

From: ronpower@nalcenergy.com
To: [Bob Barnes](#); [Darren Debourke](#); [Jason Kean](#); [Ken McClintock](#); [Kyle Tucker](#); [Lance Clarke](#); [Pat Hussey](#); [Paul Harrington](#); [Scott O'Brien](#); [kgmclintock@](#)
Subject: Re: EPCM Services: Task Force Charter (draft) + other files
Date: Thursday, February 16, 2012 6:49:01 AM
Attachments: [.png](#)
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[Task Force Table.docx](#)
[EPCM - NE Responsibility Matrix.xls](#)

While the Task Force exercise may result in org charts intelligent enough to allow us to move ahead (and remove "fat"), in my view we will not be able to agree long-term org and staff assignments which would result in agreement on total EPCM hours to the end of the job.

I believe we are better of managing SLI resourcing by rigorous management of PAA's with relentless focus on definition and delivery of scope against schedule. Fixed fee could continue to be applied against every hour, same as now. From a DG3 estimate perspective we can then carry forward our current cost number keeping in mind that we will need to monitor and manage the resource levels diligently.

The package engineers would be a critical part of achieving this state of existence.



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Ron Power---02/15/2012 09:35:52 PM---Normand - Further to the meeting held on 01 February, please find the attached files: 1 - Charter e

From: Ron Power/NLHydro

To: Normand.Bechard@snclavalin.com

Cc: Darren Debourke/NLHydro@NLHYDRO, Ken McClintock/NLHydro@NLHYDRO, Kyle Tucker/NLHydro@NLHydro, Paul Harrington/NLHydro@NLHydro, Scott O'Brien/NLHydro@NLHYDRO, Mahmoud.Berjaoui@snclavalin.com, Paul.Murray@snclavalin.com, Marie-Claude.Dumas@snclavalin.com, Francois.Couturier@snclavalin.com, Jason Kean/NLHydro@NLHydro, Lance Clarke/NLHydro@NLHydro, Pat Hussey/NLHydro@NLHydro, Bob Barnes/NLHydro@NLHydro

Date: 02/15/2012 09:35 PM

Subject: EPCM Services: Task Force Charter (draft) + other files

Normand - Further to the meeting held on 01 February, please find the attached files:

1 - Charter entitled "EPCM Services Post-Gate 3 Execution Planning: Team Charter" (draft). When finalized, this document will be signed off and will be the overarching charter that will guide the initiative.

2 - This "Task Force Table" file - this file will be populated with specific "Functional Area" criteria under the umbrella of the overarching Team Charter.

3 - EPCM - NE Responsibility Matrix - this can be used as an aid to the process.

4 - file entitled "Objectives of the IPR" - this contains an extract from the document that was used by the Independent Project Review team at Decision Gate 2 (DG2). A similar document will be produced for DG3. It is provided here as a reference point of what we will need to have in place, keeping in mind that that the DG3 IPR will be substantially more robust than the DG2 event.

I will be out of the office for the next week or so. Jason / Lance will meet with you to discuss / obtain comments/ complete.

Regards,

Ron



Objectives of the IPR.docx



Post Gate 3 Charter Master.docx



Task Force Table.docx



EPCM - NE Responsibility Matrix.xls



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1.0 Objectives of the Independent Project Review (IPR)

The stated objectives of the Gate 2 IPR are to:

- Provide an independent assessment of the work performed by the collective NE-LCPMT and the deliverables from the Phase 2, with special emphasis on the processes and outcomes of these processes that have been used to arrive at the NE-LCPMT's conclusions and recommendations.
- Identify observations and findings and provide recommendations relative to the observations and findings that require NE-LCP VP disposition to responsible managers, action and closeout at an appropriate time during Phase 3.
- Provide an independent assessment and recommendation to Nalcor's leadership regarding the Project Readiness of People, Processes and Tools to proceed through Gate 2 based on the evidence provided during the IPR and the deliverables defined as being necessary to pass through Gate 2.
- LCP Team to demonstrate due diligence and provide a record that an independent third party expert review has occurred relative to the Gate 2 IPR and approval sought, in accordance with the gateway process.

2.0 IPR Scope and Focus Areas

2.1 Scope

This Gate 2 IPR will address the following scope of the NE-LCP where applicable and as determined by the NE-LCP Gatekeeper.

Selected project development scheme:

- Muskrat Falls Generation Facility followed by the Gull Island Generation Facility
- HVdc transmission link to the Island, ensuring that proper consideration regarding upgrades to the island system to facilitate the Island Link have taken place.
- HVac Transmission from Muskrat Falls to Churchill Falls.
- Optimization potential of the first phase of the project, Muskrat Falls and HVdc transmission link to the Island, including identification and screening of export scenarios for excess energy.

In agreement with the NE-LCP VP, the focus of the review will be directed towards the selected project development scheme and shall consider:

- The Readiness for the Project to proceed through Gate 2 and commence Phase 3 scope from a People, Process and Tools readiness perspective;
- The identification of potential gaps in the Project processes and project strategies;

- Feasibility deliverables and preparation work required to enter into Phase 3;
- Compliance with appropriate policies, procedures and processes; and
- Confirmation that deliverables required, in order to conduct a meaningful assessment of Project viability from a technical, economic and risk based perspective are available and are adequate.

Project deliverables will be reviewed for the purpose of confirming the status and effectiveness of existing project management processes and management systems and the readiness of the project team from a perspective of People, Processes and Tools.

In agreement with the NE-LCP VP, the IPR will be organized by the Focus Areas defined in Section 9.2.

2.2 Focus Areas

The IPR Team shall review and evaluate the deliverables from Phase 2 which have been used by the Project to prepare recommendations, applications or have been the basis for analysis and selection of a particular project development option. Verification that the deliverables defined for Gate 2a and 2b (reference document [Lower Churchill Project – Gate 2 Deliverables GEN-PM-001](#) for listing) have been achieved or there is a workaround which is deemed acceptable by the Gatekeeper that includes verification of the following:

- That the preparation and planning of the project including those prerequisites identified by the Gatekeeper, which may not all be directly controlled by the Project team but are key enablers of the project, have been cleared or are at an advanced or otherwise acceptable state of completion or readiness. These include but are not limited to:
 - Water Management; New Dawn Agreement; Shareholder support; Technological applications; Demonstrated need for the project based on demand; Appropriate timing for the project to proceed based on external factors ; Global financing market and liquidity; Provincial finances and forecast.
- That there are adequate processes, procedures, tools, and systems in place or planned to be developed to proceed to the next phase.
- That there is an adequate general understanding by the project team of the processes, procedures, tools, systems and drivers of the project.
- That the quality and completeness of the source data used by Project is suitable.
- That the processes and methods used for Risk Analysis, Estimating and Economic analysis comply with appropriate standards, best practices or are equivalent.
- That the development of the Project Charter and Project Execution Plan was carried out correctly.

- That the development of the Project Contracting Strategy was carried out in accordance with a defined process and that this complies with the appropriate standards, best practices or equivalent and the contracting plan.
- That the project contract strategy has incorporated sufficient market intelligence to make it feasible from a legal, insurance and execution perspective.
- That the Health, Safety and Environment processes and procedures used comply with the appropriate standards, best practices or equivalent.
- That the Quality Assurance processes and procedures used comply with the appropriate standards, best practices or equivalent.
- That the Project recommendation and AFE has been prepared in accordance with a defined process and that this process complies with the appropriate standards, best practices or equivalent.
- That the development of the Project cost estimates was carried out in accordance with a defined process and that this complies with the industry standard or is equivalent.
- That the Project Schedule has been developed in accordance to an agreed process and identifies the critical path and the correct sequence of key events.
- That the Engineering deliverables required to commence the next phase are available and complete. These include site investigation, model testing and study scope for Gull Island, Muskrat Falls, HVdc and associated HVac transmission.
- That financing options are advanced to an acceptable state, that no showstoppers are apparent and that there is a plan to finalize the financing required within an acceptable timeframe that is acceptable to the Gatekeeper.
- That arrangements for power sales are advanced to an acceptable state, that no showstoppers are apparent and that there is a plan to finalize the arrangements required within an acceptable timeframe that is acceptable to the Gatekeeper.
- That for the transmission access agreements for export transmission that no showstoppers are apparent and that there is a plan to finalize the agreements within an acceptable timeframe that is acceptable to the Gatekeeper.
- That the negotiations and consultations with aboriginal groups are well advanced and proceeding in accordance with a plan, which has been endorsed by the Gatekeeper, including negotiation of any Impact and Benefits Agreements.
- That the scope of work for Phase 3 is defined and that there is a process available for bidding, review and contract award and that this complies with best practice standards or equivalent.
- That a project cost and schedule estimate in the appropriate range of accuracy is available.
- That an organization, mobilization and office plan has been developed and the organization is adequate to enter into the next phase.
- That the organization staffing and design is commensurate with the complexity of the project and is both well represented and functional.
- That there is a strategy and plan in place to have Operations and Maintenance representation in the Project and that a high level Operations philosophy has been

developed which includes responsibilities during handover and a “Ready for Operations” philosophy aligned with corporate operating philosophy.

- That the Environmental Assessment process is underway, on schedule, that no showstoppers are apparent and that there is a plan to finalize the environmental activities leading up to a final decision to meet the Project schedule.
- That the strategic and tactical project risks are understood and a risk management plan is in-place and being actively pursued.
- That the project execution approach is clearly defined, validated and endorsed by management.
- That the governance structures are established and clearly communicated for current and subsequent project phases.
- That the project’s stakeholders are identified, an engagement plan is in-place and an appropriate level of engagement underway.
- That the project management system structure is developed and implementation underway.
- That investment analysis process has been used to select the optimum development alternative, scheme and sequence and that such a process is commensurate with the level of decision.
- That Benefits obligations are understood and clearly communicated.
- That a Labour Relations Plan is in-place and clearly communicated.
- That Shareholder requirements for equity and supporting debt have been communicated.
- That and information management plan is in place and communicated.
- That the optimization potential for the Muskrat Falls and HVdc Island Link project phase has been evaluated and the economic and technical feasibility analysis has been carried out with an appropriate plan in place for realization of any further potential as a result of the optimization.

<h1 style="margin: 0;">EPCM Services</h1> <h2 style="margin: 0;">Post - Gate 3 Execution Planning : Team Charter (draft)</h2>			
Introduction:	<ol style="list-style-type: none"> 1. It is recognized that the Gate 3 deliverables, defined for completion in Phase 2, have not been sufficiently developed either to support a project readiness review or the development of the EPCM person-hour estimate. 2. In an effort to expedite the completion of all Gate 3 deliverables and to enter a state of construction readiness, awaiting EA approval, NE and SLI agree to a cooperative effort to complete all Gate 3 Deliverables, using a task force approach. 		
Date Issued:	XX Feb. 2012		
<h3 style="margin: 0;">Functional Areas to be Addressed</h3>			
	<ul style="list-style-type: none"> Project Management Health & Safety Environment Project Controls Engineering (Components 1, 3 & 4) QA/QC Document Control Risk Management Supply Chain Labor Relations Office Services & Administration Construction Management & Completions Commissioning IS/IT 		
NE-LCP Sponsor	Ron Power – Project Manager	SLI Sponsor	Normand Bechard – General Project Manager
Stakeholders	<ul style="list-style-type: none"> Nalcor Executive Leadership team: Paul Harrington, Lance Clarke SLI Executive Leadership team: Joe Salim, Marie-Claude Dumas 		
<h3 style="margin: 0;">Objectives</h3>			
Objectives	<ul style="list-style-type: none"> Ensure Nalcor functional reqt's are defined, documented and if required, clarified Ensure Nalcor agreement with EPCM Management Plans and organization, consistent with above Confirm functional scope & execution strategy Agree basis for Functional Execution Plan Agree EPCM processes & procedures Agree organization charts and manpower plans, by phase Identify risks/issues/ potential for improvement 		

EPCM Services

Post - Gate 3 Execution Planning : Team Charter (draft)

Deliverables (for each functional area)	<ul style="list-style-type: none"> • Management Plan • All required processes, procedures, and tools identified and implementation plan documented • Manpower plans, incl names, start/end dates, location, source, rate, full/part time, etc • Other deliverables related specifically to the function (see table herein) • Table of risks, issues, potential for improvement, all with accompanying mitigating or supporting actions
Critical Success Factors	<ul style="list-style-type: none"> • Adequate information in-hand to progress deliverables • Maintain open communications via regular progress updates within task force • Task force schedule development and adherence • Alignment of stakeholders on scope of task force activities • Alignment of all participants on what is “best for project”
Goals / Measures of Success	<ul style="list-style-type: none"> • Sufficiently complete all Management Plans and Gate 3 deliverables so as to achieve a positive Project Readiness rating in _____: • NE/SLI alignment on path forward

Roles and Responsibilities

Task Force Leader
<ul style="list-style-type: none"> - Achieve task force goals and objectives - Steward team charter - Ensure task force is adequately resourced to meet task force objectives - Communicate with task force members and NE-LCP Stakeholders to ensure alignment - Manage task force schedule and performance - Define the expected standard for task force deliverables - Manage and approve detailed scopes of work for the engaged Subject Matter Experts - Ensure task force functions within established NE-LCP management systems (i.e. procedures, guidelines, document management, etc.) - Prepare the final recommendation and substantiating reports
Team Members
<ul style="list-style-type: none"> - To be defined
Subject Matter Experts
<ul style="list-style-type: none"> - Perform identified scopes of work as identified by task force leader - Other ??

EPCM Services

Post - Gate 3 Execution Planning : Team Charter (draft)

Interpersonal Behaviours

Behaviours

Team Values and Norms:

- We will adhere to Nalcor Energy’s Vision and Values
- We will conduct all activities with Safety as our number one priority
- We will be open minded and responsive to creative solutions
- We will observe established NE-LCP “Meeting norms and behaviours” guidelines
- We will respect and utilize all individuals’ skills and knowledge to deal with specific issues
- We will work as equals to solve and overcome problems and challenges
- We will speak freely to ensure our thoughts, concerns & issues are brought forward
- We will actively listen, be attentive, and seek clarification when required
- We will extend common courtesies to all (i.e. one conversation at a time, no interruptions, etc.)
- We will encourage different ideas and approaches to develop new solutions
- We will hold ourselves accountable for ensuring that all expectations are being met

Task Force Guidelines

Guidelines

- Project execution philosophy & execution approach to be consistent with and support project financing model
- All construction shall be executed by qualified contractors, with demonstrated proven success in work awarded
- Site management teams to be of optimum size for its primary (basic) needs and in consideration of functional support being provided by St. John’s Home Office
- St. John’s Home Office staffed to suit project needs, with planned longer term reductions
- Roles and responsibilities are defined in attached matrix
- SLI to use its own methods and procedures in the performance of the services, building on SNC-Lavalin Best Practices, systems, procedures and processes
- Nalcor requirements are specified in the Coordination Procedures. SLI must comply with these requirements
- Where necessary, SLI shall create, adapt and/or modify its own procedures, practices, systems, or programs to satisfy Nalcor requirements and objectives

EPCM Services

Post - Gate 3 Execution Planning : Team Charter (draft)

Communication

Identification of Team Communication Protocols	Frequency or Mode E-Mail, Meeting, Teleconference, Weekly, Ad Hoc, etc
Network files location	R:\????
Weekly task force status report to Sponsors	Weekly – electronic
Presentation of results by Task Force	

Operating Guidelines

Operating Guidelines
<p>Team Decision-Making</p> <ul style="list-style-type: none"> - A collaborative team decision process will be sought. Approvals for decisions outside team authority limits will be sought through Sponsors.

Acceptance

Nalcor Sponsor	Ron Power	Acceptance		Date	
SLI Sponsor	Normand Bechard	Acceptance		Date	
Team Member		Acceptance		Date	
Team Member		Acceptance		Date	
Team Member		Acceptance		Date	
Team Member		Acceptance		Date	
Team Member		Acceptance		Date	

EPCM Services

Post - Gate 3 Execution Planning : Team Charter (draft)

Team Member		Acceptance		Date	
Team Member		Acceptance		Date	
Team Member		Acceptance		Date	
Team Member		Acceptance		Date	
Team Member		Acceptance		Date	
Team Member		Acceptance		Date	
Team Member		Acceptance		Date	
Team Member		Acceptance		Date	
Project Sponsor		Acceptance		Date	
Project Manager		Acceptance		Date	

Functional Area	Task Force Leader	Participants Nalcor SLI	Support Members	Interface Points	Functional Specific Deliverables	Benchmarks
Project Management?					1. PEP	
Engineering?						
Health & Safety						
Environment						
Construction Mgmt						1. Big contractors
Supply Chain						
Document Ctl						1. Standardize
Project Controls						
Quality Mgmt						
Labor Relations						
Risk Mgmt						
Office Services/Admin						

IS/IT							
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Responsibility Assignment Matrix - Nalcor Energy / EPCM Consultant

(Refer to Agreement LC-G-002 for Inclusive Listing of Responsibilities)

CORE ACTIVITY	RESPONSIBILITY ASSIGNMENT			NOTES
	Nalcor Energy	EPCM Consultant		
Project Management / General				
Prepare Overarching Project Execution Plan	R			
Establish / Implement Project-wide Policies	R			EPCM Consultant to input as appropriate.
Project Management Plans and Associated Procedures	R	R		2 sets - Nalcor and EPCM Contractor
Project Execution Plan for EPCM Services Scope		R		
Prepare / Implement Project Procedures for within EPCM Services Scope)		R		
Prepare Technical Interface Management Plan		R		
Overall Technical Interface Management for EPCM Project		R		
Prepare Deliverable List & EPCM Work Packages		R		
Approval of EPCM Personnel	R			Reimbursable personnel only.
Recruitment & Training of Operations Staff	R			EPCM to support training
Health, Safety and Security Management				
Develop and implement a Project-specific H&S Management Plan for all phases of the work		R		Within EPCM's scope.
Chairs Project-level OHS Steering Committee	R			
Monitors contractor / sub-contractor performance and coaches to achieve desired outcomes		R		
Develop and implement site-specific H&S Management Plans		R		
Establish supporting H&S procedure, processes & tools for the H&S Plan.		R		
Prepare and implement Emergency Preparedness/Response Plans		R		
Develop & Implement Security Plan and Procedures		R		
Compliance with Occupational Health and Safety Act and Safety Regs		R		
Monitor Safety Performance and Prepare Safety Statistics Reports		R		
Establish construction safety targets		R		
Investigate and report Accidents and Near Misses		R		
Site Safety Inductions		R		
Verifying Contractor Safety Management Systems and site safety plans		R		
Implement a Safety-By-Design program to support the Engineering phase		R		
Environmental Management and Regulatory Compliance				
Obtain Environmental Release	R			
Develop a Project-specific Environmental Protection Plan for all phases of the work		R		
Develop and implement environmental mitigations and rehabilitation plan for use during and post the construction phase		R		
Monitors contractor compliance with EPP		R		
Obtain and manage all construction permits, licences, notifications and maintain conditions.		R		Constructor will be responsible for individual permits
Establish construction environmental management targets		R		
Develop Site Specific EPPs		R		
Prepare and implement Project Regulatory Compliance Plan		R		
Identify requirements and complete applications for permits and licenses		R		Permits in Nalcor's name.
Compliance with applicable Environment Regulations and Conditions of Permits		R		
Environmental Awareness Training		R		
Verify Contractor Environmental Management Systems and EPPs		R		
Environment Management Committee	R			
Labor and HR Management				
Establish Project Labor Agreement (incl. Special Project Order)	R			EPCM supports negotiations and implements.
Overall management of Project labor agreements used by Contractors.		R		
Administer dispute resolution mechanisms outlined in Project labor agmt		R		
Overall labor management include productivity and performance.		R		

Notes: If there any discrepancy between this matrix and Agreement LC-G-002, the later shall be assumed to be accurate.

Responsibility Assignment Matrix - Nalcor Energy / EPCM Consultant

(Refer to Agreement LC-G-002 for Inclusive Listing of Responsibilities)

CORE ACTIVITY	RESPONSIBILITY ASSIGNMENT			NOTES
	Nalcor Energy	EPCM Consultant		
Administer of policies and procedures related to Personnel on site.		R		
Project Human Resources Policies	R			
External and Public Relations / Communications				
Project Press Releases	R			
Project Presentations	R			EPCM Consultant deliver presentations as approved by Nalcor.
Agreements with Outside Authorities				
• Government	R			
• Public Affairs	R			
• Community	R			
Manage Environmental Assessment Commitments	R			EPCM to execute commitments.
Property Assessment and Acquisition	R			
Innu Nation IBA Commitments	R			EPCM to execute commitments.
Reviews and Audits				
Project Audits				
• General Technical		R		
• Project-Level/Financial	R			
• Management		R		
• Environmental		R		
Prepare Design Verification Plan		R		
Independent Project Reviews	R			
Constructability Reviews		R		
Operability Reviews	R			
Technical Peer Reviews		R		
Engineering and Design				
Establish and maintain Project Basis of Design	R			
Establish Design Philosophies	R			
Prepare Review Plan for Company Supplied Documentation		R		
Engineering Management Plan for EPCM Scope		R		
Develop Engineering Procedures for each discipline		R		
Develop Design Integrity Stewardship Procedures	R			
Identify Design Codes and Standards		R		
Identify all engineering deliverables for each discipline		R		
Estimate a Person-hour effort for production of engineering deliverables		R		
Prepare Design Briefs & Criteria		R		
Prepare Technical and Functional Specifications		R		
Implement a Value Improving Practices (VIP) program as a means to improve cost, schedule and operability/reliability		R		
Equipment Spec/Data Sheets/Evaluation/MOC, Drawings - All Disciplines		R		
Preparation of all tender drawings		R		
Prepare any Technical Specifications for Tenders		R		
Manage all hard and soft technical interfaces within and touching the EPCM scope		R		
Perform Interdiscipline checks on all engineering deliverables		R		
Prepare Construction Drawings		R		Except contractor or supplier furnished
Prepare Operations and Maintenance Plan		R		
Prepare Design - Construction Management Plan		R		
Conduct design in accordance to Company-supplied Life Cycle Cost Analysis Philosophy		R		
Arrange and coordinate HAZID and HAZOP reviews		R		
Perform Safety Integrity Level (SIL) studies as required		R		
Detailed Technical Studies		R		
Overall System Engineering and Integration Studies		R		
Complete Equipment Criticality Ranking for use in determining surveillance		R		
Technical Bid Analysis		R		
Technical Review of Contractor Shop Drawings		R		

Notes: If there any discrepancy between this matrix and Agreement LC-G-002, the later shall be assumed to be accurate.

Responsibility Assignment Matrix - Nalcor Energy / EPCM Consultant

(Refer to Agreement LC-G-002 for Inclusive Listing of Responsibilities)

CORE ACTIVITY	RESPONSIBILITY ASSIGNMENT		NOTES
	Nalcor Energy	EPCM Consultant	
Equipment Model Testing		R	
Ensure equipment Installation Procedures are available		R	
Automation, Control, Monitoring, Remote Operation		R	
Review of Construction Contractor's Drawings		R	
Supply Chain Management			
<u>Contracting and Procurement</u>			
Establish Master Contract Package List and Contracting Strategy		R	
Prepare Contracts/Purchasing Policies	R		EPCM implements
Prepare Overall Purchasing Plan		R	
Prepare Overall Contracting Plan		R	
Prepare and implement Contracts/Purchasing Procedures		R	
Define Construction/Procurement Packages		R	
Establish standard Commerical Terms and Conditions for agreements	R		
Special and Supplementary Conditions - Inquiry Document	R		
Develop procurement and contracting schedule including Delivery Schedule (ROS Dates)		R	
Data Submittal Schedule		R	
Prepare list of qualified Bidders		R	
Prepare and Issue EOI & Pre-Qual. Documents		R	
Prepare and issue tender / RFP packages		R	
Respond to Clarification from Bidders		R	
Receive Bids/Opening		R	
Commercial and Technical Evaluations of Tenders		R	
Conduct pre-award meetings		R	
Contract/Purchase Requisition		R	
Issue Purchase Order (PO)/Contract		R	
Contract/Purchase Order Register		R	
Status of Purchase Orders/Contract		R	
Contract/Purchase Order Amendments		R	
Contractor Competency Evaluations		R	
Claims Management		R	
Dispute Resolution		R	
Close Out PO/Contracts		R	
<u>Materials Management and Control</u>			
Material Management Plan		R	
Produce Detail Material Management Control Procedures/Plans		R	
Provide and maintain Material Management Control System		R	
Report Progress and Update Regularly		R	
Establish a Site Materials Storage Area		R	
Schedule Deliveries to Site		R	
Perform receiving inspection		R	
Establish and Maintain Material Receipts Register		R	
Distribute Equipment and Material to Contractors		R	
Report and manage non-comforming material		R	
Carry Out Regular Inventory Checks		R	
Procure and maintain Commissioning Spares		R	
Procure and maintain Operating Spares	R		
Warehousing of Spares		R	
Secure Vendor Commissioning Assistance		R	
Transfer Insurance and Operating Spares to Owner's Warehouse		R	
Stored Equipment Maintenance & Preservation		R	
<u>Expediting</u>			
Expediting and Inspection Procedures		R	
Expediting Visit Register		R	
Vendor Information		R	
Equipment and bulk materials		R	
Status Reporting		R	

Notes: If there any discrepancy between this matrix and Agreement LC-G-002, the later shall be assumed to be accurate.

Responsibility Assignment Matrix - Nalcor Energy / EPCM Consultant

(Refer to Agreement LC-G-002 for Inclusive Listing of Responsibilities)

CORE ACTIVITY	RESPONSIBILITY ASSIGNMENT		
	Nalcor Energy	EPCM Consultant	NOTES
Logistics			
Develop Logistics and Materials Movement Plan		R	
Develop Logistics and Materials Movement Procedures		R	
Coordinate Inland Freight		R	
Obtain shipping documents		R	
Coordinate Ocean Freight		R	
Prepare Customs Documents for importing into Canada		R	
Prepare shipping data for export		R	
Operating Plant Logistics Planning	R		
Construction Management			
Prepare and implement Construction Management Plan		R	
Overall construction management for the Project		R	
Construction Planning		R	
Develop and Implement Construction Management Procedures		R	
Complete modularization / prefabrication analysis		R	
Prepare Detailed Construction Execution Plan & Schedule		R	
Manage Site Queries		R	
Engineering Query Process		R	
Manage Owner supplied materials		R	
Develop and implement Constructability Program and supporting procedures in order to incorporate industry best practice		R	
Carry Out Constructability Design Reviews		R	
Develop and implement a Productivity Improvement Plan		R	
Overall management of Project sites and provision of common services (e.g. accommodations, fire, security, transportation, etc.)		R	
Provision of Temporary Facilities at Site including Construction Office		R	For EPCM and NE-LCP team.
Provide Services to Offices		R	
Provision of Site Administration Services and Accommodations / Messing		R	
Establish and maintain Fire Protection and Medical Facilities and Services		R	
Provide Suitable access and lay down / storage areas to allow contractors to mobilize		R	
Reports/Communication External to Project Team	R		
Relocations of Services and Site Clearing		R	
Overall work site coordinator		R	
Control of the Work and Contractors.		R	
Contractor Performance Monitoring		R	
Productivity Monitoring and Improvement		R	
Managing and Checking the setting out of the works on site including control survey		R	
Liaison with Contractors to determine material/equipment requirements and expediting from field where necessary		R	
Procure, administer, maintain all construction equipment, consumables, small tools, safety supply		R	Monitors contractors
Provide site communications - backbone system	R		
Provide construction power feed to site	R		
Provide Site Transport (to and from the site and within the site)		R	
Construction Power - Site Distribution		R	
Provide site communications - Local system		R	
Establish and maintain Warranty Register		R	
Project Completions			
Prepare Project Completions Philosophy		R	
Prepare Mechanical Completion (MC), Commissioning, and Preservation Specifications		R	
Prepare project-specific procedures for punch-list, preservation, permit-to-work, lock-out/tag-out, material handling		R	

Notes: If there any discrepancy between this matrix and Agreement LC-G-002, the later shall be assumed to be accurate.

Responsibility Assignment Matrix - Nalcor Energy / EPCM Consultant

(Refer to Agreement LC-G-002 for Inclusive Listing of Responsibilities)

CORE ACTIVITY	RESPONSIBILITY ASSIGNMENT			NOTES
	Nalcor Energy	EPCM Consultant		
Establish and implement a computerized Project Completion System		R		
Mechanical Completion (MC) - Manual, Execution / Management		R		Monitors contractors
Prepare Commissioning Manual		R		
Develop preservation program		R		
System / Equipment Preservation - Manual, Execution / Management		R		
Mechanical Completion Hand-Over Plan & Execution		R		
Prepare Handover Packages after Mechanical Completion		R		
Prepare M/C Inspection Test Records		R		
Prepare Mechanical Completion Certificate		R		
Prepare Commissioning Plan		R		
Readiness Process - define and implement	R			
Prepare and Update Pre-Op Schedule	R			
Commissioning Procedures		R		
Prepare commissioning static and dynamic documentation (e.g. checklist, run logs, etc.)		R		
Commissioning Spares Recommendation		R		
Prepare Testing Requirements, Procedures and Check Lists	R			
RFO Turnover Packages	R			
Arrange for Equipment Data Books, Operating and Maintenance Manuals to be supplied		R		
Hand-Over As-Built Drawings after Acceptance Tests		R		
Arrange for Contractors or Consultants to provide Commissioning Services		R		
Spare Parts Recommendation		R		
Prepare Spare Parts Lists		R		
Arrange for the provision of the necessary spare and replacement parts for initial Operation	R			
Prepare / maintain Master Equipment List		R		
Prepare Training Manuals		R		
Prepare Operations Procedures	R			
Prepare Operating Manuals		R		
Prepare Maintenance Manuals		R		
Prepare As-Built Documentation		R		
Quality Management				
Prepare Overarching Project Quality Assurance Plan	R			
Prepare and implement Project Quality Plan		R		Nalcor to audit implement.
Develop risk-based contractor / supplier screening tools for use in determining surveillance requirements		R		
General Quality Audits	R			
EPCM / Contractors Audit Function		R		NE will approve / accept the Contractors Audit Process
Develop and implement NCR Process		R		NE will approve / accept the Contractors NCR Process
Closure of Audit Findings		R		
Continuous Improvement Process		R		
Assess Contractors Quality Plans		R		
Overall Quality Statistics / Metrics		R		
Quality Training		R		
Lessons Learned		R		EPCM responsible for its scope.
In Engineering				
Development and implement engineering QA plan		R		
Engineering QC process		R		
Engineering Quality Reviews		R		
In SCM				
Risk-Based evaluation of suppliers / contractors for surveillance program development		R		
Prequalification - Establish Quality requirements		R		
Prequalification - Establish Quality requirements		R		
RFP - Quality Requirements		R		

Notes: If there any discrepancy between this matrix and Agreement LC-G-002, the later shall be assumed to be accurate.

Responsibility Assignment Matrix - Nalcor Energy / EPCM Consultant

(Refer to Agreement LC-G-002 for Inclusive Listing of Responsibilities)

CORE ACTIVITY	RESPONSIBILITY ASSIGNMENT			NOTES
	Nalcor Energy	EPCM Consultant		
Third Party Inspection		R		
Materials Traceability		R		
In Construction				
Overall responsibility for construction quality		R		
Contractor adherence to codes and regulations		R		
Establish site survey control system and control points		R		
Processing of Site NCR's		R		
Producing Construction Surveillance Reports		R		
Receiving Inspection at Site		R		
Prepare and implement Inspection Policies		R		
Prepare and implement Inspection Work Plan		R		
Review Quality Assurance (QA) programs/inspections		R		
Review of Vendors ITP's for equipment		R		
Conduct Shop Inspections		R		
Coordinate Factory Acceptance Testing and Site Integration Testing		R		
Develop FAT and SIT procedures		R		
Witness Shop Performance Testing		R		
Establish and operate site laboratories		R		
Review Vendor's Inspection and Testing Reports		R		
Status Reporting		R		
Endorse equipment Release for Shipment		R		
Project Control				
Establish and manage Management Summary Schedule (MSS)	R			Overall Project
Establish and manage Integrated Project Schedule (IPS)	R			Overall Project
Develop Project Controls Work Plan		R		For EPCM scope
Business Systems Integration	R			EPCM runs its PM tools (i.e. PM+)
Develop Work Breakdown Structure(WBS) & Cost Code of Accounts	R			
Progress and Performance Management		R		
Planning & Scheduling		R		
Progress Reports				
• Overall Project	R			
• EPCM Scope		R		
Estimating				
Estimating Work Plan & Procedures		R		
Prepare Services Budget Estimate		R		
Prepare Cost Estimates for the Work		R		
Assign Coding System		R		
Equipment and Material List		R		
Prepare Basis of Estimate		R		
Develop Material Quantities (bulks and consumables)		R		
Develop Equipment and Material Supply Cost (rates)		R		
Develop Labor Rates for use in estimating	R			
Develop production norms / rates to be used in the estimate		R		
Prepare Capital Estimate of Direct Costs and Matrix Summaries	R			
Develop Construction Hours including Productivity Factor	R			
Establish Estimate Contingency	R			
Contingency Management	R			
Capital Cost Estimate Details and Matrix Summaries	R			
Prepare estimates for Project Changes		R		
Check Bid Estimates for Construction Contracts		R		
Operating Cost Estimate	R			
Planning and Scheduling				
Manage EPCM Services to achieve Project Milestone Schedule		R		For EPCM Scope
Prepare Scheduling Development and Control Plan		R		For EPCM Scope
Implement Scheduling Development and Control Plan		R		For EPCM Scope
Develop Scheduling Procedures		R		For EPCM Scope
Prepare detailed Project Control Schedule and updates		R		For EPCM Scope

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Responsibility Assignment Matrix - Nalcor Energy / EPCM Consultant

(Refer to Agreement LC-G-002 for Inclusive Listing of Responsibilities)

CORE ACTIVITY	RESPONSIBILITY ASSIGNMENT		NOTES
	Nalcor Energy	EPCM Consultant	
Prepare detailed schedule of Engineering Activities by work Package		R	For EPCM Scope
Prepare detailed schedule of Equipment Procurement by Package		R	For EPCM Scope
Prepare detailed Construction Schedules and updates		R	For EPCM Scope
Prepare schedules showing sequence and timing for individual Contracts		R	For EPCM Scope
Prepare work hour histograms and "S" curves		R	For EPCM Scope
Cost and Schedule Stewardship			
Convert EPCM Consultant's Services Budget and Sanction Cost Estimate into a Project Budget		R	For EPCM Scope
Prepare Cost Management Plan		R	For EPCM Scope
Implement Cost Management Plan		R	For EPCM Scope
Develop forms and Procedures for Capital Cost Control		R	For EPCM Scope
Develop Progress and performance management procedures		R	For EPCM Scope
Code of Accounts for Asset Classification and Capitalization	R		
Cost Control for the Work		R	For EPCM Scope
Maintain and update EPCM Budget		R	For EPCM Scope
Allocate funds for Contract Change Orders	R		
Receipt and review of contractor cost reports		R	For EPCM Scope
Prepare monthly Project Cost Report		R	For EPCM Scope
Management of Change			
Prepare Change Management Plan for EPCM Project		R	
Management of Change within EPCM Services		R	
Engineering / Design Change Management		R	Using EPCM's process, linked to Project MOC process.
Maintain the individual Contract Scope Change Register		R	
Accounting & Invoicing			
Prepare Invoicing and Payment Plan for construction contracts and supply agreements		R	
Establish a Project Bank Account to Disburse all Payments	R		
Attest invoices from Vendors/Contractors		R	
Issuing Payments	R		
Submit detailed invoice progress payment listing complete with reconciled order status as stipulated in the purchase order		R	
Final Plan Cost Reconciliation and Closeout Report		R	
Maintain a comprehensive Accounting service to maintain a full set of books of Accounts in accordance with General Accepted Accounting Practice for the entire Project Cost through to Balance Sheet	R		
Annual Audit of Project Accounts	R		
Prepare and maintain a comprehensive Assets Register which reconciles with the total Project expenditure	R		
Cash Management	R		
Maintain Payment Ledger	R		
Develop Currency Management Strategy	R		
Prepare monthly Cash Flow Report		R	
Prepare Certificates of Payments		R	
Forecasts for Cash Flow demand and foreign currency requirements		R	
Project Tax Management	R		
Risk Management			
Prepare Risk Management Plan for scope within EPCM Services		R	
Approval of Contractor Risk Management Plans		R	Dependent upon contract form.
Project Risk Assessments		R	Within EPCM scope
Management of Tactical Risks		R	Within EPCM scope. Nalcor approves plans.
Management of Strategic Risks	R		Project wide.
Establish Project Insurance Program	R		Project wide.
Information Management			
Prepare Information Management Plan		R	

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Responsibility Assignment Matrix - Nalcor Energy / EPCM Consultant

(Refer to Agreement LC-G-002 for Inclusive Listing of Responsibilities)

CORE ACTIVITY	RESPONSIBILITY ASSIGNMENT		
	Nalcor Energy	EPCM Consultant	NOTES
IS/IT			
Infrastructure integration of Business Systems, if required	R	R	Requirements to be determined.
IT Infrastructure Contractor Offices/sites.		R	
Hardware/Software for NE-LCP team members located at Contractor offices/sites.		R	
Help Desk Support for NE-LCP team members located in Contractor offices/sites.		R	
Document Management			
Management of Engineering data and documents.		R	
Management of Vendor data and documentation.		R	
Management of Contractor data and documentation		R	
Provide Company with on-line / electronic access to key documentation		R	
Project Information Coding	R		EPCM Implements
Document /Data Standards (formatting)	R		EPCM Implements
Signing, stamping and sealing of Engineering documents		R	
Document Review Coordination		R	
Provision and use of existing project data/documentation	R		EPCM Utilizes
Deliverables List Submission Timing Matrix		R	
Prepare Final Documentation		R	
Deliverables Handover/Retention Matrix		R	
Benefits and Training			
Adhering to Nalcor/LCP hiring adjacency protocol and commitments from other agreements		R	
Meeting Participation Nalcor/LCP objectives with respect to under represented groups		R	
Developing and Delivering Training, orientations and apprenticeship programs			Apprenticeship Programs require Input by EPCM
Encouraging relevant stakeholder groups to access and develop training opportunities	R		
Providing manufacturers, consultants, contractors, and service companies in Newfoundland and Labrador with full and fair opportunity to participate on a competitive basis in the supply of goods and services		R	
Developing and Implementing supplier development Initiatives		R	
Implementing Diversity plan and Diversity Commitments as per other Agreements		R	
Carrying out consultant and contractor proposed programs in Newfoundland and Labrador to promote education, technology transfer and research and development		R	
Collecting and reporting Relevant Benefits Data as per Nalcor/LCP Benefits Criteria		R	
Defining and Executing commitments based on Nalcor/LCP Benefits Strategy and other agreements		R	