhead and profit;
 - (b) to the extent rates and prices in Exhibit 2 – Compensation do not apply:
 - (i) if a Change results in an increase in the Contract Price, an allowance for overhead and profit will be included as specified in Exhibit 2 - Compensation, Section 4;

- (ii) if a Change results in a decrease in the Contract Price, the deduction for overhead and profit shall be as specified in Exhibit 2 - Compensation, Section 4; and
- (iii) when both additions and deletions covering related work or substitutions are involved in a change in the Work, the allowance or deduction for overhead and profit will be calculated on the basis of the net increase or decrease, if any, with respect to that change in the Work.

26.11 Contractor will keep and present in such form as Company may require an itemized accounting of the cost of expenditures and savings referred to in **Article 26.10** together with supporting data. The cost of the Change shall be limited to the actual cost incurred by Contractor for the performance of the work attributable to the Change, using any applicable rates and prices in Exhibit 2 – Compensation, where the actual cost shall be limited to:

- (a) wages (including applicable Taxes) and benefits paid for labour, supervision, project management, engineering and procurement in the direct employ of Contractor;
- (b) the cost (including cost of transportation) of all equipment, material and products incorporated into the Work less any trade discounts;
- (c) the cost (including cost of transportation) of materials, supplies, equipment and maintenance thereof, which are consumed, less any trade discounts and cost less salvage value on such items used but not consumed and which remain the property of Contractor;
- (d) rental cost of all tools, machinery and equipment, exclusive of hand tools, whether rented from or provided by Contractor or others;
- (e) deposits lost;
- (f) the amounts of all costs arising out of Subcontracts;
- (g) the cost of quality assurance such as independent inspection and testing services;
- (h) any adjustment in bonding and/or insurance costs for which Contractor is liable; and
- (i) the cost of removal and disposal of waste products and debris.

26.12 If the quantity of the Work is decreased or any part of the Work is deleted:

- (a) To the extent possible, the value of any deletion or reduction in the Work shall be determined using the rates and prices set out in Exhibit 2 – Compensation; and
- (b) Contractor shall not be entitled to claim any indirect or consequential damages, including loss of profits or loss of revenue.

- 26.13 If at any time after the start of the work directed by a Change Order for which there was no agreement on price, Company and Contractor reach agreement on the adjustment to the Contract Price and any adjustment to Exhibit 9 – Schedule, this agreement will be recorded in an amendment to the Change Order issued by Company.
- 26.14 If there is a change in Applicable Laws which makes modifications to the Work necessary or advisable, Company shall advise Contractor of the change in Applicable Law and shall present to Contractor a proposal for such modifications required as a result of the change in Applicable Law. On receipt of such proposal, Contractor shall prepare and provide to Company the following:
- (a) details of the effect, if any, on the costs of the Work;
 - (b) details of the impact, if any, on dates for completion of Milestones and/or the Technical Requirements;
 - (c) details of the impact on the Contract Price; and
 - (d) a Change Request in accordance with **Article 26.7**.

ARTICLE 27 PUBLICITY COMMUNICATIONS

- 27.1 Contractor agrees that all public relation matters arising out of or in connection with the Work shall be the sole responsibility of Company. Contractor shall obtain Company's Approval of the text of any announcement, publication or other type of communication concerning the Work.
- 27.2 Contractor shall not advertise or issue any information, publication, document or article (including photographs or film) for publication or media releases or other publicity relating to the Work, the Agreement, the LCP or Company's business and activities without Approval of Company except as may be required by Applicable Law. Contractor shall promptly notify Company in advance of any such advertisement, issuance or publication that may be required by Applicable Law.
- 27.3 Contractor shall refer to Company any enquiries from the media concerning the Work, the Agreement, the LCP or Company's business and activities.
- 27.4 Contractor shall include in each Subcontract a provision that incorporates the terms of **Article 27.1, 27.2 and 27.3** such that those terms shall apply to each Subcontractor.

ARTICLE 28 CONFIDENTIALITY

- 28.1 The term "**Confidential Information**" shall mean all information and data, in whatever form, which a Party directly or indirectly acquires from the other Party or from the performance of the Work (including events witnessed by Contractor Group or Company Group and the Personnel of each of the foregoing in connection with the performance of the Work) and

includes without limitation, Contractor's Proprietary Information. Confidential Information does not include information which:

- (a) prior to the time of disclosure or acquisition is lawfully in the public domain;
- (b) after disclosure or acquisition becomes part of the public domain, through no act or omission on the part of a Party;
- (c) prior to disclosure or acquisition was already lawfully in a Party's possession without limitation on disclosure to others;
- (d) was obtained by a Party from a third party who is lawfully in possession of such information and is not subject to a contractual or fiduciary relationship with the other Party with respect to such information; or
- (e) was independently developed by the receiving Party without the use of Confidential Information.

28.2 Contractor shall not disclose Company's Confidential Information (including photographs of activities of Company) to any third party nor use any of Company's Confidential Information without the Approval of Company. Notwithstanding the foregoing, Contractor may disclose Company's Confidential Information if required by Applicable Laws. Contractor shall promptly notify Company in advance of any such intended disclosure. Contractor shall adopt and follow precautionary measures with respect to Company's Confidential Information to ensure that it is not disclosed to third parties by any of Contractor Group without the Approval of Company. Any Approval given by Company shall apply only to the specific request for Approval made by Contractor.

28.3 Company may disclose Contractor's Confidential Information to its Affiliates, Engineer and the directors, officers, employees, contractors, subcontractors, legal counsel, consultants and advisors of the foregoing to whom disclosure is required to enable Company to perform its obligations hereunder or to any other Person if such disclosure is required by Applicable Laws, provided Company has taken such reasonable and necessary precautions to prevent any of the foregoing parties from disclosing such information to any third party. Company may disclose such necessary Contractor's Confidential Information to Company's bankers and to financial institutions from whom Company may seek financing for the LCP.

28.4 To the extent Company is subject to the provisions of the Privacy Law, all documents and other records in the custody of or under the control of Company and its Affiliates, and in relation to the Work in the custody of or under the control of Contractor, will be subject to the Privacy Law. Subject to the limitations of the Privacy Law and to the extent it applies to Company or its Affiliates, the confidentiality obligations contained in this Agreement shall apply.

28.5 Each Party who discloses Confidential Information of another Party to its Personnel shall ensure that any such Personnel are informed of the confidential nature of the information disclosed and that such Personnel comply with the Party's obligations under this **Article 28**.

- 28.6 This **Article 28** does not apply to the disclosure of information by a Party in order to comply with any Applicable Law or legally binding order of any Court or Authority, as long as prior to such disclosure the disclosing Party gives Notice to the other Party with full particulars of the proposed disclosure.
- 28.7 Contractor acknowledges that Company is subject to the access to information and Privacy Law pursuant to which the public may have access to Company's records.
- 28.8 If requested by Company, whether prior to or after the expiry or earlier termination of the Agreement, Contractor shall promptly deliver to Company all Confidential Information in the custody, possession or control of Contractor or any of its Personnel.
- 28.9 The breach of any of the conditions contained in this **Article 28** will be deemed to be a material breach of the Agreement.

ARTICLE 29
PATENTS, TRADEMARKS, COPYRIGHTS

- 29.1 All intellectual property embedded in or delivered with the Work is the sole and exclusive property of Contractor. Contractor grants to Company and its Affiliates a non-exclusive, royalty-free, irrevocable (except in case of breach of this license by Company), non-transferable license to use any of Contractor's intellectual property embedded in or delivered with the Work for the sole purposes of performance of the Work, for the purposes of interfacing the Work with equipment supplied by third parties and for servicing and maintaining such Work.
- 29.2 All rights, title and interest in and to any discoveries and inventions, original work of authorship and to any design, specification, or drawings produced in the course of the performance of the Work shall be solely owned by Contractor.
- 29.3 Contractor shall not incorporate anything in the Work which involves the use of a copyright, trademark, patent or proprietary information of a third party for which Company has no license rights. Contractor agrees to defend, indemnify and hold Company Group harmless from and against any and all claims, losses, damages, costs (including legal costs), expenses and liabilities of every kind and nature arising out of or from any infringement or alleged infringement of patents or proprietary or protected rights improperly incorporated in the Work. If Company notifies Contractor within thirty (30) days of the receipt of any claim that the Work infringes a patent, Contractor shall, at its sole expense:
- (a) settle (with Company's consent, which shall not be unreasonably withheld) or defend such claim or any suit or proceeding arising therefrom and pay all damages and costs awarded therein against Company;
 - (b) procure for Company the right to continue using the Work;
 - (c) modify the Work so that it becomes non-infringing;

- (d) replace the Work with a non-infringing Work or re-perform the Work with a non-infringing Work.
- 29.4 Contractor shall require its Subcontractors to provide the same rights and protections for Company Group that Contractor is required to provide pursuant to this **Article 29.3**. Company shall provide such reasonable information and assistance as may be requested by Contractor in respect of Contractor's efforts to settle or defend such claims.
- 29.5 Company agrees to defend, indemnify and hold Contractor Group safe and harmless from and against any and all claims, losses, damages, costs (including legal costs), expenses and liabilities of every kind and nature arising out of or from any infringement or alleged infringement of patent or proprietary or protected rights covering property, methods or processes furnished by Company.
- 29.6 Subject to **Article 29.1** and **29.2**, all drawings, assembly procedures, process specifications, computer programs, documents and information developed by Contractor Group for the purposes of the Agreement or which may arise out of the performance of the Agreement by Contractor shall be the property of Company.
- 29.6 This **Article 29** states Contractor's entire liability for indemnification for patent, trademark, copyright, and trade secret infringement for the Work.

**ARTICLE 30
ASSIGNMENT**

- 30.1 Company may, without the Approval of Contractor, assign this Agreement, or any part thereof, to:
- (a) any Affiliate of Company (an "**Affiliate Assignee**"); or
 - (b) any successor to or replacement corporation of Company or similar entity in connection with any merger, consolidation or other reorganization of Company or transfer of all or any part of Company's assets other than as contemplated in paragraph (a) above; or
 - (c) any entity that has provided or provides financing for those costs of the LCP which includes the Work to Company, the Affiliate Assignee or their respective Affiliates, successors and replacements.
- 30.2 In the event of an assignment pursuant to **Article 30.1(c)**, Contractor agrees that:
- (a) prior to the exercise by Contractor of any rights it may have under the Agreement arising by reason of any breach by Company or Affiliate Assignee, as the case may be, of the Agreement (any such breach, a "**Breach**"), including cancellation or suspension of the Contractor's performance thereunder, Contractor shall give to the Agent Party at such time, written notice of the Breach at the time such notice is provided to Company or Affiliate Assignee, as the case may be. Upon receipt of such notice, such Agent Party shall be entitled, but shall in no way be obligated, to cure or



cause to be cured such Breach and curable breaches which arose prior to such notice within sixty (60) days following the receipt by such Agent Party of such notice ("**Cure Period**"), provided that:

- (i) such Cure Period will automatically be extended for the period of time the Contractor is precluded by Applicable Laws or by virtue of any debt reorganization, insolvency or bankruptcy proceedings, from cancelling the Agreement; and
 - (ii) during the Cure Period, Contractor will not be obligated to supply goods or services or otherwise perform prospective obligations under the Agreement unless Contractor receives immediate payment for such goods, services or obligations;
- (b) it shall not exercise any rights of cancellation or suspension under the Agreement before the expiry of the Cure Period, unless the Agent Party at such time, expressly notifies Contractor in writing that such Agent Party shall not:
- (i) cure or cause to be cured the Breach specified in the relevant notice if such Breach is of a curable nature, or
 - (ii) observe and perform the obligations of Company or Affiliate assignee, as the case may be, under the Agreement, including curing curable breaches which arose prior to such notice.

30.3 Immediately and automatically upon an assignment pursuant to **Article 30.1**, Company shall be fully and finally released and discharged from all liabilities, obligations, any and all actions, causes of action and covenants, whether expressed or implied, Claims or demands for damages, sums due, indemnity, costs (including legal fees and disbursements), expenses, interest, loss or injury of every nature and kind whatsoever and howsoever arising, which Contractor may heretofore have had, may now have, or may hereinafter have, in any way relating to or under this Agreement, both past and future, and Contractor acknowledges and agrees that the Affiliate Assignee shall thereupon be the sole obligor for all past and any future obligations under this Agreement in the same manner and to the same extent as if it was the sole obligor and original party hereto in the place and stead of Company under this Agreement, the whole without any further action, Approval, notice or document being taken, obtained, sent or executed by or to any of the Parties at any time. Any assignment pursuant to **Article 30.1** shall become effective immediately upon delivery to Contractor of a Notice from Company in the form set out in Exhibit 3 – Coordination Procedures – Appendix I.

30.4 Company shall not assign this Agreement or any of its benefits or obligations thereunder to any third party, other than those described in **Article 30.1** without Contractor's Approval, which Approval shall not be unreasonably withheld, conditioned or delayed.

30.5 Following any assignment by Company pursuant to this **Article 30**, this Agreement may be re-assigned to Company without Contractor's Approval.

- 30.6 Contractor shall not assign any of its interest in this Agreement without the Approval of Company. Such Approval shall not release or relieve Contractor from any representation or warranty given by Contractor or any obligation to be performed on the part of Contractor under this Agreement. Notwithstanding the foregoing, Contractor may at any time assign its interest in this Agreement to an Affiliate, provided that:
- (a) Contractor shall remain liable for any obligation to be performed on the part of Contractor under this Agreement, including Performance Guarantees, if the Affiliate fails to fulfill any such obligation;
 - (b) the Letter of Credit shall remain in place, remain effective and available to Company in the event the Affiliate fails to fulfill Contractor's obligation under this Agreement; and
 - (c) if the Affiliate has a tax residency status that is different than the tax residency status of Contractor as declared to Company in accordance with **Article 13.3** (or such subsequent tax residency approved by Company in accordance with **Article 13.3**), Contractor has obtained the prior written approval of Company of the proposed assignment to the Affiliate.
- 30.7 In the event of a transfer by sale, assignment, amalgamation, merger, trust, operation of law or otherwise of any shares, interest or voting rights of Contractor which may result in the change of identity of the Person exercising *de facto* or *de jure* control over Contractor, the provisions of **Article 30.6** shall apply.

ARTICLE 31 FORCE MAJEURE

- 31.1 For the purposes of this Agreement, "**Force Majeure**" shall mean and be limited to the following:
- (a) acts of God, riot, civil unrest, civil disturbance (including blockades to and from the Site), war, acts of civil or military authority, epidemics, quarantine restrictions, acts of terrorism;
 - (b) earthquake, fire, floods, storms in excess of a fifty (50) year storm, including tornadoes, named tropical storms and hurricanes, tsunamis, volcanic activity or other natural physical disaster, but excluding other weather conditions regardless of severity;
 - (c) strikes at a national or provincial industry-wide level, industrial disputes at a national or provincial industry-wide level, which affect a substantial or essential portion of the Work;
 - (d) a change in Applicable Law or the interpretation thereof (recognized by relevant courts or relevant government authorities) which change could not on the Effective

cm TS

Date reasonably have been foreseen and which affects a substantial or essential portion of the Work;

- (e) maritime and aviation disasters; and
 - (f) any other event that is similar in nature to the causes set forth above and which is beyond the reasonable control of the affected Party.
- 31.2 Neither Contractor nor Company shall be responsible for any failure to fulfill any term or condition of this Agreement if and to the extent that such fulfillment has been delayed or rendered impossible by a Force Majeure occurrence of which the other Party has been notified in accordance with this **Article 31** and which is beyond the control and without the fault or negligence of the Party affected, and which by the exercise of reasonable diligence the said Party is unable to provide against. Notwithstanding the foregoing:
- (a) Company shall compensate Contractor as soon as reasonably practicable for Work performed to the date of the Force Majeure upon receipt of an invoice and Billing Information pursuant to **Article 12**; and
 - (b) if Force Majeure affects a Worksite but not other Worksites, Company shall compensate Contractor in accordance with this Agreement for Work performed at such other Worksites.
- 31.3 A Party may not rely upon the provisions of **Article 31.2**:
- (a) unless it shall as soon as physically practicable upon being made aware of the Force Majeure occurrence notify the other Party of such Force Majeure and of the obligations expected to be affected thereby;
 - (b) unless it shall immediately take all such steps as may be commercially reasonable in the circumstances to cause the discontinuance of, and to minimize the effect of, the Force Majeure occurrence and resume performance of the obligation affected by the Force Majeure as soon as reasonably possible; and
 - (c) to the extent that and for so long as there would be concurrent delay to Work resulting from pre-existing matters within the responsibility or obligation of Contractor under this Agreement.
- 31.4 Subject to **Article 31.2(a)**, where Company claims Force Majeure and is entitled to rely upon the provisions of **Article 31.2**, then no compensation shall be payable to Contractor during the period that the Force Majeure occurrence continues to prevent performance by Company. Where Contractor claims Force Majeure and is entitled to rely on the provisions of **Article 31.2**, then no compensation shall be payable to Contractor during the period that the Force Majeure occurrence continues to prevent performance by Contractor.
- 31.5 If Contractor is prevented from or delayed in performing any of its obligations as a result of Force Majeure for a consecutive period of more than one hundred twenty (120) days during the Term, Company shall have the right thereafter to immediately terminate this Agreement

upon giving Notice thereof to Contractor and Company shall have no further liability whatsoever to Contractor (except payment for Work performed prior to such termination).

- 31.6 If Company is prevented from or delayed in performing any of its obligations as a result of Force Majeure for a consecutive period of more than one hundred twenty (120) days during the Term, Contractor shall have the right thereafter to immediately terminate this Agreement upon giving Notice thereof to Company and Company shall have no further liability whatsoever to Contractor (except payment for Work performed prior to such termination).
- 31.7 A Force Majeure occurrence shall in no circumstances entitle Contractor to an increase in the Contract Price. Contractor shall be entitled to a reasonable extension of time for the Milestone(s) affected in order to recover from the Force Majeure.
- 31.8 During any period in which the performance of the Work is prevented because of Force Majeure, Contractor and Company shall mutually agree either (1) to continue maintaining Contractor's Items and Personnel at or near the Worksite, in which case Company will reimburse Contractor at the rates outlined in Exhibit 2 - Compensation which is intended to cover only those expenses incurred by Contractor as a direct result of such prevention of performance, or (2) to demobilize Contractor's Items and Personnel.

ARTICLE 32 DEFAULT AND TERMINATION

- 32.1 Company may, without prejudice to any other right or remedy that it may have against Contractor immediately terminate this Agreement by giving Notice to Contractor, after exercising due diligence, in the event that any of the following shall occur:
- (a) Contractor breaches any of its material obligations under **Article 15**;
 - (b) Contractor becomes or is, in Company's reasonable opinion, likely to become insolvent or to go into liquidation pursuant to any of the conditions described in **Article 33.1**;
 - (c) The Work or any significant and material part thereof becomes an actual or constructive total loss prior to Delivery and Contractor cannot provide adequate assurance that it will be able to recover from such actual or constructive loss in a time satisfactory to Company;
 - (d) Contractor fails to maintain the insurance required in accordance with **Article 18**; or
 - (e) Contractor fails to procure or maintain the Letter of Credit in accordance with **Article 7**.
- 32.2 If Company has provided ten (10) Business Days prior Notice to Contractor of the following applicable occurrence and, within such ten (10) Business Day period or any longer cure period specified in the Notice, Contractor has failed to either present a plan to remedy such occurrence that is accepted by Company or has failed to commence and diligently pursue

cm (13)

actions reasonably necessary to mitigate or remedy such occurrence, Company may, without prejudice to any other right or remedy that it may have against Contractor, by giving Notice to Contractor, immediately terminate this Agreement in the event that any of the following shall occur:

- (a) Contractor has substantially failed to execute the Work in accordance with Exhibit 9 – Schedule;
- (b) Contractor fails to make payment for labour, materials, financing, skill or other services provided to Contractor by third parties in the performance of the Work in accordance with the terms of Contractor's agreement with such third parties; or
- (c) Except as otherwise allowed by this Agreement, Contractor subcontracts or delegates any portion of the Work, or its obligations hereunder, without Company's Approval in accordance with **Article 6.2**; or
- (d) Contractor assigns this Agreement to a third party other than an Affiliate without Company's Approval pursuant to **Article 30.6**; or
- (e) Contractor disregards reasonable instructions of Company given in accordance with this Agreement and such disregard has a material adverse effect on the Work; or
- (f) Contractor is in breach of any other material obligation(s), including any terms, conditions, covenants, representations or warranties under this Agreement and is unable to rectify such breach within sixty (60) days of Company's Notice or is unable to provide an acceptable plan to Engineer to rectify the breach.

32.3 In the event Company terminates this Agreement pursuant to **Article 32.1, 32.2 or 33.1**, Company may take title and possession of all Work and Company may complete the performance of the Work by whatever method it may deem expedient. In such case:

- (a) Company shall have no liability whatsoever to Contractor, except for any amounts payable up to the date of termination of this Agreement, subject to Company's rights of set off, provided that Contractor shall be reimbursed for all Work performed by Contractor, to the satisfaction of Company, prior to such termination;
- (b) subject always to considerations of health, safety and of the environment, Contractor shall discontinue performance of the Work and shall comply in full with Company's instructions regarding such termination;
- (c) Contractor shall use its best efforts to assign to Company or its nominee any Subcontracts;
- (d) Contractor shall promptly deliver to Company all documents prepared or obtained by Contractor in connection with the Work and shall carry out Company's instructions concerning any cancellation or assignment of Subcontracts, purchase orders and any other matters arising out of this Agreement which Company decides are necessary or expedient;

- (e) Contractor shall allow Company, or its nominees, full right of access to the Worksites so as to remove or perform Work; and
- (f) Company shall grant Contractor Group reasonable right of access to the Sites so as to enable Contractor Group to remove their property.

32.4 Notwithstanding any other provision of this Agreement:

- (a) Company may in its sole and absolute discretion and for any reason, including convenience of Company and without any fault or default on the part of Contractor, terminate this Agreement effective immediately upon giving Notice to Contractor or effective at a future date specified in the Notice; and
- (b) subject to Contractor complying with its obligations to protect persons and property from damage, Contractor shall cease the performance of the Work immediately upon receiving that Notice or upon any later date specified in that Notice.

32.5 In the event Company terminates the Agreement pursuant to **Article 32.4** or **Article 31.5**, Company may take title and possession of all Work and complete the performance of the Work by whatever method it may deem expedient. In such case:

- (a) For Milestone Work, Company shall reimburse Contractor the aggregate value of all achieved and Approved Milestones less the aggregate value of all amounts paid in relation to such achieved and Approved Milestones at the time of termination. Company shall also pay Contractor a proportionate value of any Milestone or lump sum Change Orders by progress, wherein such proportionate value is determined by demonstrated Work progress, as agreed between the Parties, associated with the achievement of such Milestones or lump sum Change Orders.
- (b) For reimbursable Change Orders, Company shall reimburse Contractor for actual Work performed up to the date of termination, subject to Contractor compliance with **Article 12.13(b)**.
- (c) Contractor shall clearly document and present to Company the costs incurred in the performance of the Agreement and the cancellation charges applicable to Subcontracts. In the event that costs incurred in the performance of the Agreement, together with the cancellation charges applicable to Subcontracts, are less than the amounts which have been previously paid to Contractor on account under the Agreement, Contractor shall reimburse Company in the amount of the difference within ten (10) Business Days of demand by Company following determination of the amount thereof.
- (d) Contractor shall, prior to paying or agreeing to pay any cancellation charges pursuant to such Subcontracts, contracts and other agreements, submit to Company the amount of such charges for Approval. If and to the extent that Company does not Approve the amount of such charges, Contractor shall not pay the same and the

Parties shall jointly negotiate with the relevant third party or parties in an attempt to reduce the amount thereof.

- (e) In the event that the costs incurred in the performance of the Agreement are more than the amounts which have previously been paid to Contractor on account under the Agreement, Company shall reimburse Contractor in the amount of the difference within ten (10) Business Days of demand following determination of the amount thereof provided that Contractor has clearly documented the calculation resulting in such difference and has satisfied the requirements of paragraph (g) of this **Article 32.5**. In no event shall the aggregate of the amounts paid to Contractor under this Article exceed the Contract Price.
- (f) Subject always to considerations of health, safety and of the environment, Contractor shall discontinue performance of the Work and shall comply in full with Company's instructions regarding such termination.
- (g) Contractor shall promptly deliver to Company all data, calculations and other materials associated with the Work, all on an appropriate medium, together with all drawings, specifications and other documents prepared or obtained by Contractor in connection with the Work and shall carry out Company's instructions concerning any cancellation or assignment of Subcontracts, purchase orders and any other matters arising out of this Agreement which Company decides are necessary or expedient.
- (h) Contractor shall allow Company, or its nominees, full right of access to the Worksites so as to remove or perform Work.

32.6 The Parties acknowledge and confirm their respective obligations to make commercially reasonable efforts to mitigate any damages or costs arising from any termination of this Agreement.

32.7 Contractor shall be entitled to terminate this Agreement upon Notice to Company, after exercising due diligence, if:

- (a) Company substantially fails to perform its material obligations under the Agreement relating to compensation, access to the Site, or obtaining the permits, licenses or authorizations pursuant to **Article 10.3**;
- (b) a Suspension Period that affects the whole of the Work exceeds three hundred sixty five (365) days;
- (c) Company or its assets becomes the subject of any proceeding (whether initiated by Company or another Person) under bankruptcy or insolvency laws, including proceedings under the *Companies' Creditors' Arrangement Act* (Canada), R.S.C. 1985, c. C-36;

- (d) Company becomes the subject of any proceeding for liquidation, or winding-up (whether initiated by Company or another Person);
- (e) a receiver or receiver-manager of all or any part of Company's assets is appointed by a Court or by any of its creditors; or
- (f) Company commits an act of bankruptcy as defined in the *Bankruptcy and Insolvency Act* (Canada), R.S.C. 1985, c. B-3, or commits any other act or omission which would entitle any of Company's creditors to initiate a process or proceeding to take possession of any of Company's assets or to have any of Company's assets distributed among such creditors.

In the event of an occurrence described by **Article 32.7(a)** or **Article 32.7(b)**, Contractor may, upon giving ten (10) Business Days' Notice to Company, terminate this Agreement if Company has failed to commence and diligently pursue actions reasonably necessary to mitigate, remedy or to cure the default described by **Article 32.7(a)** or fails to end the Suspension Period described in **Article 32.7(b)** within the ten (10) Business Days period. However, in the case of **Articles 32.7 (c) to (f)** Contractor may, by Notice, terminate this Agreement immediately. Notwithstanding the foregoing, if any Authority or Applicable Law requires Company to obtain permits, licenses or authorizations not reasonably anticipated, then Company shall advise Contractor promptly in writing regarding the need for and time required to obtain any such permits, licenses or authorizations and Company shall not be in default under this **Article 32.7** if it commences and diligently pursues actions reasonably necessary to obtain such permits, licenses or authorizations and Contractor shall be entitled to an extension to the dates for completion of any impacted Milestone equal to the number of days the critical path of the Milestone is directly impacted and shall not be subject to any liquidated damages and/or other delay damages on account of thereof.

32.8 Upon termination of this Agreement by Contractor pursuant to **Article 32.7**:

- (a) Contractor shall promptly:
 - (i) cease all further Work, except for such work as may have been instructed by Engineer for the protection of life or property or for the safety of the Work;
 - (ii) deliver to Engineer Contractor's documents, plant, materials and other work, for which the Contractor has received payment; and
 - (iii) remove all Contractor's Items from the Site, except as necessary for safety; and
 - (iv) demobilize from the Site.
- (b) Company shall promptly:
 - (i) return the Letter of Credit to Contractor; and
 - (ii) pay Contractor in accordance with **Article 32.7**.

CM TJ

ARTICLE 33
BANKRUPTCY, INSOLVENCY AND RECEIVERSHIP

- 33.1 Company shall have the right, without limiting any of its other rights or remedies, to terminate this Agreement immediately by giving Notice of termination to Contractor if:
- (a) Contractor or its assets becomes the subject of any proceeding (whether initiated by Contractor or another Person) under bankruptcy or insolvency laws, including proceedings under the *Companies' Creditors' Arrangement Act* (Canada), R.S.C. 1985, c. C-36; or
 - (b) Contractor becomes the subject of any proceeding for liquidation, or winding-up (whether initiated by Contractor or another Person); or
 - (c) a receiver or receiver-manager of all or any part of Contractor's assets is appointed by a Court or by any of its creditors; or
 - (d) Contractor commits an act of bankruptcy as defined in the *Bankruptcy and Insolvency Act* (Canada), R.S.C. 1985, c. B-3, or commits any other act or omission which would entitle any of Contractor's creditors to initiate a process or proceeding to take possession of any of Contractor's assets or to have any of Contractor's assets distributed among such creditors.
- 33.2 If this Agreement is terminated by Company under **Article 33.1**, Company shall be entitled to withhold further payments to Contractor and set-off those payments against any amounts which Contractor owes or will owe to Company under this Agreement or any other agreement and Company reserves to itself all other rights, remedies and counterclaims to which it may be entitled hereunder or at law or equity.

ARTICLE 34
SUSPENSION

- 34.1 Company may at any time during the Term, at Company's sole discretion for any reason, suspend performance of the Work, or any part thereof, by giving Notice to Contractor (such period of suspension hereinafter "**Suspension Period**"). The Work shall be resumed by Contractor on a date as may be specified by Company in a Notice to Contractor. During the Suspension Period, Contractor shall properly protect and secure the Work as Approved in advance by Company.
- 34.2 Subject to **Article 34.3** and **Article 34.4**, Company shall reimburse Contractor its reasonable expenses (which Contractor shall use its best efforts to mitigate) incurred in compliance with any suspension order and associated reinstatement order, which reasonable expenses shall include demobilization/remobilization costs, costs for suspension or termination of Subcontracts, site maintenance, and costs for retaining the employment of personnel and Subcontractors which cannot otherwise be utilized during the duration of the Suspension Period (the "**Suspension Expenses**"). Additionally, should the Suspension Period cause a reprioritization of the manufacturing queue for any Work in progress at the commencement

- of the Suspension Period, the Parties shall meet to discuss the actions to be taken with regard to such Work in progress. Should Company decide to suspend such Work in progress, payment for the completed portion of the Work in progress shall immediately become due and costs for removing and reinserting such Work shall be considered a Suspension Expense. In no event shall Contractor be entitled to any compensation for items covered in **Article 21.12** that may have resulted from such suspension or reinstatement order.
- 34.3 Company shall have the right to suspend performance of the Work for as long as necessary to prevent or stop any contravention of **Article 15**. During such period of suspension, no Suspension Expenses shall be payable to Contractor by Company.
- 34.4 In case of suspension due to Contractor's failure to perform the Work in accordance with **Article 3**, Contractor shall not be entitled to Suspension Expenses incurred from the moment the Notice of suspension was given until a reinstatement order (if any) is given by Company but shall remain liable, without prejudice to Company's other rights under this Agreement.
- 34.5 Contractor shall take reasonable steps to cause all terms of this **Article 34** to be inserted in all Subcontracts so that Company and Contractor shall have the rights herein set forth with respect to all Subcontractors.
- 34.6 In the event of a suspension pursuant to this **Article 34** that is not attributable to any act or omission by Contractor Group, Contractor shall be entitled to a reasonable adjustment to the Milestone Schedule with respect to any Milestone impacted by the suspension. Contractor shall submit a Change Request to Engineer for an adjustment to the Milestone Schedule within a reasonable time of the end of Suspension Period; upon receipt of the Change Request, Engineer shall determine the reasonable adjustment to be made to the Milestone Schedule and Company shall issue a Change Order for such adjustment.
- 34.7 Contractor shall have the right to suspend performance of the Work in the event:
- (a) Contractor gives Notice that Company has failed to perform Company's material obligations under the Agreement relating to compensation, access to the Site or obtaining the permits, licenses or authorizations, availability of power to commence dynamic/system commissioning, or any other obligations pursuant to **Article 10.3**; and
 - (b) Company is unable to cure and has failed to commence to cure such failure within ten (10) Business Days.
- 34.8 In such event of a suspension pursuant to **Article 34.7**, the Milestone Schedule shall be extended for a period equivalent to the length of such suspension, and all connected Suspension Expenses incurred by Contractor Group as a result of such suspension shall be reimbursed by Company against presentation of Contractor's invoice and supporting evidence, and the invoice shall be processed for payment in accordance with **Article 12**. If the Suspension Period has exceeded ninety (90) consecutive days, Contractor shall not be

obliged to re-commence the Work until it has received payment for the Suspension Expenses.

**ARTICLE 35
LABOUR RELATIONS**

- 35.1 Contractor acknowledges that some or all of Company's Other Contractors and their Subcontractors at a Worksite may be union or non-union and that Company requires Contractor to ensure that labour peace shall be maintained. Contractor shall take all necessary precautions to avoid labour disputes and to minimize the disruption in the event of any dispute.
- 35.2 Contractor represents and warrants that no collective or other agreement with its Personnel or between its Subcontractors and their workers, and no expiry or termination of any such agreement, will adversely affect labour peace at the Worksites or delay Contractor's performance of the Work.
- 35.3 Contractor represents and warrants that it and its Subcontractors shall, as of the date of the commencement of the Work at the Site (if no Special Project Order is declared under the *Labour Relations Act* of Newfoundland and Labrador in respect of the Site by such date), if unionized, have written agreements with the unions representing the workers employed by them that include provisions that non-affiliation rights in any collective agreement or pursuant to any statutory right will not be exercised in connection with the Work. Any and all such agreements shall be submitted to Engineer within five (5) Business Days of the Execution Date or of the date an agreement comes into effect.
- 35.4 Whenever Contractor has knowledge that any actual or potential labour dispute is delaying or threatening to delay the schedule and performance of the Work, Contractor shall immediately advise Engineer in writing, including all relevant information with respect to such dispute or potential dispute and potential impact on the schedule and performance of the Work.
- 35.5 Without restricting the generality of Company's right to terminate the Agreement, Company may, but is not obligated to, give Notice to Contractor requiring Contractor to terminate any Subcontract by giving five (5) days notice to the Subcontractor if:
- (a) the workers of the Subcontractor, or anyone employed by or through the Subcontractor:
 - (i) declare or engage in a strike, a work stoppage or a refusal to supply material; or
 - (ii) engage in a slowdown or other concerted activity which restricts or limits or, is likely to restrict or limit, the progress or performance of the Work; or

- (iii) picket or cause picketing to occur or support picketing by the refusal to Work, or continue to Work at or in the Worksites whether in support of lawful strike or for any other reason; or
 - (iv) does not comply with **Article 8**.
- (b) the Subcontractor, or anyone engaged by or through the Subcontractor, imposes a lockout, lawful or unlawful, against their workers engaged in performing the Work.
- 35.6 Contractor shall ensure that all Subcontracts allow termination in each of the events set out in **Article 35.5**.
- 35.7 The sole cost and expense of preventing, avoiding or removing any of the matters or events giving rise to a labour disruption shall be borne by Contractor, who shall prevent, avoid and remove any and all such labour disruptions within five (5) days of the commencement of such disruptions, including making any necessary applications for injunctive or other relief to the Court.
- 35.8 Except for strikes, labour disputes or industrial disputes referenced in **Article 31.1(c)**, delays in the performance of the Work as a result of any strike, industrial dispute, labour disruption or labour dispute are to be considered as a delay attributable to Contractor, and for which Contractor shall not be entitled to compensation or an extension to the date for completion of a Milestone.

ARTICLE 36 LIQUIDATED DAMAGES

- 36.1 For each Milestone specified in Exhibit 2 – Compensation as being subject to liquidated damages, if Contractor fails to Deliver that part of the Work to achieve the Milestone by the date specified, Contractor shall pay Company as liquidated damages the full amount stipulated in Exhibit 2 – Compensation for each day, including any part thereof, of the delay of that Milestone, from the date the delay commenced to the date the Milestone is achieved, unless the failure to achieve the Milestone is due to an event of Force Majeure.
- 36.2 Contractor's limit of liability for liquidated damages payable by Contractor to Company pursuant to this **Article 36** shall be a maximum of fifteen percent (15%) of the Contract Price.
- 36.3 The Parties agree that the liquidated damages determined in accordance with this **Article 36** are genuine pre-estimates of the damages that Company would incur as a result of Contractor's breach of contract for failure to complete the relevant portion of the Work on the dates specified in the Milestone Schedule. The Parties agree that the liquidated damages set out in this **Article 36** are not intended and shall not be deemed to be penalties.
- 36.4 Contractor agrees that it will not challenge the validity of any remedies provided by this **Article 36** in any legal proceedings or otherwise claim or assert that any such remedies are invalid or unenforceable. Contractor agrees that Company may plead this **Article 36** in any



legal proceedings as an estoppel and complete answer in defence to any challenge, claim or assertion.

- 36.5 Company shall have the right to payment by Contractor of liquidated damages from time to time by giving Notice to Contractor. Any such Notice shall specify the amount of such damages and Contractor shall pay the amount so specified within ten (10) Business Days of the date of such Notice. Failure by Company to give Contractor a Notice shall not constitute a waiver of Company's right to claim all liquidated damages under this **Article 36**.
- 36.6 Company has the right to set off any amount of liquidated damages, plus interest determined in accordance with **Article 12.20**, owed by Contractor to Company against any amount due or to become due from Company to Contractor under the Agreement.

ARTICLE 37

CONTRACTOR'S REPRESENTATIONS, WARRANTIES AND COVENANTS

- 37.1 Contractor represents and warrants that during the Term:
- (a) it has the required skills, experience, facilities, equipment and capacity to perform the Work in a timely manner and in accordance with the terms of this Agreement, Applicable Laws, the Standard of a Prudent Contractor and Good Utility Practice;
 - (b) all Contractor's Personnel involved in carrying out any of the Work have the qualifications, training and experience, and hold such valid licences and certificates of competence, as are required to carry out their duties in relation to the Work (including visas and work permits);
 - (c) **Article 15** and Exhibit 5 – Health and Safety Requirements are satisfied; and
 - (d) the making and performance of this Agreement are within its powers, have been duly authorized by all necessary action and do not and will not violate any Applicable Law or any provision of its governing documents.
- 37.2 Contractor covenants that during the Term it shall:
- (a) perform the Work in a diligent, safe, efficient and timely manner and in accordance with the Standard of a Prudent Contractor;
 - (b) perform the Work continuously and in accordance with this Agreement, using only Subcontractors Approved by Company and Contractor's Personnel;
 - (c) use quality assurance programs in performing the Work which comply with the requirements of Exhibit 7 – Quality Requirements, all Applicable Laws and industry accepted practices;
 - (d) schedule all long lead time equipment or products for manufacture at the earliest possible date;

- (e) not displace or set back in a manufacturing queue or production schedule the equipment or product to be manufactured for the Work in favour of another customer or client of Contractor if such displacement or set back would have an adverse impact on Contractor's ability to complete the Work by the date for Substantial Completion in the Milestone schedule, but otherwise Contractor may manage its manufacturing queue and production schedule as it deems appropriate;
- (f) supply materials, equipment and products for installation into the Work that are new and meet or exceed the standards specified in this Agreement;
- (g) maintain, at its sole risk, cost and expense, all Contractor's Items throughout the Term;
- (h) comply with, and ensure Contractor's Personnel and Subcontractors comply with, all health and safety requirements set out in Exhibit 5 – Health and Safety Requirements and Applicable Laws;
- (i) comply with, and ensure Contractor's Personnel and Subcontractors comply with, all environment and regulatory requirements set out in Exhibit 6 – Environmental and Regulatory Compliance Requirements and Applicable Laws;
- (j) take all steps necessary to maintain good labour relations with Contractor's Personnel to the extent that such requirement is consistent with sound business practice;
- (k) comply, on a timely basis, with all instructions of Company consistent with the provisions of this Agreement, including health, safety and environmental instructions;
- (l) provide such reports, records, and other information relating to the performance of the Work as Company may request from time to time, including copies of the qualifications and credentials of Contractor's Personnel and Subcontractors and information relating to quality assurance programs, and permit Company to inspect Contractor's Items and Worksites, to enable Company to satisfy itself that Contractor is complying with the terms of this Agreement;
- (m) assist Company and provide necessary information and documents, at Company's cost, to support Company in obtaining for the benefit of Company all available exemptions and/or refunds from Taxes; and
- (n) implement and maintain a cost effectiveness program ensuring all techniques proposed for the performance of the Work are or have been reviewed to ensure that they are cost effective.

37.3 Contractor warrants and acknowledges that it has reviewed and understands the Applicable Laws and Lower Churchill Construction Projects Benefits Strategy governing the use of personnel, goods and services in the Work. Contractor shall, throughout the Term, take



such action as Company may specify to enable Company to comply with all Applicable Laws regarding the use of Canadian and Newfoundland and Labrador personnel, goods and services, including any Newfoundland and Labrador Benefits requirements and those requirements set forth in Exhibit 13 - Provincial Benefits of this Agreement. Where Contractor is permitted to subcontract, Contractor shall ensure that Subcontractors comply with such requirements. In addition, Contractor shall provide reports in the manner and format described in Exhibit 13 - Provincial Benefits of this Agreement throughout the term of this Agreement.

- 37.4 Contractor warrants and acknowledges that, except for the Technical Specifications, any information provided by Company or Engineer prior to or after execution of this Agreement, including any and all reports, data, interpretations, recommendations and information, was prepared solely for the purpose of study to consider the general feasibility of the Work and not for the purpose of design, manufacture or installation. Company does not warrant and is not liable for the accuracy, sufficiency, adequacy, completeness or content of any such information or any information subsequently supplied by Company or by Engineer, all of which has been provided to Contractor for general information only and on the condition that such information shall not be relied on by Contractor except to the extent that Contractor has either fully satisfied itself as to its sufficiency and accuracy or has fully accepted all risks and contingencies associated with such information. Any new or additional technical information provided to Contractor by Company or Engineer during the execution of the Work shall be provided by Company or Engineer, as the case may be, in the form of a Change Order to the Technical Specifications.
- 37.5 Contractor shall, maintain, at its sole risk, cost and expense, all Contractor's Items throughout the Term in the manner necessary to ensure that the warranties and covenants in **Article 37.1** and **Article 37.2** shall be true and accurate at all times during the Term. If any of Contractor's Items do not at any time conform to the warranties and covenants given in **Article 37.1** and **Article 37.2**, Contractor shall, at Contractor's sole expense, repair such Contractor's Items or replace with items which conform in all respects to such representations and warranties.
- 37.6 Contractor agrees that all of its representations, warranties and covenants contained in this Agreement are and shall be deemed to be material and shall be conditions of this Agreement.

ARTICLE 38
ENTIRETY OF AGREEMENT, NON WAIVER

- 38.1 This Agreement, as executed by authorized representatives of Company and Contractor, constitutes the entire agreement between the Parties with respect to the matters dealt with herein. This Agreement replaces and supersedes all prior agreements, documents, writings and verbal understandings between the Parties in respect of the Work and there are no oral or written understandings, representations or commitments of any kind, express or implied, which are not expressly set forth herein.

- 38.2 No modification of this Agreement by Contractor or Company, either before or after the execution of this Agreement, shall be of any force or effect unless such modification is in writing, is expressly stated to be a modification of this Agreement and is signed by duly authorized representatives of each of the Parties, with the exception of the following Exhibits where changes to same may be issued solely by Company:
- (a) Exhibit 5 – Health and Safety Requirements;
 - (b) Exhibit 6 – Environmental and Regulatory Compliance Requirements;
 - (c) Exhibit 10 – Declaration of Residency;
 - (d) Exhibit 11 – Company Supplied Documents;
 - (e) Exhibit 12 – Site Conditions;
 - (f) Exhibit 13 – Provincial Benefits.
- 38.3 No waiver of any provision of this Agreement shall be of any force unless such waiver is in writing, is expressly stated to be a waiver of a specified provision of this Agreement and is signed by the Party to be bound thereby. A Party's waiver of any breach of, or failure to enforce, any of the covenants, conditions or other provisions of this Agreement, at any time, shall not in any way affect or limit that Party's right thereafter to enforce or compel strict compliance with every covenant, condition or other provision hereof.
- 38.4 Each of the Parties shall, from time to time, at its own cost and expense, execute or cause to be executed all such further documentation and do or cause to be done all things which are necessary to give effect to the provisions of this Agreement.

ARTICLE 39 DISPUTE RESOLUTION

- 39.1 If any dispute, controversy, claim, question or difference of opinion arises between the Parties under this Agreement including an interpretation, enforceability, performance, breach, termination or validity of this Agreement ("**Dispute**"), the Party raising the Dispute shall give Notice to the other Party in writing within thirty (30) days of the Dispute arising, and such Notice shall provide all relevant particulars of the Dispute.
- 39.2 Upon issuance of Notice of the Dispute, the Parties shall, acting in good faith and a commercially reasonable manner, attempt to resolve the Dispute in the following manner:
- (a) Within fifteen (15) days of the Notice, the senior project managers for each of Company and Contractor shall meet to attempt to resolve the Dispute;
 - (b) If not resolved by senior project managers, the project sponsors or representative Vice Presidents for each of Company and Contractor will meet within thirty (30) days following the meeting of the project managers to attempt to resolve the Dispute; and

- (c) If not resolved by project sponsors or representative Vice Presidents, the Chief Executive Officers for each of Company and Contractor will meet within thirty (30) days following the meeting of the project sponsors or representative Vice Presidents to attempt to resolve the Dispute.
- 39.3 If the Dispute is not resolved by the Parties within ninety (90) days from the date of delivery of the Notice of Dispute then a Party may by Notice to the other Party require the Dispute to be resolved by binding arbitration in accordance with Exhibit 15 - Rules for Arbitration.
- 39.4 Except where Company or Contractor has terminated this Agreement in accordance with **Article 32** or Company has terminated this Agreement in accordance with **Article 33** and notwithstanding the existence of a Dispute and the referral of the Dispute to the resolution procedures in this **Article 39**, Company and Contractor shall, to the extent reasonably possible, continue to perform their obligations under this Agreement without interruption or delay. The continuation of such performance shall in no way amount to a waiver of, or in any way prejudice, the position that is taken by the Parties in the Dispute. There shall be no extension to the date for completion of a Milestone by reason that a Dispute has been referred to the dispute resolution process in this **Article 39**.

ARTICLE 40 NOTICES

- 40.1 Unless otherwise specified in the Agreement, any Notice given or made pursuant to the Agreement shall:
- (a) be in writing;
 - (b) be marked to the attention of Contractor Representative, in the case of Contractor, or to Company Representative, in the case of Company;
 - (c) where given by Company, be signed or authorized by either Company Representative, an officer, a director or company secretary of Company, or a duly authorized representative of Company;
 - (d) where given by Contractor, be signed or authorized by either Contractor Representative, an officer, a director or company secretary of Contractor, or a duly authorized representative of Contractor;
 - (e) be delivered by prepaid post, by hand, by Aconex or by facsimile to the Party to whom the Notice is addressed at its address specified in **Article 40.3** or such other address as that Party may have notified to the other Party; and
 - (f) be deemed to have been delivered to both Labrador Transmission Corporation and Labrador-Island Link Limited Partnership when delivered to Company in accordance with **Article 40.3**.
- 40.2 A Notice will be taken to be duly given:

- (a) in the case of delivery by hand, when delivered;
- (b) in the case of delivery by post, five (5) Business Days after the date of posting (if posted to an address in the same country) or twenty (20) Business Days after the date of posting (if posted to an address in another country);
- (c) in the case of delivery by facsimile, on receipt by the sender of a transmission control report from the sending machine showing the relevant number of pages and the correct destination facsimile machine number or name of the recipient and indicating that the transmission has been made without error;
- (d) in the case of delivery by Aconex, at the time and date recorded by Aconex for delivery to the recipient.

40.3 Any Notice given or made under the Agreement shall be delivered to the intended recipient by hand, post, Aconex or facsimile to the address or facsimile number below or the address or facsimile number last notified by the intended recipient to the sender pursuant to **Article 40.7**:

- (a) to Company:

Labrador Transmission Corporation and
Labrador-Island Link Limited Partnership
Re: Lower Churchill Project
350 Torbay Road Plaza, Suite No. 2
St. John's, NL
Canada A1A 4E1

Attention: Darren DeBourke, Project Manager, HVdc Specialties
Facsimile No.: 1 709 754-0787
E-mail: darrendebourke@lowerchurchillproject.ca

- (b) to Contractor:

Alstom Grid Canada, Inc.
1400, rue Industrielle, Suite 100
La Prairie, QC
Canada J5R 2E5

Attention: Denis Jaze, Project Director
Facsimile No.: 1 450 659-3371
E-mail: denis.jaze@alstom.com

With a copy to:

Alstom Grid Canada, Inc.
Ingrid Lehnert, Vice President & General Counsel, NAM Region



2 International Plaza Drive, Suite 325
Philadelphia, PA 19348 USA
Facsimile No.: 1 610 362-2075
E-mail: Ingrid.lehnert@alstom.com

- 40.4 Except where Notice is given using Aconex in accordance with **Articles 40.2** and **40.3**, if the Parties use any other form of electronic mail for day to day communication but electronic mail shall not be used for and will not constitute Notice under the Agreement where the Agreement expressly requires that a Notice be given.
- 40.5 Any technical communications pertaining to the Work shall be between Engineer and Contractor Representative. Engineer shall, subject to the terms of this Agreement, be authorized to act on behalf of Company in all technical matters concerning the Work but not to commit or bind Company to a Change or an amendment of the Agreement.
- 40.6 Except where expressly provided otherwise in the Agreement, verbal communications will not constitute formal communication or Notice under the Agreement and neither Party has any obligation to act on any verbal communication or instruction unless and until it is confirmed in writing. Any action taken by a Party based on verbal communications, instructions or assurances will be at that Party's sole risk and will be without liability to or recourse against the other Party.
- 40.7 A Party may, from time to time, give Notice to the other Party of any change to its address or facsimile number.

ARTICLE 41 LIENS AND CLAIMS

- 41.1 Without prejudice to the provisions of this **Article 41** and to the extent arising from the Work, Contractor shall prevent the imposition of any liens, claims, encumbrances or attachments by or on behalf of any third party against the Work, and Company property wherever located, or any portion thereof and any liens or attachments which nevertheless are imposed shall be promptly vacated and removed from title by Contractor, at Contractor's sole cost, and Contractor shall defend, indemnify, defend and hold Company Group harmless from and against the same.
- 41.2 Contractor shall defend, indemnify and hold Company Group harmless from and against, and shall keep Company's property, Worksites and Work thereon free and clear of all liens, charges, claims, assessments, fines and levies suffered, created, or committed by Contractor Group and their vendors and suppliers, save only liens or encumbrances created with the prior written consent of Company voluntarily in favour of financial organizations in connection with Contractor's obtaining reasonable, prudent and necessary financing.
- 41.3 Notwithstanding the efforts of Contractor hereunder, if Company suffers costs or expenses or becomes liable for payment as a result of the imposition of such liens or attachments, then without prejudice to any other rights or remedies available to Company, Company

shall have the right to withhold and set off an amount equal to any such costs, expenses or payments incurred or made by Company from any payments due to Contractor hereunder.

ARTICLE 42
ENUREMENT, TIME, SURVIVAL OF PROVISIONS

- 42.1 This Agreement shall be binding upon the Parties, their permitted assignees and successors.
- 42.2 Time is of the essence with respect to the Milestone Schedule.
- 42.3 The following provisions of this Agreement shall survive the termination or expiration of this Agreement and remain in full force and effect: **Articles 1.18, 1.19, 3.5, 5.1, 21.12, 21.4(j), 6.7, 7.1, 7.2, 10.8, Article 12, Article 13, Article 14, Article 17, Article 21, Article 23, Article 24, Article 27, Article 28** (for a period of seven (7) years following the date of Substantial Completion), **Article 29, Article 32, and Article 41.**

ARTICLE 43
COUNTERPARTS

- 43.1 This Agreement may be executed in any number of counterparts and any Party may transmit by facsimile or email in portable document format to the other Party a copy of this Agreement executed by that Party, the receipt of which shall have the same force and effect as if the original thereof had in fact been delivered at the same time.
- 43.2 Any original, facsimile copy, portable document format or photocopy of this Agreement bearing one or more signatures on behalf of a Party shall be admissible against that Party in any legal proceeding as evidence of the execution and delivery of this Agreement by that Party and without the requirement to produce an executed original of the Agreement.
- 43.3 Each person signing the Agreement as an authorized representative of a Party hereby represents and warrants that he or she is duly authorized to sign the Agreement for that Party and that the Agreement will, upon having been so executed, be binding on that Party in accordance with its terms.

ARTICLE 44
COST REDUCTION PROPOSALS

- 44.1 Contractor may at any time submit to Company a cost reduction proposal to Company for Approval. Contractor shall base any such proposal on a study indicating that such proposal:
- (a) will not impair any function or characteristic of the Work, including safety, service life, performance, reliability, economy of operation, ease of maintenance and necessary standardised features; and
 - (b) will not require a significant extension of the dates in the Schedule.



- 44.2 Company may, at its sole discretion, accept or reject, in whole or in part, any proposal submitted under this **Article 44**. To the extent to which Company Approves such a proposal, the Parties will calculate the net cost savings arising in respect of such proposal. After the Parties agree on such net amount of savings, the Parties will execute an amendment to this Agreement reducing the Contract Price by 50% of such net amount of savings and making all other necessary changes to this Agreement.
- 44.3 Company will not be liable for any delay in acting on, or for failure to act on, any proposal submitted under this **Article 44**. The decision by Company to accept or reject, in whole or in part, any such proposal will not in itself affect any rights or obligations of the Parties under this Agreement except to the extent set out in an amendment pursuant to **Article 44.2**.

CM
TJ

EXECUTED AS AN AGREEMENT on the 7th day of November 2014:

For and on behalf of **LABRADOR TRANSMISSION CORPORATION**

Gilbert Bennett

Signature of Authorized Representative

Gilbert Bennett, P.Eng.
Vice President

Name of Authorized Representative

Edmond Martin

Signature of Authorized Representative

Edmond Martin
President and CEO

Name of Authorized Representative

For and on behalf of **LABRADOR-ISLAND LINK LIMITED PARTNERSHIP** represented by its general partner, Labrador-Island Link General Partner Corporation

Gilbert Bennett

Signature of Authorized Representative

Gilbert Bennett, P.Eng.
Vice President

Name of Authorized Representative

Edmond Martin

Signature of Authorized Representative

Edmond Martin
President and CEO

Name of Authorized Representative

For and on behalf of **ALSTOM GRID CANADA, INC.**

Claude Manseau

Signature of Authorized Representative

CLAUDE MANSEAU
COMMERCIAL DIRECTOR - SOLUTIONS

Name of Authorized Representative

Signature of Authorized Representative

Name of Authorized Representative

Execution Page to Agreement number CD0502-001 dated the 7th, day of November, 2014 between **LABRADOR TRANSMISSION CORPORATION** and **LABRADOR-ISLAND LINK LIMITED PARTNERSHIP** and **ALSTOM GRID CANADA, INC.**

(17053302.12)

75 CM