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Lower Churchill Project

Proposal

**Reinstatement of the Engineering, Procurement
and Construction Management Services for
Construction of Project Components 1, 3 and 4
of the Lower Churchill Project**

June 2016

*For internal purposes
only*

SNC-Lavalin Inc.
Hydro & Power Delivery



TABLE OF CONTENTS

	PAGE
1 INTRODUCTION	1
1.1 Project Description.....	1
1.2 Scope of Work – Division of Responsibility	1
2 PROJECT RECOVERY IMPLEMENTATION AND EXECUTION STRATEGY.....	2
2.1 Project Execution	2
2.2 Key factors and Approach.....	3
2.3 Opportunities	6
3 Project Management.....	6
3.1 Staffing Strategy	7
3.2 Safety Plan	7
3.3 Regular Meetings.....	8
3.4 Environmental Control and Compliance Plan.....	8
3.5 Engineering	8
3.6 Safety Reviews	8
3.7 Participation in Risk Management Reviews	9
3.8 Participation in Constructability Reviews.....	9
3.9 Control of Scope Changes.....	9
3.10 Quality Control.....	9
3.11 Interfaces with Construction, Field Engineering and Pre-Commissioning.....	9
3.12 Archiving and Transfer of Documents to NALCOR	10
3.13 Construction Strategy	10
3.14 Mechanical Completion (MC).....	10
3.15 Pre-commissioning Tests and Turnover Plan.....	10
3.16 Material Management	11
3.17 Progress Management Based on an “Earned Value” Performance Monitoring.....	11
3.18 Construction Progress Measurement.....	11
3.18.1 Pre-commissioning Progress Measurement.....	11
3.19 QA and QC Plan	12
3.19.1 Quality Planning.....	12
3.19.2 Audits	12
3.19.3 Corrective and Preventive Actions.....	13
3.19.4 Continual Improvement by Implementing a Lean Process	13
3.19.5 Site Quality Assurance.....	13
3.19.6 Supplier / Contractor Monitoring “Quality Surveillance and Inspection”	14
3.20 Risk Management	14



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4	TRANSITION TEAM.....	15
4.1	Methodology.....	15
4.2	Preparation in Advance of the Project Task Force Review.....	15
4.3	Team Structure.....	15
4.4	Conducting the Task Force Review.....	15
4.5	Reporting.....	18
4.6	EPCM – Commercial Requirements.....	19
5	TEAM ORGANIZATION AND TEAM MEMBERS	19



1 INTRODUCTION

Further to our meeting dated June 3rd, 2016 in St. Johns, NL and as requested by Nalcor, SNC-Lavalin Inc (SLI) is pleased to provide herewith our approach and strategy to reinstate SNC-Lavalin to perform the engineering, procurement and construction management services for all construction activities required to build Project Components 1, 3 and 4 of the Lower Churchill Project and also to propose a Project Delivery Management team change to enhance leadership for the Muskrat Falls Generation Project and Power Delivery Project accordingly.

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1.1 Project Description

The Lower Churchill Project is a major hydroelectric complex in extension downstream of the existing Churchill Falls powerhouse (5,428 MW) built at the end of the sixties on the Churchill River in Labrador. The LCP is comprised of 4 major components.

- ❑ Component 1: Muskrat Falls Hydroelectric Development (824 MW under construction), located 25 km south of small city called Happy Valley/Goose Bay on the shore of the Labrador Sea. Includes powerhouse, spillway, 2 dams.
- ❑ Component 2: Gull Island Hydroelectric Development (potential I of 2,250MW), located 225 km downstream of Churchill Falls.
- ❑ Component 3: High Voltage DC Transmission System Specialties. Includes HVDC converter stations at Muskrat Falls and Soldiers Pond (near St. John's), and Cable Transition Compounds at the Strait of Belle Isle (between NFLD & St. John's).
- ❑ Component 4: High Voltage O/H Transmission Lines. Includes, 00km HVDC from MF to Soldiers Pond, and 2 x 260 km HVAC 315 kV lines from MF to Churchill Falls, and AC substations).

1.2 Scope of Work – Division of Responsibility

The Work is limited to the supply and construction packages, which will be transferred under SNC-Lavalin Management and Supervision to undertake the completion of the Lower Churchill Project as per the following battery limits:

In scope:

- C1 - Muskrat
- C3 - HVDC
- C4 - Transmission lines

Out of scope:



- Financial Reporting
- TL 267
- Maritime Link
- IBA relation
- Permit and Environmental

2 PROJECT RECOVERY IMPLEMENTATION AND EXECUTION STRATEGY

2.1 Project Execution

Upon Nalcor's notice to proceed, SNC-Lavalin will immediately implement a 100 day program timeline as outlined in attachment **xxxxxxxxxx** to set the all necessary activities and leadership to successfully reach in a timely manner expectations and goals.

The 100 Day Plan consist of the following task:

- Milestone definition
- Nalcor nomination of the Owners representative
- Set Steering Committee Requirements
- Mobilize the Project Management Key position
- Mobilization of the Transition Team
- Identification of Commercial requirements
- Revisit current Work Processes
- Goals and expectations for decisive project Master Plan



2.2 Key factors and Approach

The recommended approach and strategy is to ensure an immediate focus on project execution and monitoring with the Project Management Organization in place while the Transition Team are overarching on contract status, issues, gaps and opportunities. Therefore, the team members are known Subject Matter Experts (SMEs) in the business who will scrutinize work processes and execution as follows;

- Review and Assess EY Report
- Current Purchase Orders and Contract performance and issues
- Commercial opportunities or liquidated damage
- Schedule and cost opportunities and exposure
- Claims process status and recommendation
- Labor relation exposure



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This team is comprised of senior project specialists who bring extensive expertise and lessons learned pertaining to all key areas of project execution, including:

- Project Management
- Project Set-up
- Project Controls
- Value Improvement Practices
- Regional Considerations
- Technology Integration
- Constructability

The Transition Team outlined in attachment **xxxxxxxxxxxxx** will work directly within the project during the 3 months transition plan phase of the project to help the project team establish the core principles to efficiently deliver a high-quality project using SNC-Lavalin's proven project execution methodologies in order to assess the project and to recommend additional value-improving measures as may be identified.

The main key factors to alleviate the Lower Churchill Project Delivery throughout its Project Management and Transition Team organization is based on the following;

- Proven processes in the industry
- Integrated project Management System
- Appropriate Control Point, Baseline and Reporting
- Analysis and Variations
- Corrective actions a Recommendation

The Project Management team outlined in the attachment **xxxxxxxxxxxxx** will ensure sound execution as describe herewith in section 3, industry best practices covering all project scope of services in order to avoid interruptions, namely:

- Health and Safety programs and procedures
- Environmental Protection program
- Coordination of all construction activities executed by contractors and site services
- Supervision of construction quality
- Progress monitoring
- Management of the Industrial Relations to maintain a good working environment and to reach the expectations in terms of worker productivity

- Maintain focus and data transfer for Nalcor commitment to Newfoundland



and Labrador Benefits obligation and reporting

- A seamless transfer of the new equipment to the pre-commissioning group, where applicable.
- Meet the cost and schedule milestones objectives.

Section 3 and Section 4 hereafter is providing more details and responsibilities with regards to standard scope and processes respectively for the Management a Transition team. However, it is expected that SLI will carry the work as set forth under the contract Exhibit 3 - Scope of Services.

2.3 Opportunities

The Management team will emphasize at all time on all elements of the project during the transition phase in order to seek for schedule, quality and cost recommendation to the benefit of Nalcor such as:

- Relocation of staff when possible to save on allowances
- Organize site base engineering support for efficiently
- Reduce project roles when possible to centralize work
- Support Owners team to avoid duplicate roles
- Foresee market capability and changes when possible
- Optimize Indirect cost and support for EPCM and Nalcor

3 Project Management

SNC-Lavalin Project Management Team will provide the personnel, the work process and project controls to efficiently manage the activities. Since the construction work at the site is currently underway, a very good understanding of the progress so far is required, as is a clear definition of the nature of the work to be accomplished from now on. The overall strategy for the implementation plan is based on the following:

- Establishment of the appropriate strategy and resources necessary to meet or surpass the project objectives in terms of Health, Safety and Environmental Protection
- Achieving the project goals in terms of sustainability for both the local community and Client
- Meeting the LOWER CHURCHILL PROJECT targets
- Completing the project within target budget and target milestone dates

These goals will be achieved by incorporating the following:

- Detailed Project Scope of Work (SOW) aligned with to the Project objectives
- Robust control of the project changes and variations

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- ❑ Streamlined Project organizational structure which permits a clear definition of the roles and responsibilities of each position and the identification of a Single Point of Accountability (SPA)
- ❑ Application of the best project practices and of a continuous improvement process based on lessons learned, empowerment of the participants, and an efficient communication process
- ❑ Fine-tuning of the Project Implementation Plan at each stage in order to comply with the project objectives and adapted to the specific requirements of the scope of work in a Brownfield project environment
- ❑ Efficient “hands on” management of the project activities through timely and accurate reporting and follow-up using the Project KPIs (Project Dashboard)
- ❑ Proper and timely forecasting of costs and schedule.

3.1 Staffing Strategy

SNC-Lavalin will mobilize its key resources, according to the approved mobilization plan, from current employees with an extensive experience in a hydro and mega project environment in Canada and overseas. The key element is the significant project experience that SNC-Lavalin will bring to the LOWER CHURCHILL PROJECT in a very short period of time.

3.2 Safety Plan

SNC-Lavalin will implement the current Health and Safety (H&S) Program to meet and exceed NALCOR requirements. Additional reviews will be performed at the beginning of the execution to ensure full compliance and alignment with all stakeholders and project team.

The project organization will implement NALCOR's H&S policies and will guarantee that the objectives will be accepted by all Project stakeholders, including SNC-Lavalin, site and off-site contractors in all site areas, and all project offices.

The safety implementation plan will adopt an approach of leadership in safety by all.

SNC-Lavalin recognizes that any sound safety program is based on full involvement of the construction leaders; our systems and procedures are based on this key principle.

The Safety Program will reflect the specific requirements of the project environment and will integrate the fatality prevention plan developed by SNC-Lavalin through our Critical Risk Control Protocol.

During execution, the H&S program will be reinforced to adapt to the increase of construction labor and activities and to match the critical milestones of the Project.



3.3 Regular Meetings

The internal communications with regards to the project progress will take place through a series of management meetings to be held as fixed intervals. The key management meetings are outlined below:

Table 3.1: Key Management Meetings

Meeting	Frequency
SNC-Lavalin Project Sponsor Review	Monthly
Safety Steering Committee	Monthly
Engineering Coordination Meeting	Weekly
Pre-operational System Verification	Weekly
Milestone Progress	Monthly
Contract Progress	Weekly
Project Cost Trend and Forecast	Monthly
Risk Trend	Monthly

3.4 Environmental Control and Compliance Plan

SNC-Lavalin will implement the Environmental Control and Compliance Plan to meet or exceed NALCOR requirements. Additional reviews will be performed at the beginning of the execution to ensure full compliance and alignment with all stakeholders and project team.

The project organization will implement NALCOR's Environmental Protection policies and will guarantee that proper practices are applied by all Project stakeholders, including SNC-Lavalin, site and off-site contractors in all site areas, and all project offices.

During execution, the Program will be reinforced to adapt to the increase of construction labor and activities. SNC-Lavalin recognizes the nature of the work to be performed and the potential impact on the local communities and the environmental sensitivity of the location.

3.5 Engineering

All engineering progress will be reassessed per component and by EPC packages in order to monitor and align with the overall project schedule for risk and interfaces with external stakeholders.

3.6 Safety Reviews

Given the nature of the mandate, safety reviews would not be performed by SNC-Lavalin. However such documents shall be made available by NALCOR to SNC-Lavalin team, namely H&S, Hazard and Operability studies (Hazop) and Chazop reviews.



3.7 Participation in Risk Management Reviews

The Construction Management Team will conduct its own risk management sessions to identify and evaluate risk elements associated with the Work, and to identify and implement mitigation measures for each identified risk element.

3.8 Participation in Constructability Reviews

Construction Management Team will conduct review sessions for the major construction packages identified as part of the Work, and will record the observations and comments of the Task Force review team. If comments involve engineering input to improve constructability, then the items will be conveyed to Nalcor for their input and solution.

3.9 Control of Scope Changes

The SNC-Lavalin team will identify any scope changes in the contract packages that may impact the project cost and schedule and will initiate the scope changes process.

Changes will be processed through the change management procedure and the impact on deliverables or schedule will be integrated into the PM+ system database.

3.10 Quality Control

The QC Supervisor will be responsible for the quality of the deliverables. The QC Supervisor will prepare and implement a document quality control procedure for the review, checking and approval of documents. The QC Supervisor and the QC team will proceed with regular audits of document quality control activities to ensure traceability and compliance with the ISO QA Standards.

3.11 Interfaces with Construction, Field Engineering and Pre-Commissioning

The SNC-Lavalin team will interface with the site team at various stages of the project execution:

- During the execution of the construction and installation contracts, to support the construction supervisors: answering technical queries, proposing or approving of design changes required to correct safety issues or to comply with a revised construction strategy
- During the pre-commissioning and handover process, to support the pre-commissioning team: answering technical queries and issuing of design changes for correction of the remaining deficiencies.



3.12 Archiving and Transfer of Documents to NALCOR

SNC-Lavalin will prepare and assemble “As-Built” documentation for the Project for handover to Others / NALCOR. The relevant documentation will be transferred electronically to NALCOR through Document Control at a mutually agreed date following the handover of each system.

3.13 Construction Strategy

The construction team will prioritize the activities which are the most critical for the execution strategy in order to meet the schedule.

SNC-Lavalin’s construction methodology, sequencing and contracting strategy has been developed from experience gained during benchmarked projects in similar environments in Canada and worldwide as well as with similar scope and technology. Over the years, construction methods have been improved using precast, pre-assemblies and modularization. After a full constructability review, additional improvements are implemented and customized for each new project.

3.14 Mechanical Completion (MC)

The completion of construction activities will be achieved with mechanical completion which comprises:

- Construction completed in accordance with drawings and specifications
- All tests and inspections completed in accordance with specifications
- Completion of check lists
- Continuity tests
- Leak and pressure tests
- First fill of oils and lubricants.

3.15 Pre-commissioning Tests and Turnover Plan

On completion of the MC activities, pre-commissioning (or pre-operational verification: POV) activities will comprise:

- Flushing and purging of lines
- Equipment preparation
- Verification of controls
- Adjustment of programming
- First energization
- Rotational checks
- Final alignment adjustments
- Correction of deficiencies
- “No Load” tests.

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On completion of pre-commissioning for a sub-system, system or facility, the Pre-commissioning team will prepare a Practical Completion Certificate (PCC) which will be formally “handed over” to NALCOR for “acceptance”. The certificate will include the MC and pre-commissioning records and a list of any outstanding minor deficiencies.

The following diagram illustrates the process from Mechanical Completion to the Final Completion of the Project.

3.16 Material Management

SNC-Lavalin has implemented a well-defined material management interface to ensure that all material necessary for the timely delivery of our scope of work is available at the proper time and with the proper characteristics within its proprietary Project Management System (PM+).

3.17 Progress Management Based on an “Earned Value” Performance Monitoring

Given that work is already progressing, SNC-Lavalin will continue the fully integrated monitoring into SNC-Lavalin PM+ system, for reporting on cost control, commitment, and spending.

The construction schedule will be integrated at the package level. Relationships are developed in the project schedule which will be linked in Primavera and based on package award dates and the required for construction issue dates.

The deliverable status (forecast completion dates) will be reviewed regularly. Progress reports will be produced on a monthly basis to determine engineering progress in terms of scheduled delivery steps of engineering documents. Two (2) week look-ahead reports will be used for short term planning while the CPN reports by area, reviewed every week, will focus on a three (3) months look-ahead.

A progress achievement will be done by the ratio of the earned hours and of the total of spent and forecast-to-complete hours. The man hour expenditure is reported on time sheets according to the cost code breakdown of engineering. Spent hours and earned values will be compared to produce performance index charts.

3.18 Construction Progress Measurement

The measurement of the progress and tracking of the schedule will be under the responsibility of the Site Project Control function.

The progress will be measured on the basis of actual quantities (earned values) against planned quantities. The performance will be used to forecast completion dates. The activities will be monitored and tracked against the detailed level-4 schedules specific to each contract package.

The impact of any slippage or opportunities resulting from an increase in productivity and any action proposed will be reported to the Project Manager for final decision.

3.18.1 Pre-commissioning Progress Measurement

The Site Project Control will also measure the progress of the pre-commissioning activities based on the actual progress in each handover package.



3.19 QA and QC Plan

SNC-Lavalin Quality Management System (QMS) will be implemented on the LOWER CHURCHILL PROJECT Project. The QMS will be maintained and continuously improved in accordance with the requirements of the International Standard ISO 9001:2000. This system is audited on a regular basis in accordance with ISO Standards.

The Project Procedures Manual will be revised on a continual improvement basis to include lessons learned from SNC-Lavalin experience in general and from project-specific findings.

A Project-specific Quality Plan will be developed and will be implemented for the execution phase of LOWER CHURCHILL PROJECT.

The key QA management functions will be to:

- Supervise the writing and application of the Project Procedures Manual
- Establish the quality requirements of suppliers and contractors jointly with the procurement group
- Support the construction group relative to the implementation of the contractors' quality programs
- Conduct internal and external audits and reviews of the QMS including management of the disposition of any non-conformities through corrective action
- Provide quality input into the preparation of engineering requisitions
- Review and approve QA deliverables
- Participate in third party audits conducted by NALCOR and SNC-Lavalin.

Given the nature of the work at the site, SNC-Lavalin recommends that all QA/QC expediting activities should be done directly by the SNC-Lavalin team in order to maximize synchronization of activities and efficiency in correcting deficiencies.

3.19.1 Quality Planning

A Project Quality Plan will be developed to include all project quality requirements, procedures and steps to manage and control all processes. The Quality Plan identifies the key factors which contribute to the quality of products and performance and encompasses all phases of project.

Management, project controls, engineering, procurement, construction and pre-commissioning. All activities within each of these phases are identified within this Quality Plan.

3.19.2 Audits

In order to ensure procedures are implemented and maintained, SNC-Lavalin will conduct internal audits at planned intervals to determine compliance with the project quality management system.

The audit program will take into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits.



Independent peer reviews may be conducted on selected critical work packages.

3.19.3 Corrective and Preventive Actions

SNC-Lavalin will implement within the Project Quality Management System a standardized procedure for corrective and preventive actions to be taken to eliminate the potential for non-conformances / incidents or accidents and to prevent the recurrence of non conformances. The procedure comprises the following steps:

- Non conformance identification
- Actions to mitigate impacts
- Investigation of the non conformance cause
- Actions to prevent reoccurrence of incidents / accidents
- Implementation of the corrective / preventive action
- Checking that the measures under Nalcor have been successful
- Recording the changes of procedures that have resulted from the corrective or preventive action.

3.19.4 Continual Improvement by Implementing a Lean Process

SNC-Lavalin will use the records from the Project Quality Plan, the outcomes from the audits performed and a systematic approach to implement a Continuous Improvement Program based on the principles of Lean management.

At regular intervals during the execution phase, SNC-Lavalin will proceed with a systematic review of the KPIs to identify opportunities and to implement Lean projects. A certified facilitator will assist the Project team in the process.

The Lean principles aim at offering tools to sustain cost reduction by eliminating all kinds of waste in the work processes and by increasing productivities. Any opportunities identified by project team members will be reviewed by the project management, and initiatives for improvement will be analyzed following the Lean tools. Opportunities could come from SNC-Lavalin work processes and from any work processes during construction execution considering that many tasks will be repetitive and there will be room for improvement.

SNC-Lavalin has used the Lean principles and tools on several projects in the last three years in Canada and overseas.

3.19.5 Site Quality Assurance

The Construction Manager will have the responsibility, through the Site Quality Supervisor, to ensure that an effective quality management system are implemented in order to ensure that the overall quality requirements of the project are met with a “No Rework” pro-active approach to the quality.

All contractors will be required to implement a quality assurance system as specified in the ISO 9000 series of standards. Contractors are responsible for the quality control of their construction activities, including design, manufacturing, construction, installation and testing. SNC-Lavalin inspectors check the work independently to ensure compliance by the contractor to his quality assurance system.

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3.19.6 Supplier / Contractor Monitoring “Quality Surveillance and Inspection”

At the Package kick-off meeting, the Inspection Supervisor will establish the level of quality surveillance and inspection required for each contract. The evaluation is based on the engineering criticality rating, product, manufacturing complexity and characteristics, type of service and schedule. An increased level of surveillance may be assigned to contractors of less experience in current project requirements and expectations.

3.20 Risk Management

SNC-Lavalin understands client needs for risk management and has developed a series of procedures covering a wide range of concerns across projects. These procedures are meant to be applied broadly across different projects. They develop a common vocabulary for communicating risk management activities unambiguously and help create an environment and culture where risk can be discussed openly and managed effectively. The project risk management procedures establish the context and identify the practices to successfully identify, analyze, evaluate, treat, mitigate, monitor and communicate risk.

SNC-Lavalin’s Risk Management tool specifically for vendors includes the management of all cost and schedule risks within the scope of the vendor’s currently contracted work and for any future phases of the project where it is anticipated that the suppliers and contractors will participate.

Related to purchasing and contract procedures and if required, SNC-Lavalin identifies any risk which might cause the project schedule to deviate from the project baseline (including any delays resulting from quality or technical issues) or which might threaten the completion of the work or of any intermediate deliverables (documentation or hardware) according to the contractually agreed delivery dates. Cost is defined as any risk which might cause the project cost to deviate from the project baseline; including that resulting from quality, technical and schedule issues.

SNC-Lavalin’s MOINS-RISC-LESS project risk management software is a database acting has a living depository of all the risks identified. Our teams use this tool continuously to keep current throughout all phases of the project and update it as required to support target reviews. MOINS- RISC-LESS supports the risk management process for identifying, analyzing, and prioritizing threats and opportunities and for recording the mitigation plan, risk owners, and dates. Through various risk tracking reports, the tool facilitates follow-up and lessons-learned.

SNC-Lavalin considers risk management as an important and key step in project execution. All project team members must be inducted to the risk management process to create and open environment for risk management.

SNC-Lavalin will implement these procedures as needed for the LOWER CHURCHILL PROJECT.



4 TRANSITION TEAM

4.1 Methodology

The recommended Task Force review will be conducted from a “snap-shot” perspective. Activities include outlining the main project concerns for all related areas of activity as well as highlighting any available opportunities to reduce cost and schedule.

The Task Force Team will make use of snap-shot reports. The preparation of the snap-shot report is specified in the form described herein. An example of a snap-shot report is presented in **Appendix ??**. The snap-shot report will be supported by the Task Force Project Diagnostic and Remediation Actions Report, a hands-on report detailing all the critical areas identified by the Task Force as well as associated proposed remedial actions.

4.2 Preparation in Advance of the Project Task Force Review

Although the Task Force Review is not a detailed compliance audit, it is important that the Task Force reviews the prime contracts associated with the 3 major components, the latest costs and trends, the master schedule, the project progress reports, key performance indicators (KPIs), and the risk register (if available) prior to conducting the review. This will facilitate the Task Force’s understanding of the project status as well as its performance against the initial plan. It will allow the team to focus on specific critical areas that require remediation.

4.3 Team Structure

The Task Force will be comprised of the following specialists:

- Project Manager
- Project Controls Manager
- HSSEC Manager
- Lead Contracts Administrator
- Construction Manager
- Risk Manager.

4.4 Conducting the Task Force Review

In preparation of the review, the following information is required as a starting point:

- Project organizational chart(s)
- Details of the cost estimate for all ongoing installation contracts
- List of awarded contracts and the contract value versus the budget for each contract
- Material and contract assignment schedule
- Project schedule and its update in line with the construction work in progress
- Engineering progress

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- Trend and scope change register
- HSSEC manual and project data
- Risk management plan.

The Team will also require access to the document control site.

The information listed above is a minimum requirement to start the review. Other documents may be required during the mandate. The collaboration of Nalcor is essential for successful completion of the review and to meet the goals set by the Task Force.

Based on the preliminary audit checks performed by the Task Force prior to the review, the Task Force will hold open discussions with i) the Client team, at the head office and at the project site offices (review of adequacy of the project's organizational charts), ii) the project head office in order to perform a risk assessment to evaluate and highlight all major project issues, iii) Engineering, iv) Procurement / Contracts, v) Cost and Planning for Capex and expenditure assessment, and vi) the constructability team.

Once this review is completed, the Task Force will carry open discussions with Nalcor and the Site Project Managers as well as with the appropriate members of the Project Team: construction / constructability reviews with the Project Team, Contractor's risk review, contract status, project control, engineering (technical capability), resources and equipment availability (other than actual site contractors), Pre-Commissioning, and Financial Capacity.

The risk assessment report is further developed based on site-gathered information, with the objective of establishing details on major project issues. The risk assessment report will provide detailed risk mitigation and action plans to be implemented along with an action owner for each risk identified. The risk report is both quantitative and qualitative in nature.

The project home office and site reviews will allow the Task Force to elaborate the elements highlighted as requiring remediation and / or optimization. This will also allow the Task Force Team to ascertain if the processes, as implemented, meet the intent of SNC-Lavalin Best Practices as well as provide suggestions for possible improvement opportunities.

During this project assessment stage, the Task Force will, whilst taking into consideration any findings and recommendations of *EY Cost and Schedule Review Report*, carry out an assessment of the project status in order to identify opportunities for improvement.

This Project Assessment Stage would commence as soon as possible. Whilst reviewing works in progress, the assessment will serve to structure a transition toward the implementation of a Revised Project Execution Plan.

Among the above-mentioned review items, intuitively, we believe the following will be key drivers to affect positive change for the project:



Organization

- Assessment of Project Delivery Team organization. Fill certain key positions by experienced SLI staff or existing staff selected by new Project Director.
- Aim to minimize any existing duplicate assignments/positions and review the responsibilities in order to optimize utilization of resources. Reduce the LCMC Organization Chart from present 644#s of resources and increase efficiency, competency whilst altogether reducing costs.

Existing Contracts

- Assessment of all contracts and their progress.
- Pointed review of the Astaldi and Valard Contractual issues and claims, including a review of the Options Analysis prepared by Westney for former Nalcor CEDO Ed Martin.
- Evaluate necessity to breakdown scopes and invite new experienced contractors to undertake parts of all of the revised scopes, as required.
- Aim to minimize total cost impact in consideration of potential schedule impacts.
- Revise the Project Execution Plan to implement best options with optimized risk impact.

Schedule

- Re-assess the overall project schedule.
- Revise WBS as required through negotiations with contractors where schedule or cost benefits may lie.
- Assess if any benefits may be gained through modifications in design.

Supply Chain Management & Procurement

- Assess the status of procurement works and implement changes that result from the reassessment of contract, schedule, cost reviews.
- Renegotiation of T&Cs with existing contractors, as required.
- Negotiation with new contractors, as required.

Budget / Forecast

- Revise the overall budget in consideration of the above assessments.
- Re-forecast complete project in terms of cost and schedule.
- Assess contingency requirements and probabilistic outcomes.



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Risk Management

- Analyze Purchase Orders and Contractual performances.
- Assess internal and external interface between all stakeholders and project milestones.
- Perform complete project risk assessment in consideration of existing status with the aim of providing guidance in decision-making.

Quality

- Assess the necessity of de-scoping certain responsibilities with regard to QA/QC within contractor scopes if there are any quality issues with the execution of the works.
- Provide technical reassurance on North Spur, as required.

HSE and Ethics & Compliance

- True and non-negotiable values of SLI aligned with those of Nalcor Energy on a truly transparent basis.
- Provide technical reassurance regarding Methyl Mercury issue, as required.

The Task Force Manager owns the process.

4.5 Reporting

After careful review of the critical project components such as the cost estimate of all construction packages, the project trends, the critical path, the construction and engineering progress, the project management organization, HSSEC performance, procurement and contract administration, risk management and the utilization of the company's tools, procedures and resources, the Task Force will:

- Prepare the Project Diagnostic and Remediation/Recovery Action Plan Report
- Evaluate detailed course of action(s)
- Detail Weekly Action Plan(s) and progress meeting to be implemented
- Establish weekly high level reporting review.

The Project Diagnostic and Remediation Actions Report include as a minimum the following:

- Brief project summary describing the scope of work and project value
- Main critical issues identified by the Task Force
- Mitigation plan / action(s) taken
- Re-baseline of the project (protecting the cost and schedule)
- Project lifecycle road map



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- Critical project success factors
- Revised organizational chart(s)
- Communication protocol
- Pictorial listing of key project areas.

These are found in a typical Project Diagnostic and Remediation Actions Report.

The main concerns are reviewed with clear action plans and a path forward commonly agreed upon. Following the Snap-Shot meeting, the improvement actions suggested and approved during the meeting will be captured in an Improvement Plan.

4.6 EPCM – Commercial Requirements

Although the current services agreement is in place for SLI to execute immediately, there are several problem areas that requires resolution during the initial restructuring phase as follows:

- Applicable Liability Period Definition
- Late Personnel Authorization Approval
- Late Monthly invoice
- Commercial Management Representative
- Unit Rate Basis
- Input Tax Credit
- Work in progress from previous years
- Proprietary Project Management Systems Access
- Salary Adjustment Policy

5 TEAM ORGANIZATION AND TEAM MEMBERS

SNC-Lavalin is proposing a very knowledgeable team with similar and pertinent hydro and mega projects experience. These individuals will provide expertise as described above in Section 2 – Scope of Services and Methodology and as per the requirements of LOWER CHURCHILL PROJECT.

We have selected our proposed staff based on our current understanding of the Work requirements.

It should be noted that these organizational charts show highly qualified individuals with extensive expertise. Other team members include senior experienced individuals, many occupying lead positions in their spheres of expertise.

Refer to Project Management team curricula vitae of the candidates are presented in **Appendix ?**

Refer to Transition team curricula vitae of the candidates are presented in **Appendix ?**