Ryder, Wanda

From: ClarenceHewitt@nalcorenergy.com
Sent: June 9, 2011 4:11 PM
To: Husch, John
Cc: St-Jean, Andre; LCP_LCG002@nalcorenergy.com; PF_Document Control - Lower Churchill; GeraldCahill@nalcorenergy.com; JohnSkinner@nalcorenergy.com; Rowe, Philip; Gillis, Jose
Subject: Amendment No. 1 to Agreement LC-G-002 Rec. No. L010-S011-200-170331-00051
Attachments: Amendment No. 1.pdf

Amendment No. 1 to Agreement LC-G-002
[redacted]

John,

Further to our letter no. L010-S011-200-170203-00014, dated 11 April 2011, attached is a copy of Amendment No. 1 to the Agreement, which has been signed on behalf of Nalcor Energy. The Amendment covers the change in housing and utilities allowance for unaccompanied personnel from [redacted] to [redacted] per month, effective 1 April 2011.

Duplicate originals of the Amendment have been prepared and will be forwarded for signature on behalf of SNC-Lavalin Inc. Upon receipt, please sign both documents, return one fully executed original to my attention and retain the second original for your files.

Regards
Clarence

Assignment
Conditions

nalcor energy
LOWER CHURCHILL PROJECT

Clarence Hewitt
Senior Contract Coordinator (Consultant)
Nalcor Energy - Lower Churchill Project
t. 709 737-1385 f. 709 754-0787
e. ClarenceHewitt@nalcorenergy.com
w. nalcorenergy.com
1.888.576.5454

From: Clarence Hewitt/NLHydro
To: klaus.triendl@snclavalin.com
Cc: "Couturier, Francois" <Francois.Couturier@snclavalin.com>, Ron Power/NLHydro@NLHydro, Jason Kean/NLHydro@NLHydro, Pat Hussey/NLHydro@NLHydro, Bob Barnes/NLHydro@NLHydro, David Green/NLHydro@NLHYDRO, "St-Jean, Andre" <Andre.St-Jean@snclavalin.com>
Date: 04/11/2011 01:47 PM
Subject: Re: Monthly Progress Report

Klaus,

Please refer to attached letter regarding the housing allowance.

Regards
Clarence

[attachment "11 Apr 2011 Letter re housing allowance.pdf" deleted by Clarence Hewitt/NLHydro]

nalcor energy
LOWER CHURCHILL PROJECT

Clarence Hewitt
Senior Contract Coordinator (Consultant)
Nalcor Energy - Lower Churchill Project
t. 709 737-1385 f. 709 737-1985
e. ClarenceHewitt@nalcorenergy.com
w. nalcorenergy.com

nalcor energy
LOWER CHURCHILL PROJECT

AMENDING AGREEMENT

THIS AMENDING AGREEMENT NUMBER 1 is made as of the 1st day of April, 2011,

BETWEEN:

NALCOR ENERGY, a body corporate constituted pursuant to the Energy Corporation Act, S.N. 2007, c. E-11.01 and having its head office at the City of St. John's, Province of Newfoundland and Labrador, (hereinafter referred to as "**Company**") of the first part,

- and -

SNC-LAVALIN INC., a body incorporated under the laws of Canada and having its head office in the City of Montreal, Province of Quebec (hereinafter referred to as "**Consultant**") of the second part.

WHEREAS an Agreement Number LC-G-002 entitled Engineering, Procurement and Construction Management (EPCM) Services (hereinafter called the "Agreement") dated 1st day of February, 2011 was entered into between Company and Consultant;

AND WHEREAS the parties wish to amend the Agreement as hereinafter set forth in this Amending Agreement.

NOW THEREFORE THIS AMENDING AGREEMENT WITNESSES that, in consideration of the premises and mutual covenants and agreements hereinafter set forth and contained, the parties hereto agree that the Agreement be amended as follows:

1. In Exhibit 4, Appendix 2, Lower Churchill Project – Assignment Conditions, the Location Allowance for Long-Term Assignment (Greater than 6 Months Duration) is hereby deleted and replaced with the following:

"Monthly allowance to cover living expenses such as furnished accommodations & utilities, local transportation, and subsistence.

[redacted] / month- Unaccompanied
[redacted] / month - Accompanied

Allocation:
Housing & utilities:
[redacted] Unaccompanied / [redacted] Accompanied

Local transportation: [redacted]
Subsistence:
[redacted] Unaccompanied / [redacted] Accompanied

Subject to annual review of local market conditions."

2. In connection with the foregoing, a number of Personnel Assignment Authorization (PAA) forms for Consultant Personnel on unaccompanied status were approved prior to the execution of this Amendment No. 1. The housing & utilities allowances included on those PAAs was [redacted] per month. Effective the date of this Amendment No. 1, such housing and utilities allowances shall be increased to [redacted] per month. PAAs affected by this change are as follows:

Position Number	Name
1900 (5000)	Ian Hendry
2000 (3101)	Francois Couturier
3102	Afzal Hussain
3103	Luc Chausse
3200 (3900)	Andre St-Jean
3202 (3902)	Tarek Haggag
3203	Roger Martel
4010	Guy DeCarie
4050	Gokhan Saltan
4100	Fazal Rahman
4700	Robert Sanlian
4771	Ismael Ochoa
4772	Tayeb Meridji
4G00	Michel Maeyens
4G01	Alvaro Ceballos
4H01	Daniel Damov
4H02	Javier Patarroyo
4R02	Mohamed El-Chehaly
5100	Michelle Landerville
5105	Line Tremblay
5201	Chris Woodmass
6800	Don Mode
6802	Randy Walker

3. This Amending Agreement shall be effective from the date hereof and shall remain in full force and effect from such date.

4. This Amending Agreement is supplementary to the Agreement and is read with and construed in accordance with the Agreement, as if this Amending Agreement and the Agreement, as amended, constitute one (1) agreement.

5. Except as this Amending Agreement otherwise provides, the Agreement is in all respects ratified and confirmed and all terms, provisions and covenants thereof shall remain in full force and effect.

6. This Amending Agreement shall be binding upon and enure to the benefit of each of the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF the Parties hereto have executed and delivered this Amending Agreement as of the day and year first above written.

NALCOR ENERGY

Per: _____

Title: Supply Chain Manager

SNC-LAVALIN INC.

Per: _____

Title: _____

Execution Page to an Amending Agreement between Nalcor Energy and SNC-Lavalin Inc. and dated as of the 1st day of April, 2011.

Nalcor Energy – Lower Churchill Project

nalcor energy
LOWER CHURCHILL PROJECT

system + methods

Coding Standard

LCP-PT-MD-0000-IM-SD-0001-01

Comments: See Attachment 3 for Summary of Changes /Updates	Total number of Pages (Including Cover): 20

B2	17-Nov-11	Issued For Use	N. Collins	D. Green	G. Fleming	R. Power	P. Harrington
B1	01-Apr-11	Issued for Use	K. Greene	D. Green	G. Fleming	R. Power	P. Harrington
Status/ Revision	Date	Reason For Issue	Prepared By	Functional Manager Approval	Project Manager (Marine Crossings) Approval	Project Manager (Generation + Island Link) Approval	Project Director Approval

CONFIDENTIALITY NOTE:	This document contains intellectual property of the Nalcor Energy – Lower Churchill Project and shall not be copied, used or distributed in whole or in part without the prior written consent from the Nalcor Energy – Lower Churchill Project.

Inter-Departmental / Discipline Approval (where required)

Department	Department Manager Approval	Date
Engineering	B. Barnes	7-Nov-2011
Supply Chain	P. Hussey	7 Nov 11
Project ~~Services~~ CONTROLS	~~A. Kean~~	07-NOV-2011
Commercial Services	L. Clarke	09-Nov-11
Information Management Supervisor	V. Stanford	

TABLE of CONTENTS

1.0 Purpose **4**

2.0 Scope **4**

3.0 Definitions **4**

4.0 Abbreviations and Acronyms **5**

5.0 Reference Documents **5**

6.0 Responsibilities **5**

7.0 Specific Field Input Directions **5**

7.1 Document (Unstructured Data) Coding 5
7.1.1 Revision Status Codes 7
7.2 Supplier Coding 8

8.0 Activity Flowchart (Excel Format) **9**

A.1. N/A 9

9.0 Attachments/Appendices **9**

9.1 Attachment 1 – Nalcor Energy – Lower Churchill Project – Coding System for Engineering /Revision Controlled Documents 10
9.2 Attachment 2 – Nalcor Energy – Lower Churchill Project – Coding System for Supplier Documents 15
9.3 Attachment 3 - Summary of the changes from REV. B1 to Rev. B2 20

1.0 Purpose

This document defines the coding formats and associated component codes to be utilized on the Nalcor Energy – Lower Churchill Project. NE-LCP will provide identification of information, activities and asset elements. The intent is to provide coding direction that will facilitate consistent capture, tracking and reporting throughout the life cycle of the asset.

2.0 Scope

The coding described in this document shall apply to all coding of revision controlled documents pertaining to NE-LCP.

3.0 Definitions

Coding Format: A combination of component codes that when logically presented together provide unique identification for a piece of information, an activity or an asset element.

Component Codes: The codes utilized to construct intelligent coding formats.

Engineering/Design Document: Document (including drawings) created to capture the conception, analysis, construction/fabrication, commissioning and/or ongoing maintenance criteria required to build, operate and/or maintain a physical product or electronic system.

Supplier Document: A document created in support of the manufacture preservation, installation, commissioning, operation and ongoing maintenance of purchased equipment.

Contractor Document: Document deliverables resulting from a service related contractual relationship.

Information Set: A named collection of interrelated data grouped together due to commonalities.

Management System Document: Document created to define and/or support a function or process. (Ie. policies, strategies, standards, procedures, etc.) Document belonging to Management System.

Metadata: Electronic properties or attributes used to describe documents or other data.

Originator: The person determining a specific code to be used to uniquely identify a piece of information, activity or asset element.

Originator Code: The organization creating the document to which the code applies.

Revision Controlled Document: A document subject to revision in a "controlled" fashion through a review or approval process.

Structured Data: Information that resides in fixed fields within an electronic environment. The content in the fields of databases and spreadsheets are examples of structured data.

Unstructured Data: Information that is represented as free-form text, image or graphics which can be treated as a unit. A text document or a drawing would be examples of unstructured data.

4.0 Abbreviations and Acronyms

EDMS – Electronic Document Management System
NE-LCP – Nalcor Energy – Lower Churchill Project
WBS – Work Breakdown Structure

5.0 Reference Documents

LCP-PT-MD-0000-PC-LS-0001-01 – Project Work Breakdown Structure and Code of Accounts

6.0 Responsibilities

NE-LCP Information Management Group: As custodians of this document, shall be responsible for coordinating the creation, implementation, maintenance and distribution of this coding standard.

Originator: As the use of this document is mandatory, originators of documents and data are responsible to comply with the coding described for the creation and ongoing maintenance of all information, activities and asset elements.

7.0 Specific Field Input Directions

It is the goal of the NE-LCP to realize efficiencies by having consistent capture, tracking and reporting of project information, activities and asset elements. Standard coding is key to achieving this goal.

All information, activities and asset elements will require project codes that will be captured on documents and/or within electronic systems used to manage the Project.

7.1 Document (Unstructured Data) Coding

Revision controlled documents are dynamic documents (including drawings) which are subject to revision control and that are required to go through a review or approval

process. Revision controlled documents typically include Engineering/Design, Construction, Fabrication, Supplier and Management documentation. (**Note:** Excludes Contractual documentation, which is addressed in Section 7.2.)

Intelligent document numbering is being implemented.

Document Format Sample:

Project Code:	**LCP – Lower Churchill Project**
Originator Code:	**PT – Project Management Team**
Information Sub-Set Codes:	**ED – Engineering Drawing**
Physical Component Codes:	**1111 – Access Roads – Construction/Temporary**
Discipline/Function Codes:	**AR – Architectural**
Information Type Code:	**GA – General Arrangement**
Sequence:	**0001**
Sheet Number:	**01**

Document Number: LCP-PT-ED-1111-AR-GA-0001-01

Note: When document numbers are being listed in a register/spreadsheet type format, dashes are to be used between each component without leaving spaces.

Component Code Descriptions:

Project Number: Three character numeric code, denoting project area to which the document pertains. (Included to provide potential for future use of this document coding structure by other areas of the parent organization and still maintain uniqueness in numbering.) See **Attachment 2** for applicable codes.

Originator Code: Two character alpha code, denoting the specific part of the organization creating the document. It ***does not*** denote responsibility for design. Also, although inclusion of code may not provide full asset life-cycle value for identification purposes, it is included in document number to alleviate potential duplicate numbering across the project's multi-group document creation environment. See **Attachment 2** for applicable codes.

Information Sub-Set: Two character alpha code, denoting the *general* information set to which the document being created belongs. See **Attachment 2** for applicable codes.

Physical Component: Four digit numeric code, denoting the structure/major work component of the asset to which the document relates, based on Work Breakdown Structure (WBS) as captured in project document *MSD-PJ-010, Lower Churchill Project – Project Work Breakdown Structure.* For documents not related to a specific component (such as project management procedures) or for documents which relate to more than one component, use the code "0000". See **Attachment 2** for applicable codes.

Discipline/Function: Two character alpha code, denoting the Engineering Discipline or Project Functional group responsible for the creation of the document and to which the information contained in the document relates. See **Attachment 2** for applicable codes.

Information Type: Two character numeric code, denoting *specific* type of document being created. See **Attachment 2** for applicable codes.

Sequence Number: Four digit numeric code, denoting the sequence number unique to the specific prefixing document code combination. Starts at 001 each time any component of the prefix coding changes. (Assigned by Document Control.)

Sheet Number: Two digit number, starting at 01. Used only for drawings. This will facilitate revision of individual documents without having to revise the associated sheets.

7.1.1 Revision Status Codes

Changes to a revision controlled document must be identified as a revision change. All documents must indicate the purpose for which it was issued, and the number of times it has been issued for that specific purpose.

Each document shall have a two character/digit alpha numeric code, comprised of the status and revision codes, applied to indicate each issue of the document.

Revision Status Code: Single character alpha code indicating the purpose for which the document was issued by the Originator. See table below for details.

Revision Status:
A - IDC - Issued for Review
B - Approved for Use / Implementation
C - Approved for Construction / Fabrication
D - Approved for Design
L - As-built
N - Cancelled
S - Superseded
V - Void

7.2 Supplier Coding

There are a number of contractual type documents. Documents produced as deliverables for a contract will follow the engineering/revision controlled number format.

The contract number will be cross referenced in the EDMS system in the Contract Number attribute ensuring the information is easily identified to a particular Contract or Supplier Package.

Format:

Supplier Document Coding Format Sample:

Project Code:	**MFA – Muskrat Falls**
Originator Code:	**XY – XYZ Inc.**
Information Sub-Set Code:	**SD – Contractor Document**
Physical Component:	**1550 – Buildings – Warehousing**
Discipline/Function Code:	**ST – Structural**
SDRL Code:	**B01 – General Arrangement**
Sequence:	**0001**
Sheet Number:	**01**

Document Number: MFA-XY-SD-1550-ST-B01-0001-01

Note: Although Contractual documents are subject to review and approval, the revision history shall be maintained using an amendment process, thus a status and revision code will not be applied.

8.0 Activity Flowchart (Excel Format)

8.1. N/A

9.0 Attachments/Appendices

9.1 Attachment 1 – Nalcor Energy – Lower Churchill Project – Coding System for Engineering / Revision Controlled Documents (4 pages)

PROJECT CODE	ORIGINATOR CODE	INFORMATION SUB-SET CODE	PHYSICAL COMPONENT CODE	DISCIPLINE/FUNCTION CODE	INFORMATION TYPE CODE	SEQUENCE NUMBER	SHEET NUMBER

PROJECT CODE

LCP	GENERAL
GIL	GENERATION - GULL ISLAND
MFA	GENERATION - MUSKRAT FALLS
ILK	ISLAND LINK
MLK	MARITIME LINK
ETM	EXPORT TRANSMISSION

INFORMATION SUB-SET CODE

ED	ENGINEERING / DESIGN DOCUMENT
MD	MANAGEMENT SYSTEM DOCUMENT
CD	CONTRACTOR DOCUMENT

ORIGINATOR CODES

AB	ABB Grid Systems Consulting
AC	Aconex
AG	Abitibi Geophysics
AH	Andritz Hydro Canada Inc.
AI	Acres International Limited
AM	AMEC Earth & Environmental Ltd.
BA	Bell Allant - XWAVE
BC	Black and Veatch Corporation
BV	Boskalis Offshore BV
CC	C-CORE
CP	Canning & Pitt Associates Ltd.
CR	CRU Strategies
DK	Duerden & Keane Environmental Inc.
EM	Emera
ES	Enfor Consulting Services
FG	Fugro Geosurveys Inc.
FJ	Fugro Jacques Geosurveys Inc. DO NOT USE - USE GEOSURVEYS ONLY
FM	Fasken Martineau Dumoulin
GD	GeoDigital International Inc.
HE	Hatch Energy
HK	Husky Energy
HQ	Hydro-Quebec TransEnergie
IG	Integrated Informatics Inc.
IN	Innu Nation
JA	JASCO Applied Sciences
JW	Jacques Whitford Stantec Limited
LP	Landsvirkjun Power Ltd.
MC	McInnes Cooper Barristers and Solicitors
ME	Mears Canada Corp.
MI	Minaskuat Limited Partnership
NE	Nalcor Energy
NH	Newfoundland and Labrador Hydro
OH	Osler, Hoskin & Harcourt LLP
PA	Provincial Aerospace
PC	PricewaterhouseCoopers LLP - Toronto
PE	Potomac Economics Ltd.
PT	Lower Churchill Project
~~PW~~	~~PricewaterhouseCoopers LLP - Toronto~~ SEE PC
RS	RSW-EDM Joint Venture
SC	Stantec Consulting Ltd.
SE	Siemens Canada Limited
SG	Spatial Energistics
SK	Sikumiut Environmental Management Ltd.
SN	SNC-Lavalin
SR	STRI
ST	Statnett SF
TE	TERA Environmental Consultants
TG	TGS TransGrid Solutions
TM	Teshmont Consultants Inc.
TR	Terrapoint Canada Inc.
TS	Tamarack Geographic Technologies Ltd.
TW	Tideway
VH	Voith Hydro Inc.
VN	Van Ness Feldman
VS	Ventyx Software Inc.
WA	Wolverine & Associates Ltd
WC	Westney Consulting Group Canada

PHYSICAL COMPONENT CODES

0000	NO SPECIFIC COMPONENT
1000	SUPPORT FACILITIES - GENERAL
1010	Office Facilities - Hydro Place
1020	Office Facilities - EPCM & Project
1030	Office Facilities - Other
1100	ACCESS GENERAL
1110	Access Roads
1111	Access Roads - Construction / Temporary
1112	Access - Permanent
1150	Construction Bridge (Including Spillway and Site Access Temp Bridges)
1160	Barge / Ferry Access
1200	OTHER PERMANENT ACCOMMODATION
1210	Permanent Accommodation Building
1220	Heliipad
1300	CONSTRUCTION POWER - GENERAL
1310	Construction Power - Gull Island
1320	Construction Power - Muskrat Falls
1330	Construction Power - Labrador Island Link
1340	Construction Power - Maritime Link
1400	CONSTRUCTION TELECOMMUNICATIONS - GENERAL
1410	Construction Telecommunications - Gull Island
1420	Construction Telecommunications - Muskrat Falls
1430	Construction Telecommunications - Labrador Island Link
1440	Construction Telecommunications - Maritime Link
1500	ACCOMMODATIONS COMPLEX
1510	General Site
1511	Recreational Areas
1512	Other Specialties
1520	Buildings - Central Core
1530	Buildings - Dormitories
1540	Buildings - Administration Buildings and Workshops
1550	Buildings - Warehousing
1560	Buildings - Other
1570	Site Services
1700	Housing Facilities
1710	Happy Valley - Goose Bay Housing Facilities
1800	Offsite Logistics, Infrastructure and Support - General
1810	Offsite Marshalling Areas and Warehousing
1820	Offsite Port Facilities
1830	Offsite Roads and Bridges
2000	Reservoir, Diversion, Dam and Spillway - General
2100	Reservoir - General
2110	Reservoir
2120	Water Sampling Stations
2130	Trash Management System (Including Log Booms)
2140	Reservoir Stabilization
2150	Water Management System
2200	Diversion Tunnels - General
2210	Diversion Tunnels
2290	Diversion Tunnels - Flow Compensation Facility
2300	Dams and Cofferdams - General
2310	Gull Island Main Dam - General
2312	Foundations/Diaphragm Wall
2313	Dam Embankment
2314	Face Slab & Plinth - General
2320	North Dam
2330	South Dam
2340	Cofferdam
2341	Upstream Cofferdam
2342	Downstream Cofferdam
2343	Riverside Cofferdam
2360	Transition Structures
2361	North Transition Structure
2362	Center Transition Structure
2363	South Transition Structure
2370	Dams/Cofferdams Auxiliary Services

DISCIPLINE/FUNCTION CODES

AB	ABORIGINAL AFFAIRS
AD	ADMINISTRATION
AM	ASSET MANAGEMENT
AR	ARCHITECTURAL
CA	CONTRACT ADMINISTRATION
CM	COMMISSIONING
CO	COMMUNICATIONS
CS	CONSTRUCTION
CT	CERTIFICATION
CV	CIVIL (Including - Hydraulics)
DR	DRILLING
EA	ENVIRONMENTAL ASSESSMENT
EL	ELECTRICAL
EN	ENGINEERING (GENERAL)
EP	ESTIMATING & PLANNING
EV	ENVIRONMENT
FI	FINANCE AND ACCOUNTING
GT	GEOTECHNICAL
HR	HUMAN RESOURCES
HS	HEALTH, SAFETY & SECURITY
IB	INDUSTRIAL BENEFITS
IE	INVESTMENT EVALUATION
IM	INFORMATION MANAGEMENT
IN	INSPECTION
IS	INFORMATION SERVICES
LC	LOSS CONTROL
LE	LEGAL
LR	LABOUR RELATIONS
MA	MARKET ACCESS
ME	MECHANICAL Including - HVAC, Piping & Hydraulics
MM	MATERIALS MANAGEMENT
MR	MARINE
MT	MAINTENANCE
OP	OPERATIONS
PC	PROJECT CONTROLS
PI	PIPING
PM	PROJECT MANAGEMENT
PO	PROCUREMENT
PP	PROPERTIES
PR	PUBLIC RELATIONS
PS	POWER SALES
PT	PROTECTION AND CONTROL
QA	QUALITY ASSURANCE
QC	QUALITY CONTROL
QM	QUALITY MANAGEMENT
RI	RISK MANAGEMENT
RT	REGULATORY
SC	SUPPLY CHAIN
SM	STAKEHOLDER MANAGEMENT
ST	STRUCTURAL
TE	TELECOMMUNICATIONS
TL	TRANSMISSION
TM	TRASH MANAGEMENT
TR	TRAINING
TS	TREASURY
SS	SUBSEA
SU	SUB SURFACE

INFORMATION TYPE CODE

AP	APPLICATION
BD	BLOCK DIAGRAM
BM	BILL OF MATERIALS
BT	BUDGET
CA	CALCULATION
CH	CHARTER
CR	CHART
DB	DESIGN BRIEF
DC	DESIGN CRITERIA
DD	DETAIL DRAWING
DR	DISTRIBUTION BOARD SCHEDULE
DS	DATA SET
DT	DATASHEET
EL	ELEVATION
EQ	EQUIPMENT LAYOUT
ES	ESTIMATE
FR	FORM
GA	GENERAL ARRANGEMENT
HD	HOOK-UP DRAWING
IR	INFORMATION REQUEST
IS	ISOMETRIC DRAWING
LD	LOGIC AND SEQUENCE DIAGRAM
LT	LAYOUT
LS	LIST
MN	MANUAL
MP	MAP
MS	MSDS
MT	MATERIAL TAKE OFF (MTO)
PF	PROFILE
PH	PHILOSOPHY
PL	PLAN
PN	PRESERVATION AND STORAGE NOTES
PR	PROCEDURE
PY	POLICY
RG	REGISTER
RL	REINFORCING STEEL (REBAR) LIST
RP	REPORT
RT	RACKING/TRAY LAYOUTS
SA	SPATIAL DATA
SC	SCHEMATIC DIAGRAM
SD	STANDARD
SE	SECTION
SH	SCHEDULE
SL	SINGLE LINE DIAGRAM
SM	SYSTEM DIAGRAM
SN	SECTION AND DETAIL
SP	SPECIFICATION
ST	STRATEGY
SU	SURVEY
SY	STUDY
TD	TERMINATION DRAWING
TS	TECHNICAL SPECIFICATION
WC	WORK TASK ORDER CLOSEOUT
WI	WORK INSTRUCTION
WP	WORK PACKAGE
WT	WORK TASK ORDER (WTO)

UNIQUE SEQUENCING 4 DIGIT NUMERIC CODE

UNIQUE SEQUENCING 2 DIGITS STARTING WITH 01

PROJECT CODE	ORIGINATOR CODE	INFORMATION SUB-SET CODE	PHYSICAL COMPONENT CODE	DISCIPLINE/FUNCTION CODE	INFORMATION TYPE CODE	SEQUENCE NUMBER	SHEET NUMBER
PROJECT CODE	ORIGINATOR CODES	INFORMATION SUB-SET CODE	PHYSICAL COMPONENT CODES	DISCIPLINE/FUNCTION CODES	INFORMATION TYPE CODE	UNIQUE SEQUENCING 4 DIGIT NUMERIC CODE	UNIQUE SEQUENCING 2 DIGITS STARTING WITH 01

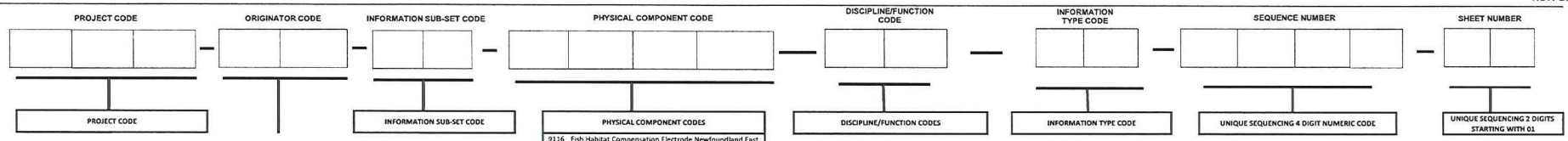
Note: See Page 1 for column headings with no content.

2400	Spillway - General
2410	Spillway Structure
2420	Gates, Guides, Stop Logs and Hoist
2430	Spillway Channels
2440	Spillway Auxiliary Services
2800	North Spur - General
2810	North Spur - Upstream Berm
2820	North Spur - Downstream Stabilization
2830	North Spur - Pump Wells
2840	North Spur - Crest Unloading
2850	North Spur - Kettle Lake Stabilization
3000	Power Facilities
3100	Powerhouse Channels - Including Plugs and/or Cofferdams
3110	Approach Channels
3120	Tailrace
3200	Intake and Penstocks - General
3220	Intake Structure
3240	Intake Gates, Trashracks, Stop Logs & Hoists
3250	Penstocks
3280	Penstocks Construction Adit
3290	Intake Auxiliary Services
3300	Powerhouse
3310	Substructure
3320	Superstructure
3330	Gates, Trashracks, Stop Logs & Hoists
3340	Building Electrical Services
3350	Building Mechanical Services
3360	Powerhouse Crane
3400	Power Generation
3410	Turbine
3411	Governor
3420	Generator
3421	Excitation System
3430	Electrical Ancillary / Auxiliary Systems
3431	DC Power / UPS System
3432	MV Systems (601V - 15kV)
3433	LV Systems (Up to 600V)
3434	Unit Service Transformers
3435	Station Service Transformers
3436	Bus Duct
3437	Diesel Generators
3440	Mechanical Ancillary/Auxiliary Systems
3441	Service Air System
3442	Governor Air System
3443	Fire Protection System
3444	Pump Drainage System
3445	Pump Dewatering System
3446	Hydraulic Oil Handling and Filtration System
3447	Oily Water Interception System
3448	Cooling Water System
3449	Service Water System
3450	Protection, Control and Monitoring
3451	Protection
3452	Control and Monitoring
3460	Generator Transformers
3470	Spare Parts and Special Tools
4000	Switchyards - General
4100	Churchill Falls Extension
4200	Gull Island Switchyard
4300	Muskrat Falls Switchyard
4400	Taylors Brook Switchyard
4500	Soldiers Pond Switchyard
4600	Maritime Switchyard
4700	Bottom Brook Switchyard
4800	Granite Canal Switchyard

PROJECT CODE	ORIGINATOR CODE	INFORMATION SUB-SET CODE	PHYSICAL COMPONENT CODE	DISCIPLINE/FUNCTION CODE	INFORMATION TYPE CODE	SEQUENCE NUMBER	SHEET NUMBER
PROJECT CODE	ORIGINATOR CODES	INFORMATION SUB-SET CODE	PHYSICAL COMPONENT CODES	DISCIPLINE/FUNCTION CODES	INFORMATION TYPE CODE	UNIQUE SEQUENCING 4 DIGIT NUMERIC CODE	UNIQUE SEQUENCING 2 DIGITS STARTING WITH 01

Note: See Page 1 for column headings with no content.

6000	Overland Transmission - General
6100	HVac Overland Transmission
6110	Gull Island to Churchill Falls
6120	Gull Island to PQ Border
6130	Switchyard to Converter Station
6140	Muskrat Falls to Churchill Falls
6150	Maritimes AC Transmission
6160	Collector Lines Powerhouse to Switchyard
6170	Bottom Brook to Granite Canal
6200	HVdc Overland Transmission
6220	Island Overland Transmission
6221	Island Section 1
6222	Island Section 2
6223	Island Section 3
6240	Taylors Brook - Cape Ray
6250	Maritimes DC Transmission
6260	Cape Ray to Bottom Brook
6270	Labrador Overland DC Transmission
6271	Labrador Section 1
6272	Labrador Section 2
6300	Electrode Lines
6310	Electrode Line - Labrador
6320	Electrode Line - Newfoundland East
6330	Electrode Line - Maritimes
6340	Electrode Line - Newfoundland West
7000	System Upgrades - General
7100	Island System Upgrades East
7110	Unit Conversion at Holyrood to Synchronous Condenser
7120	New Synchronous Condensers
7130	Breakers
7200	Island System Upgrades West
7300	Maritimes System Upgrades
7400	Quebec System Upgrades
8000	HVdc Specialties
8100	dc Specialties - Marine Crossings
8110	dc Specialties - Marine Crossings - SOBI - General
8111	SOBI Cable Supply
8113	SOBI Landfall
8114	SOBI Seabed Protection
8120	dc Specialties - Marine Crossings - Cabot Strait - General
8121	Cabot Strait Cable Supply
8123	Cabot Strait Landfall
8124	Cabot Strait Seabed Protection
8200	dc Specialties - Converter Stations
8210	Labrador Converter Station
8220	Soldiers Pond Converter Station
8230	Maritime Converter Station
8240	Newfoundland West Converter Station
8500	dc Specialties - Transition Compounds
8510	Transition Compound - Labrador
8520	Transition Compound - Northern Peninsula
8530	Transition Compound - Newfoundland West
8540	Transition Compound - Maritimes
8600	dc Specialties - Electrodes
8610	Electrode Labrador
8620	Electrode Newfoundland East
8630	Electrode Maritimes
8640	Electrode Newfoundland West
9000	Other Specialties - General
9100	Other Specialties - Habitat Compensation
9110	Fish Habitat Compensation - General
9111	Fish Habitat Compensation Gull Island
9112	Fish Habitat Compensation Muskrat Falls
9113	Fish Habitat Compensation SOBI
9114	Fish Habitat Compensation Cabot Strait
9115	Fish Habitat Compensation Electrode Labrador



PHYSICAL COMPONENT CODES	
9116	Fish Habitat Compensation Electrode Newfoundland East
9117	Fish Habitat Compensation Electrode Maritimes
9118	Fish Habitat Compensation Electrode Newfoundland West
9120	Terrestrial Habitat Compensation - General
9121	Terrestrial Habitat Compensation Gull Island
9122	Terrestrial Habitat Compensation Muskrat Falls
9200	Operations Telecommunications Systems
9210	Operations Telecommunication System - Gull Island
9220	Operations Telecommunication System - Muskrat Falls
9230	Operations Telecommunication System - Island Link
9240	Operations Telecommunication System - Maritime Link

ORIGINATOR CODES

Note: See Page 1 for column headings with no content.

9.2 Attachment 2 – Nalcor Energy – Lower Churchill Project – Coding System for Supplier Documents (4 pages)

PROJECT CODE	ORIGINATOR CODE	INFORMATION SUB-SET CODE	PHYSICAL COMPONENT CODE	DISCIPLINE/FUNCTION CODE	SDRL CODE	SEQUENCE NUMBER	SHEET NUMBER

PROJECT CODE

LCP	GENERAL
GIL	GENERATION - GULL ISLAND
MFA	GENERATION - MUSKRAT FALLS
ILK	ISLAND LINK
MLK	MARITIME LINK
ETM	EXPORT TRANSMISSION

INFORMATION SUB-SET CODE

SD	SUPPLIER DOCUMENT

ORIGINATOR CODES

AB	ABB Grid Systems Consulting
AC	Aconex
AG	Abitibi Geophysics
AH	Andritz Hydro Canada Inc.
AI	Acres International Limited
AM	AMEC Earth & Environmental Ltd.
BA	Bell Aliant - XWAVE
BC	Black and Veatch Corporation
BV	Boskalis Offshore BV
CC	C-CORE
CP	Canning & Pitt Associates Ltd.
CR	CRU Strategies
DK	Duerden & Keane Environmental Inc.
EM	Emera
ES	Enfor Consulting Services
FG	Fugro Geosurveys Inc.
FJ	Fugro Jacques Geosurveys Inc. (DO NOT USE - USE DEFAULT FJS CODE)
FM	Fasken Martineau Dumoulin
GD	GeoDigital International Inc.
HE	Hatch Energy
HK	Husky Energy
HQ	Hydro-Quebec TransEnergie
IG	Integrated Informatics Inc.
IN	Innu Nation
JA	JASCO Applied Sciences
JW	Jacques Whitford Stantec Limited
LP	Landswirkjun Power Ltd.
MC	McInnes Cooper Barristers and Solicitors
ME	Mears Canada Corp.
MI	Minaskuat Limited Partnership
NE	Nalcor Energy
NH	Newfoundland and Labrador Hydro
OH	Osler, Hoskin & Harcourt LLP
PA	Provincial Aerospace
PC	PricewaterhouseCoopers LLP - Toronto
PE	Potomac Economics Ltd.
PT	Lower Churchill Project
~~PW~~	~~PricewaterhouseCoopers LLP - Toronto~~ SEE PC
RS	RSW-EDM Joint Venture
SC	Stantec Consulting Ltd.
SE	Siemens Canada Limited
SG	Spatial Energistics
SK	Sikumiut Environmental Management Ltd.
SN	SNC-Lavalin
SR	STRI
ST	Statnett SF
TE	TERA Environmental Consultants
TG	TGS TransGrid Solutions
TM	Teshmont Consultants Inc.
TR	Terrapoint Canada Inc.
TS	Tamarack Geographic Technologies Ltd.
TW	Tideway
VH	Voith Hydro Inc.
VN	Van Ness Feldman
VS	Ventyx Software Inc.
WA	Wolverine & Associates Ltd
WC	Westney Consulting Group Canada

PHYSICAL COMPONENT CODES

0000	NO SPECIFIC COMPONENT
1000	SUPPORT FACILITIES - GENERAL
1010	Office Facilities - Hydro Place
1020	Office Facilities - EPCM & Project
1030	Office Facilities - Other
1100	ACCESS GENERAL
1110	Access Roads
1111	Access Roads - Construction / Temporary
1112	Access - Permanent
1150	Construction Bridge (Including Spillway and Site Access Temp Bridges)
1160	Barge / Ferry Access
1200	OTHER PERMANENT ACCOMMODATION
1210	Permanent Accommodation Building
1220	Helipad
1300	CONSTRUCTION POWER - GENERAL
1310	Construction Power - Gull Island
1320	Construction Power - Muskrat Falls
1330	Construction Power - Labrador Island Link
1340	Construction Power - Maritime Link
1400	CONSTRUCTION TELECOMMUNICATIONS - GENERAL
1410	Construction Telecommunications - Gull Island
1420	Construction Telecommunications - Muskrat Falls
1430	Construction Telecommunications - Labrador Island Link
1440	Construction Telecommunications - Maritime Link
1500	ACCOMMODATIONS COMPLEX
1510	General Site
1511	Recreational Areas
1512	Other Specialties
1520	Buildings - Central Core
1530	Buildings - Dormitories
1540	Buildings - Administration Buildings and Workshops
1550	Buildings - Warehousing
1560	Buildings - Other
1570	Site Services
1700	Housing Facilities
1710	Happy Valley - Goose Bay Housing Facilities
1800	Offsite Logistics, Infrastructure and Support - General
1810	Offsite Marshalling Areas and Warehousing
1820	Offsite Port Facilities
1830	Offsite Roads and Bridges
2000	Reservoir, Diversion, Dam and Spillway - General
2100	Reservoir - General
2110	Reservoir
2120	Water Sampling Stations
2130	Trash Management System (Including Log Booms)
2140	Reservoir Stabilization
2150	Water Management System
2200	Diversion Tunnels - General
2210	Diversion Tunnels
2290	Diversion Tunnels - Flow Compensation Facility
2300	Dams and Cofferdams - General
2310	Gull Island Main Dam - General
2312	Foundations/Diaphragm Wall
2313	Dam Embankment
2314	Face Slab & Plinth - General
2320	North Dam
2330	South Dam
2340	Cofferdam
2341	Upstream Cofferdam
2342	Downstream Cofferdam
2343	Riverside Cofferdam
2360	Transition Structures
2361	North Transition Structure
2362	Center Transition Structure
2363	South Transition Structure
2370	Dams/Cofferdams Auxiliary Services

DISCIPLINE/FUNCTION CODES

AB	ABORIGINAL AFFAIRS
AD	ADMINISTRATION
AM	ASSET MANAGEMENT
AR	ARCHITECTURAL
CA	CONTRACT ADMINISTRATION
CM	COMMISSIONING
CO	COMMUNICATIONS
CS	CONSTRUCTION
CT	CERTIFICATION
CV	CIVIL (Including - Hydraulics)
DR	DRILLING
EA	ENVIRONMENTAL ASSESSMENT
EL	ELECTRICAL
EN	ENGINEERING (GENERAL)
EP	ESTIMATING & PLANNING
EV	ENVIRONMENT
FI	FINANCE AND ACCOUNTING
GT	GEOTECHNICAL
HR	HUMAN RESOURCES
HS	HEALTH, SAFETY & SECURITY
IB	INDUSTRIAL BENEFITS
IE	INVESTMENT EVALUATION
IM	INFORMATION MANAGEMENT
IN	INSPECTION
IS	INFORMATION SYSTEMS
LC	LOSS CONTROL
LE	LEGAL
LR	LABOUR RELATIONS
MA	MARKET ACCESS
ME	MECHANICAL (Including - HVAC, Piping & Hydraulics
MM	MATERIALS MANAGEMENT
MR	MARINE
MT	MAINTENANCE
OP	OPERATIONS
PC	PROJECT CONTROLS
PI	PIPING
PM	PROJECT MANAGEMENT
PO	PROCUREMENT
PP	PROPERTIES
PR	PUBLIC RELATIONS
PS	POWER SALES
PT	PROTECTION AND CONTROL
QA	QUALITY ASSURANCE
QC	QUALITY CONTROL
QM	QUALITY MANAGEMENT
RI	RISK MANAGEMENT
RT	REGULATORY
SC	SUPPLY CHAIN
SM	STAKEHOLDER MANAGEMENT
ST	STRUCTURAL
TE	TELECOMMUNICATIONS
TL	TRANSMISSION
TM	TRASH MANAGEMENT
TR	TRAINING
TS	TREASURY
SS	SUBSEA
SU	SUB SURFACE

INFORMATION TYPE CODE

A	GENERAL
A01	Supplier Document Register
A02	Baseline Schedule
A03	Monthly Risk Report
A04	Risk Management Plan
A05	Unpriced Copies of Major Sub-Supplier Orders
A06	Monthly Progress Reports
A07	Project Execution Program
A08	Permits
A11	Logistics and Transportation Plan
A12	Installation Instructions Manual
A13	Shipping Bills of Material
A15	Construction Method Statements and Procedures
A22	Survey Reports
A24	3D Models
A27	Environmental Management Plan
A28	Safety and Health Plan, Risk Assessment, Security Plan
A29	Turbine Aeration System Proposal
A30	Turbine Hub Sleeve Blocking Method
A31	Rotor Rim Shrink Fit Design Proposal
A32	Rotor Pole Lamination Design
A33	Upper Bracket Deck Design
B	ARRANGEMENT DRAWINGS
B01	General Arrangements and Layouts
B02	Elevation/Profile Drawings
B03	Cross Section Drawings
B04	Arrangement and Sub Assembly Drawings
B05	Loading Drawings
C	DESIGN & OPERATIONAL DARWINGS
C01	Piping and Instrumentation (P&ID's)
C02	Process Flow Diagrams (PFD)
C03	HVac Schematic and Flow Diagrams
C04	Logic Diagrams
C05	System Schematic Diagrams
C06	Sequential and Control Function Charts
C07	Function Description
D	DETAIL DRAWINGS
D01	Isometrics
D02	Pipe Supports
D03	Equipment Details
D04	Fabrication, Installation and Shop Drawings
D05	Rigging and Lifting Drawings
D06	Foundation Drawings
D07	Equipment Drawings
D08	Shipping Drawings
E	ELECTRICAL/INSTRUMENTATION & INTERCONNECTIONS
E01	Interconnection Block Diagrams
E02	Wiring Diagrams/Schematics
E03	Single Line Diagrams
E04	Control System Network Diagram
E05	Panel and Annunciator Layout Drawings
E06	Panel Details Diagrams
E07	Instrument Hook-up Details
E08	Block Diagrams
E09	Cable Specifications
F	DATASHEETS
F01	Equipment Data Sheet
F02	Motor Data Sheet
F03	Instrument Data Sheet
F04	WHMIS Material Safety Data Sheet (MSDS)
F05	Properties of Materials
F06	Weight Data Sheet
G	SCHEDULE/LISTS
G01	Bill of Materials/Equipment List
G02	Line List
G03	Cable Schedule
G04	Utilities Schedule
G05	Preventative Maintenance Schedule
G06	Instrument Index

UNIQUE SEQUENCING 4 DIGIT NUMERIC CODE

UNIQUE SEQUENCING 2 DIGITS STARTING WITH 01

CIMFP Exhibit P-01437

Page 20

PROJECT CODE	ORIGINATOR CODE	INFORMATION SUB-SET CODE	PHYSICAL COMPONENT CODE	DISCIPLINE/FUNCTION CODE	SDRL CODE	SEQUENCE NUMBER	SHEET NUMBER
PROJECT CODE	ORIGINATOR CODES	INFORMATION SUB-SET CODE	PHYSICAL COMPONENT CODES	DISCIPLINE/FUNCTION CODES	INFORMATION TYPE CODE	UNIQUE SEQUENCING 4 DIGIT NUMERIC CODE	UNIQUE SEQUENCING 2 DIGITS STARTING WITH 01

Note: See Page 1 for column headings with no content.

PHYSICAL COMPONENT CODES

2400 Spillway - General
2410 Spillway Structure
2420 Gates, Guides, Stop Logs and Hoist
2430 Spillway Channels
2440 Spillway Auxiliary Services

2800 North Spur - General
2810 North Spur - Upstream Berm
2820 North Spur - Downstream Stabilization
2830 North Spur - Pump Wells
2840 North Spur - Crest Unloading
2850 North Spur - Kettle Lake Stabilization

3000 Power Facilities

3100 Powerhouse Channels - Including Plugs and/or Cofferdams
3110 Approach Channels
3120 Tailrace

3200 Intake and Penstocks - General
3220 Intake Structure
3240 Intake Gates, Trashracks, Stop Logs & Hoists
3250 Penstocks
3280 Penstocks Construction Adit
3290 Intake Auxiliary Services

3300 Powerhouse
3310 Substructure
3320 Superstructure
3330 Gates, Trashracks, Stop Logs & Hoists
3340 Building Electrical Services
3350 Building Mechanical Services
3360 Powerhouse Crane

3400 Power Generation
3410 Turbine
3411 Governor
3420 Generator
3421 Excitation System
3430 Electrical Ancillary / Auxiliary Systems
3431 DC Power / UPS System
3432 MV Systems (601V - 15kV)
3433 LV Systems (Up to 600V)
3434 Unit Service Transformers
3435 Station Service Transformers
3436 Bus Duct
3437 Diesel Generators
3440 Mechanical Ancillary/Auxiliary Systems
3441 Service Air System
3442 Governor Air System
3443 Fire Protection System
3444 Pump Drainage System
3445 Pump Dewatering System
3446 Hydraulic Oil Handling and Filtration System
3447 Oily Water Interception System
3448 Cooling Water System
3449 Service Water System
3450 Protection, Control and Monitoring
3451 Protection
3452 Control and Monitoring
3460 Generator Transformers
3470 Spare Parts and Special Tools

4000 Switchyards - General

4100 Churchill Falls Extension

4200 Gull Island Switchyard

4300 Muskrat Falls Switchyard

4400 Taylors Brook Switchyard

4500 Soldiers Pond Switchyard

4600 Maritime Switchyard

4700 Bottom Brook Switchyard

INFORMATION TYPE CODE

G07 Alarms and Trip Set Point List
G08 Computer Systems Documentation
G09 Input/Output List

H CALCULATIONS
H01 Architectural Calculation
H02 Foundation Support Calculation
H03 Structural Calculation
H04 Pressure Vessel / Tank Calculation
H05 Heat & Ventilation Calculation
H06 Thrust Bearing Loads and Capability
H07 Lifting Lug Calculation
H08 Instrument Electrical Power Calculation
H09 Instrument Air or Hydraulic Requirements Calc.
H10 Fire Protection Calculation
H11 Enclosure Ventilation Requirements and
H12 Mechanical Calculation - Misc.
H13 Electrical Calculation - Misc.
H14 Civil Calculation - Misc.
H15 Transmission Line Calculation - Misc.
H16 Drainage System Calculation
H17 Dewatering System Calculation
H18 Oil/Water Separator Calculation
H19 High Pressure Piping Calculation
H20 Hydraulic Gates Calculation
H21 Cranes Loading Calculation
H22 Sanitary Drainage Calculation
H23 Compressed Air Calculation
H24 Gate Operating Ring Calculation
H25 Turbine Shaft Calculation
H26 Runner Calculation
H27 Stay Ring Calculation
H28 Wicket Gate Calculation
H29 Shaft Seal Calculation
H30 Head Cover Calculation
H31 Penstock Calculation
H32 Survey Calculation
H33 Reinforced and Prestressed Concrete Calc.
H34 Structure Stability Calculation
H35 Grouting Calculation
H36 Concrete Mix Calculation
H37 Blasting Calculation
H38 Essential Service Load Calculation
H39 Unit Service Load Calculation
H40 AC Station Service Load Calculation
H41 DC Station Service Load Calculation
H42 Primary Grounding Calculation
H43 EMTP Study
H44 Insulation Coordination Study
H45 Exciter Performance & Parameter Study
H46 Governor Performance & Parameter Study
H47 HVdc Scheme RAM Study
H48 Reactive Power Study
H49 Resonance Study
H50 Sub-Synchronous Resonance Study
H51 Relay Setting Calculation
H52 Sag and Tension Calculation
H53 Electrical Clearance Calculation
H54 Design Load Cases
H55 Coordination of Strength Calculation
H56 Aeolian Vibration Calculation
H57 Insulation Requirement Calculation
H58 PLS-CADD Model Input Parameter Calculation
H59 Critical Speed of Rotating System
H60 Acceptable Stress Calculations - Extreme Loads
H61 Extreme Loads - Breaking Point of Shear Pins
H62 Natural Frequency Analysis
H63 Fatigue Analyses
H64 Step-up Calculation Prototype Efficiency
H65 Current Transformers design calculations for knee point

J PERFORMANCE DATA
J01 General Performance Data
J02 Current and Potential (CT/VT) Transformer Curves
J03 Engine Performance Curves

CIMFP Exhibit P-01437

Page 21

PROJECT CODE	ORIGINATOR CODE	INFORMATION SUB-SET CODE	PHYSICAL COMPONENT CODE	DISCIPLINE/FUNCTION CODE	SDRL CODE	SEQUENCE NUMBER	SHEET NUMBER
PROJECT CODE	ORIGINATOR CODES	INFORMATION SUB-SET CODE	PHYSICAL COMPONENT CODES	DISCIPLINE/FUNCTION CODES	INFORMATION TYPE CODE	UNIQUE SEQUENCING 4 DIGIT NUMERIC CODE	UNIQUE SEQUENCING 2 DIGITS STARTING WITH 01

Note: See Page 1 for column headings with no content.

PHYSICAL COMPONENT CODES

4800 Granite Canal Switchyard

6000 Overland Transmission - General

6100 HVac Overland Transmission
6110 Gull Island to Churchill Falls
6120 Gull Island to PQ Border
6130 Switchyard to Converter Station
6140 Muskrat Falls to Churchill Falls
6150 Maritimes AC Transmission
6160 Collector Lines Powerhouse to Switchyard
6170 Bottom Brook to Granite Canal

6200 HVdc Overland Transmission
6220 Island Overland Transmission
6221 Island Section 1
6222 Island Section 2
6223 Island Section 3
6240 Taylors Brook - Cape Ray
6250 Maritimes DC Transmission
6260 Cape Ray to Bottom Brook
6270 Labrador Overland DC Transmission
6271 Labrador Section 1
6272 Labrador Section 2

6300 Electrode Lines
6310 Electrode Line - Labrador
6320 Electrode Line - Newfoundland East
6330 Electrode Line - Maritimes
6340 Electrode Line - Newfoundland West

7000 System Upgrades - General

7100 Island System Upgrades East
7110 Unit Conversion at Holyrood to Synchronous Condenser
7120 New Synchronous Condensers
7130 Breakers

7200 Island System Upgrades West

7300 Maritimes System Upgrades

7400 Quebec System Upgrades

8000 HVdc Specialties

8100 dc Specialties - Marine Crossings
8110 dc Specialties - Marine Crossings - SOBI - General
8111 SOBI Cable Supply
8113 SOBI Landfall
8114 SOBI Seabed Protection
8120 dc Specialties - Marine Crossings - Cabot Strait - General
8121 Cabot Strait Cable Supply
8123 Cabot Strait Landfall
8124 Cabot Strait Seabed Protection

8200 dc Specialties - Converter Stations
8210 Labrador Converter Station
8220 Soldiers Pond Converter Station
8230 Maritime Converter Station
8240 Newfoundland West Converter Station

8500 dc Specialties - Transition Compounds
8510 Transition Compound - Labrador
8520 Transition Compound - Northern Peninsula
8530 Transition Compound - Newfoundland West
8540 Transition Compound - Maritimes

8600 dc Specialties - Electrodes
8610 Electrode Labrador
8620 Electrode Newfoundland East
8630 Electrode Maritimes
8640 Electrode Newfoundland West

9000 Other Specialties - General

9100 Other Specialties - Habitat Compensation
9110 Fish Habitat Compensation - General
9111 Fish Habitat Compensation Gull Island
9112 Fish Habitat Compensation Muskrat Falls
9113 Fish Habitat Compensation SOBI

INFORMATION TYPE CODE

J04 Compressor Performance Curves
J05 Pump Performance Curves
J09 Generator Performance Curve
J10 Soil Graduation Analyses
J11 Optimization Analyses (Civil)

K PROCEDURES
K01 Welding and Weld Repair Procedure
K02 Vibration/Noise Level Test Procedure
K03 Non-Destructive Test Procedure
K04 Performance / Acceptance Test Procedure
K05 Heat Treatment Procedure
K06 Installation Pressure Test Procedure
K07 Factory and Site Test Procedures (FAT/SAT)
K08 Installation Load Test Procedure
K09 Dimensional Inspection Procedure
K10 Manufacturing/Fabrication Procedure
K11 Cable Wiring Procedure
K12 Commissioning Procedures
K13 Leak Test Procedure
K14 Surface Preparation and Cleaning
K15 Painting Procedure
K16 Instruction for Transportation, Storage
K17 Shaft Inspection Procedure
K18 Flushing Procedure

L MAINTENANCE & SPARES
L01 Lubricant and Operating Fluids Schedule
L02 Recommended Commissioning and Start-up Spares
L03 Recommended 12 and 24 Months Operation Spares
L04 Recommended Critical Spares (Insurance)
L05 Special Tools List
L06 Software for Maintenance and Calibration

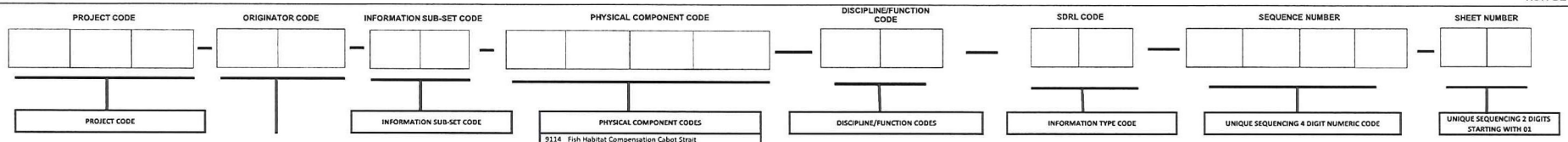
M TEST & INSPECTION REPORTS
M01 Material Test Certificates
M02 Instrument/Electrical Test Report
M03 Component/Assembly Balance Certificate
M04 Hydrostatic/Pneumatic Test Certificate
M05 NDE Test Reports
M08 Calibration Certificates
M09 Fire Test Certificates
M10 Inspection Release Certificates
M11 Code Compliance Certificate
M12 Lifting Equipment Test Certificate
M13 Noise Test Certificate/Reports
M14 Vibration Test Certificate/Reports
M15 Performance Test Certificate
M16 Painting/Coating Test Report
M17 Steel Manufacturing Reports
M18 Mechanical Run Test Report
M19 Factory and Site Test Report (FAT/SAT)
M20 Commissioning Report
M21 Efficiency Test Reports

Q QUALITY ASSURANCE / QUALITY CONTROL
Q01 Quality Assurance System Registration Certificate
Q02 Quality Assurance System Manual
Q03 Quality Plan
Q04 Inspection and Test Plan(s) (factory and site works)
Q05 Cerificates of Conformity (factory and site works)
Q06 List of Generator Tests

R MANUALS
R01 Installation, Operation and Maintenance Manual
R02 Manufacturing Records Book (MRB)

CIMFP Exhibit P-01437

Page 22



9114	Fish Habitat Compensation Cabot Strait
9115	Fish Habitat Compensation Electrode Labrador
9116	Fish Habitat Compensation Electrode Newfoundland East
9117	Fish Habitat Compensation Electrode Maritimes
9118	Fish Habitat Compensation Electrode Newfoundland West
9120	Terrestrial Habitat Compensation - General
9121	Terrestrial Habitat Compensation Gull Island
9122	Terrestrial Habitat Compensation Muskrat Falls
9200	Operations Telecommunications Systems
9210	Operations Telecommunication System - Gull Island
9220	Operations Telecommunication System - Muskrat Falls
9230	Operations Telecommunication System - Island Link
9240	Operations Telecommunication System - Maritime Link

Note: See Page 1 for column headings with no content.

CIMFP Exhibit P-01437

Page 23

9.3 Attachment 3 – Nalcor Energy – Lower Churchill Project – Summary of Changes from Revision B1 to Revision B2

Attachment 3

Summary of Changes to the Coding Standard LCP-PM-0000-IM-SD-0000-01 from REV. B1 to REV. B2

Additions to Originator Codes Attachments 1 and 2

FM - Fasken Martineau Dumoulin
GD - GeoDigital International Inc.
ME - Mears Canada Corp.
PA - Provincial Aerospace
PC - PricewaterhouseCoopers LLP - Toronto
VH - Voith Hydro Inc.
WA - Wolverine & Associates Ltd

Deletions to Engineering / Revision Controlled Documents Information Type Codes (Attachment 1)

CT - Contract
EI - Expression of Interest (EOI)
RF - Request For Proposal

Additions to Information Type Codes - Engineering / Revision (Attachment 1) and Supplier Documents (Attachment 2)

CR Chart
A03 Monthly Risk Report
A04 Risk Management Plan
A05 Unpriced Copies of Major Sub-Supplier Orders
A06 Monthly Progress Reports
A07 Project Execution Program
A08 Permits
A11 Logistics and Transportation Plan
A12 Installation Instructions Manual
A13 Shipping Bills of Material
A15 Construction Method Statements and Procedures
A21 List of Environmental Emission and Effluent
A22 Survey Reports
A24 3D Models
A27 Environmental Management Plan
A28 Safety and Health Plan, Risk Assessment, Security Plan
A29 Turbine Aeration System Proposal
A30 Turbine Hub Sleeve Blocking Method
A31 Rotor Rim Shrink Fit Design Proposal
A32 Rotor Pole Lamination Design
A33 Upper Bracket Deck Design
B04 Arrangement and Sub Assembly Drawings
B05 Loading Drawings
D06 Foundation Drawings
D07 Equipment Drawings
D08 Shipping Drawings
E09 Cable Specifications
G10 Configuration Files and Software of each Device Supplied
H59 Critical Speed of Rotating System
H60 Acceptable Stress Calculations - Extreme Loads
H61 Extreme Loads - Breaking Point of Shear Pins
H62 Natural Frequency Analysis
H63 Fatigue Analyses
H64 Step-up Calculation Prototype Efficiency
H65 Current Transformers design calculations for knee point
H66 Creep Correction Chart
K16 Instruction for Transportation, Storage
K17 Shaft Inspection Procedure
K18 Flushing Procedure
K21 Certified Fusion Splicing Procedure
K22 Routine Test Procedure
K23 Sample Test Procedure
M24 Manufacturer's Type Test List and Report
M25 Reports and Certificates for Routine Tests
M26 Reports for Sample Tests
Q01 Quality Assurance System Registration Certificate
Q02 Quality Assurance System Manual
Q03 Quality Plan
Q04 Inspection and Test Plan(s) (factory and site works)
Q05 Cerificates of Conformity (factory and site works)
Q06 List of Generator Tests
Q07 Internal/External Audit Schedule
Q08 Management Review Minutes of Meertings
Q09 Third Party Surveillance Report

Additions to Physical Components Attachments 1 and 2

1030 Office Facilities - Other
1410 ConstructionTelecommunications - Gull Island
2140 Reservoir Stabilization
2150 Water Management System
2341 Upstream Cofferdam
2342 Downstream Cofferdam
2343 Riverside Cofferdam
2360 Transition Structures
2361 North Transition Structure
2362 Center Transition Structure
2363 South Transition Structure
2370 Dams/Cofferdams Auxilary Services
2440 Spillway Auxiliary Services
2850 North Spur - Kettle Lake Stabilization
3110 Approach Channels
3120 Tailrace
3280 Penstocks Construction Audit
3290 Intake Auxiliary Services
3411 Governor
3421 Excitation System
3430 Electrical Ancillary / Auxiliary Systems
3431 DC Power / UPS System
3432 MV Systems (601V - 15kV)
3433 LV Systems (Up to 600V)
3434 Unit Service Transformers
3435 Station Service Transformers
3436 Bus Duct
3437 Diesel Generators
3441 Service Air System
3442 Governor Air System
3443 Fire Protection System
3444 Pump Drainage System
3445 Pump Dewatering System
3446 Hydraulic Oil Handling and Filtration System
3447 Oily Water Interception System
3448 Cooling Water System
3449 Service Water System
3451 Protection
3452 Control and Monitoring
6221 Island Section 1
6222 Island Section 2
6223 Island Section 3
6271 Labrador Section 1
6272 Labrador Section 2
7110 Unit Conversion at Holyrood to Synchronous
7120 New Synchronous Condensers
7130 Breakers
8121 Cabot Strait Cable supply
8123 Cabot Strait Landfall
8124 Cabot Strait Seabed Protection

Deletions to Physical Components Attachments 1 and 2

1900 Other Offices - General
1910 Happy Valley - Goose Bay Office
2220 Diversion Tunnels
2230 Diversion Tunnels - Portals
2240 Diversion Tunnels - Inlet Portal Gates
2250 Diversion Tunnels - Inlet Channel
2260 Diversion Tunnels - Outlet Channel
2270 Diversion Tunnels - Concrete Plugs
2311 Concrete Diaphragm Wall
2315 Concrete Face & Plinth - Slipform Curbs
2316 Concrete Face & Plinth - Concrete Face
2317 Concrete Face & Plinth - Concrete Plinth
2318 Concrete Face & Plinth - Concrete Parapet
2350 Cofferdam - Downstream
2390 Interface Structure - Intake/Main Dam
2500 Approach Channel - General
3210 Interface Structure - Intake/Main Dam
3230 Intake & Spillway Interface Structure
3370 Diesel Generators
3480 Excitation System
3490 Spare Parts and Special Tools
3500 Balance of Plant - General
3510 Protection
3520 Control and Monitoring
3530 DC Power System
3540 MV Switchgear
3550 LV Switchgear
3560 Unit Service Transformers
3570 Station Service Transformers
3580 Bus Duct
6210 Gull Island to Strait of Belle Isle
6230 Taylors Brook - Soldiers Pond
8112 DC Specialties - Marine Crossings - SOBI - Installation

Changes to Physical Components Attachments 1 and 2

1010 Office Facilities - Hydro Place
1020 Office Facilities - EPCM & Project
1150 Construction Bridge (Including Spillway and Site Access Temp Bridges)
1160 Barge / Ferry Access
1810 Marshalling Areas and Warehousing
1820 Offsite Port Facilities
2210 Diversion Tunnels
2312 Foundations / Diaphragm Wall
2314 Face & Plinth - General
2340 Cofferdam
2420 Gates, Guides, Stop Legs and Hoist
2840 North Spur - Crest Unloading
3000 Power Facilities
3100 Powerhouse Channels (including Plugs and / or Cofferdams)
3240 Intake Gates, Trashracks, Stop Legs & Hoists
3300 Power House
3310 Substructure
3330 Gates, Trashracks, Stop Legs & Hoists
3340 Building Electrical Services
3350 Building Mechanical Services
3400 Power Generation
3440 Mechanical Ancillary / Auxiliary Systems
3470 Spare Parts and Special Tools
6100 HVac Overland Transmission
6110 Gull Island to Churchill Falls
6160 Collector Lines Powerhouse to Switchyard
6200 HVdc Overland Transmission
6220 Island Overland Transmission
6270 Labrador Overland DC Transmission
8000 HVdc Specialties
8100 dc Specialties - Marine Crossings
8110 dc Specialties - Marine Crossings - SOBI - General
8111 SOBI Cable Supply
8113 SOBI - Landfall
8114 SOBI Seabed Protection
8200 dc Specialties - Converter Stations
8500 dc Specialties - Transition Compounds
8600 dc Specialties - Electrodes

CIMFP Exhibit P-01437

Home | Management | Generation | DC Spec. & Switchyards | Overland Transmission | Released | Review

View All Site Content
Documents
Lists
Discussions
Sites
People and Groups
Recycle Bin

505573 - Lower Churchill Project > Released

Technical

Type	Name	Modified By
	48 - Instrumentation	Ait Ouferoukh, Moulc
	47 - Electrical	Ait Ouferoukh, Moulc
	46 - Piping	Ait Ouferoukh, Moulc
	45 - Mechanical	Ait Ouferoukh, Moulc
	44 - Architecture	Ait Ouferoukh, Moulc
	43 - Structure	Ait Ouferoukh, Moulc
	42 - Concrete	Ait Ouferoukh, Moulc
	41 - Civil	Ait Ouferoukh, Moulc
	40 - Engineering Management	Ait Ouferoukh, Moulc

Add new document

Project Instructions and Forms

Type	Name	Modified By
	Igc	System Account
	Management Plans	Ait Ouferoukh, Moulou
	Divisional QMS - References	Ait Ouferoukh, Moulou
	Project Instruction Manual	Ait Ouferoukh, Moulou
	Forms and Templates	Ait Ouferoukh, Moulou
	Project Instructions	Ait Ouferoukh, Moulou

Add new document

Best regards,

Jackie Drover
Document Control Manager
Lower Churchill Project

SNC-LAVALIN INC.
272 Torbay Road
St. John's, NL
A1A 4E1

Tel.: +1 709-752-3461, x 4962
Cell.: +1 709-730-3439