

Muskrat Falls Project Oversight Committee

Committee Report – July, 2014



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I. Introduction

Muskrat Falls is one of the Province's largest and most important major capital projects. It will provide residents of the Province with clean, reliable energy at stable prices, with opportunities to export excess power through the Maritime Provinces via a subsea link. With current construction cost estimates of \$6.990 billion, a project of this magnitude and importance requires strong oversight and, as such, all stakeholders, including the Government of Newfoundland and Labrador, the Government of Canada and Nalcor Energy¹ had implemented various oversight mechanisms in the key areas of technical, financial and scheduling outcomes. In March, 2014, to strengthen existing oversight on behalf of the people of the province, the Provincial Government established an Oversight Committee (the Committee) to focus on project cost, schedule and risk management. The Committee's first report presents the work completed by the committee since its appointment. To pursue its task with utmost effectiveness, the Committee has developed processes for systematic and efficient flow of information; established, by engaging an external consultant with expertise in major capital project oversight, the kinds of data needed to carry out the mandate defined in the Committee's terms of reference; and reviewed information on existing oversight mechanisms, which can be leveraged to avoid duplication of effort and resources. With completion of this work, the Committee established an Oversight Framework to guide its future work and quarterly reporting. This report lays out that Framework, provides information on existing oversight mechanisms and highlights additional procedures that the Committee has commissioned to increase its oversight capacity.

¹ For the purposes of this report, Nalcor Energy's subsidiary companies involved as proponents of the Muskrat Falls Project will be referred to as Nalcor.

II. The Muskrat Falls Project Oversight Committee

The Committee meets on a monthly basis or more frequently as needed. Its membership comprises senior Provincial Government officials, including those that have been involved in oversight of the Project since its inception:

- Clerk of the Executive Council, Chair
- Deputy Minister, Department of Natural Resources
- Associate Deputy Minister, Department of Natural Resources
- Assistant Deputy Minister, Department of Natural Resources - Energy Policy
- Deputy Minister, Department of Finance
- Assistant Deputy Minister, Department of Finance - Taxation and Fiscal Policy
- Director, Debt Management, Department of Finance
- Deputy Minister, Department of Justice or designated solicitor
- Assistant Secretary to Cabinet for Economic Policy

The Committee assembled a Working Group of professionals possessing specialized skills in the areas of the law, engineering, project management, accounting, and auditing. The Working Group includes internal resources supplemented by external consultants with specialized expertise in major capital project practice. This group will inform and advise the Committee's work in monitoring the project on behalf of the Government of Newfoundland and Labrador.

III. The Oversight Framework

To ensure its work proceeds efficiently and effectively, the Committee developed an Oversight Framework to guide its work and fulfill its mandate. In developing this framework, the Committee carefully considered its terms of reference, its information needs (the information it can already access and the information it would need in the future), and existing Project oversight activities, through which assurances can be gained without unnecessarily duplicating effort.

The resulting Oversight Framework comprises the following key elements:

- The Committee's *Terms of Reference*, including its mandate and defined reporting frequency (Appendix B);
- A list of *Information Needs*, comprising all sources currently accessed and additional information accepted as best practice on major capital projects;
- The *Reporting Protocol* for providing information on Project cost and schedule performance to the Committee; and,
- *Existing Sources of Oversight* for the purposes of understanding the work and reports of other oversight providers; using that work where appropriate; and requesting Nalcor to direct these oversight providers to undertake additional oversight activities and reporting, when necessary and relevant to the Committee's mandate to provide *additional assurance*.

Given the scale and complexity of the Project, the Committee engaged Ernst & Young LLP (EY), an independent consultant with specialized skills in major capital projects, to provide advice on what information would be required to effectively monitor Project cost, schedule and risk. EY was also asked to provide advice respecting the Committee's governance structure, including required resources and associated roles and responsibilities.

EY made three main recommendations:

1. The Committee should review cost and schedule performance, forecasts and risk management, in addition to the validity of the costs incurred;
2. The Committee should be supported by specialized skills; and,
3. The Committee should align its information requests with conventional project controls and assurance practices as well as Nalcor's reporting rhythm.

All recommendations have been implemented and are detailed in this report. A copy of the EY report is attached as Appendix A.

Terms of Reference

The Committee is accountable to Cabinet for Project oversight and reporting on the Project's cost and budget performance, schedule performance, and cash flow requirements. Its formal Terms of Reference (attached at Appendix B) mandates it to provide reliable and transparent oversight so the public can have confidence that:

- **The Project cost and schedule are well managed** - the Committee will examine issues such as whether management processes and controls are well-designed and followed, contracts are being managed diligently and financial drawdowns comply with established processes;
- **The Project is meeting the cost and schedule objectives** – the Committee will examine issues such as how schedule performance and forecast compare to the plan, how cost performance and forecast compare with the budget, how cost and schedule forecasts compare with current performance, and how cash flow forecasts reflect the project's funding requirements; and,
- **The cost and schedule risks are being reasonably anticipated and managed** – the Committee will examine issues such as whether risks are being sufficiently identified and addressed and whether Nalcor has established adequate contingency to address outstanding Project risks.

The Committee will not participate in the day-to-day management of the Project. The Committee will not have oversight of health, safety and environment, quality, regulatory compliance and benefits tracking. These are specifically excluded from the Committee's scope and are administered or monitored by other Provincial Government Departments and Agencies.

Information Needs

EY reviewed information provided by the Committee, which contained key Project cost and schedule performance information, and advised on additional cost, schedule and other information required to fulfill the Committee's mandate. The recommended list of information was reviewed with Nalcor officials, who confirmed the information

is available. The Committee has accepted and will use the full listing of information advised by EY, available in the EY report at Appendix A.

The Committee's information requirements may be summarized as follows:

1. Cost, including baseline budget, contingency reports, cash flow reports, and, funding logs;
2. Schedule, including schedule development and control plan, performance graphing, and analysis and management of corrective action; and,
3. Other, including major contractor monthly progress reports, project policies/ plans/procedures, project risk registers, claims log and liens register.

Reporting Protocol

Nalcor will provide access to all the information requested by the Committee on a regular basis. The Committee will compare Project cost and schedule performance to the capital budget and Project schedule. Consistent with EY's advice, Government will align its information requirements with the Project's standard reporting rhythm.

On July 29, 2014, the Premier and the Minister of Natural Resources jointly issued a Shareholder's Letter to Nalcor Energy and its subsidiaries advising Nalcor of its information requirements (the Shareholder's Letter is attached at Appendix C). Information pursuant to this letter will be supplied by Nalcor as it is completed. It is anticipated that all information for the month ended June 30, 2014 will be available by the Committee by mid-August 2014. The letter prescribes the details and timing for the information required by the Committee. This information and all subsequent filings will form the primary basis upon which the Committee performs its Oversight role. The information is detailed in nature and some of this information may be commercially sensitive. Where necessary, in order to protect the Province's commercial interests as they relate to the people's investment in the Project, the Committee will report this information and the results of its reviews on a summary basis.

Existing Sources of Oversight

The Provincial Government has provided significant oversight for this project since its inception. The Federal Government has also established robust Project oversight mechanisms as conditions of the Loan Guarantee, including the requirement for an

Independent Engineer to conduct due diligence. The following are the key oversight processes for the Project:

Pre-sanction Reports: Before the Project was sanctioned and the Loan Guarantee was provided by the Federal Government, three independent reviews of the Project were completed:

- Navigant Consulting's September 2011 review of Nalcor's Decision Gate 2 figures;
- Manitoba Hydro Inc.'s (MHI) January 2012 report to the Public Utilities Board on the Two Generation Expansion Alternatives for the Island Interconnected Electrical System; and,
- MHI's October 2012 review of the Decision Gate 3 Muskrat Falls and Labrador Island Link compared to the Isolated Island Options.

Copies of these reports may be found online at;
<http://muskratfalls.nalcorenergy.com/newsroom/reports/>

The Independent Engineer: The Federal Government required Nalcor to retain the services of an Independent Engineer to represent the Federal Government's interests and ensure due diligence and compliance with the terms of the Loan Guarantee required to effect financial close and to ensure that the project is developed, maintained and operated in a manner consistent with Good Utility Practice². On August 27, 2012, Nalcor retained MWH Canada Inc. (MWH) as the Independent Engineer for the Government of Canada to work in conjunction with the Collateral Agent (Toronto Dominion Bank). The Collateral Agent is responsible for the distribution of the funds, borrowed under the federal loan guarantee, as required by the Nalcor subsidiaries to fund capital expenditures. MWH will retain this position through the construction phase of the Project.

Under the contract terms for the construction phase, MWH is responsible for:

- a. reviewing proposed work and quality control plans;
- b. conducting periodic on-site visits for observation of the work-in-progress to determine that the Project is proceeding in general accordance with the milestone schedule and the agreed upon design concepts;
- c. periodically reviewing quality control reports and laboratory test reports;
- d. consulting with Nalcor and contractors in advance of scheduled major

² Good Utility Practice means those project management, design, procurement, construction, operation, maintenance, repair, removal and disposal practices, methods and acts that are engaged in by a significant portion of the electric utility industry in Canada during the relevant time period, or any other practices, methods or acts that, in the exercise of reasonable judgment in light of the facts known at the time a decision is made, could have been expected to accomplish a desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition.

- inspections, tests or the start of important work phases;
- e. reviewing compliance to the Project schedule on a monthly basis through reports submitted by the construction contractors and on-site observation; and
 - f. reviewing the contractors' monthly invoices with the Owner and construction contractors during the on-site visits to verify accuracy.

MWH's first report, issued on November 29, 2013 may be found online at <http://muskratfalls.nalcorenergy.com/wp-content/uploads/2013/03/November-29-2013-Independent-Engineer-Report1.pdf>

As another measure of oversight, in order to be provided the necessary funds for the Project, the Nalcor subsidiaries, as borrowers, are required to submit detailed information to MWH and the Collateral Agent. These include construction reports and budget information. On a monthly cycle, the Nalcor subsidiaries submit to MWH and the Collateral Agent monthly drawdown requests along with supporting documentation comparing the actual costs and progress against the project budget and schedule. Through Nalcor, each of the major contractors for the Project also submits monthly updates to MWH with respect to the progress of their work during that month. After review and receipt of any required additional information, MWH recommends release of the funds by the Collateral Agent.

Nalcor's Internal and External Auditors: Nalcor's Internal Audit group is responsible for determining whether the organization's network of risk management, control and governance processes is adequate and functioning as intended. The Internal Audit group reports to Nalcor's Board of Directors and the Audit Committee. Nalcor's External Auditor is the independent accounting firm responsible for the financial attest auditing of the audited annual financial statement for Nalcor Energy and its subsidiaries. Deloitte LLP, Chartered Accountants, is the current independent firm responsible for these activities.

Nalcor's Boards of Directors: Nalcor Energy's Board of Directors is accountable to Government, which, on behalf of the people of the province, is the Shareholder of the corporation. Legislation requires that the Boards of Nalcor's Project subsidiaries (Labrador-Island Link Limited Partnership, Muskrat Falls Corporation, Labrador Transmission Corporation, and Lower Churchill Management Corporation) must include at least two (2) independent directors³. As part of the Project credit rating process, credit rating agencies required that at least one of the two independent directors must be a 'super' independent director⁴. These Boards are provided with

monthly and quarterly updates on the actual and forecasted Project expenditures, including comparison with the capital budget.

Nalcor's Management Processes: Nalcor's management systems have been created for the Project in major control areas consistent with best practices. Coverage was examined by Nalcor in the context of the KPMG Construction Controls Framework and the ISO 9001:2008 standards⁵. Pursuant to these management systems, Nalcor's senior executive and management receive regular reporting on the progress of the Project.

Nalcor's Quality Assurance Processes and Objectives: Nalcor is responsible for establishing a project quality management system to ensure that construction complies with all drawings and specifications. This system is to be documented in management plans, procedures and contract documents. Nalcor ensures compliance through a program of internal and external quality audits; reviews of supplier/contractor documents; and inspection, testing and acceptance of the work during manufacture, construction, and commissioning.

Office of the Auditor General: The Auditor General audits the financial statements and accounts of the Province on an annual basis. As part of that audit, the Auditor General reviews the work of Nalcor's external auditor to ensure the Province's investment in Nalcor is properly accounted for with appropriate disclosure. Furthermore, the Auditor General Act provides the authority for the Auditor General to conduct audits of financial statements and other accountability documents, evaluate management practices, and determine compliance with legislative and other authorities for all government departments and entities, including Nalcor.

³ An independent director is a person who is not a member of the Board of Directors of the Corporation or another Subsidiary or an employee or officer of the Corporation, another Subsidiary or the Crown.

⁴ A 'super' independent director is a duly appointed member of the Board of Directors who shall not have been, at the time of such appointment or at any time in the preceding five years: i) a direct or indirect legal or beneficial owner of any capital stock of the Corporation or of any of its Affiliates; ii) a creditor, supplier, employee, officer, director, family member, manager or contractor of the Corporation or any of its Affiliates; or, iii) a Person who Controls (whether directly, indirectly or otherwise) the Corporation or any of its Affiliates or any creditor, supplier, employee, officer, director, manager, or contractor of the Corporation or any of its Affiliates.

⁵ ISO 9001:2008 specifies requirements for a quality management system under which an organization demonstrates its ability to consistently provide product that meets customer and applicable statutory and regulatory requirements, and aims to enhance customer satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable statutory and regulatory requirements. More information may be found at: http://www.iso.org/iso/catalogue_detail?csnumber=46486

IV. Commissioning of Other Oversight Procedures

As significant oversight processes already exist for the Project, it is important for the Committee to understand these processes to identify the assurance they provide; to avoid unnecessarily duplicating these processes; and, to identify other activities that can be undertaken through these processes to provide additional assurance with respect to Project cost and schedule. The Committee has taken the following steps to increase its oversight capacity:

Independent Engineer: The Committee has identified that the Independent Engineer, MWH, is a key source of oversight assurance. As a result, the Committee has worked with the Federal Government, Nalcor and MWH to establish a formal arrangement to provide the Committee access to all materials and activities undertaken by the Independent Engineer. MWH will deliver certificates and reports to the Province concurrently with its provision to the Government of Canada. Further, representatives of the Province will participate in any meetings, site visits and conference calls among MWH, the Federal Government and Nalcor Energy and its subsidiaries. This provides the Committee with access to discussions, reports and findings of the Independent Engineer as it performs its due diligence activities relating to the Project. Members of the Working Group participated in site visits with MWH on July 16, 17 and 18, 2014, and attended workshops on July 14, 21 and 23, 2014. The Committee will continue to follow up with MWH on their analysis and findings as a result of these visits and their ongoing work. MWH is expected to make its next site visits in the fall, 2014. Its next report is anticipated to be released late in the calendar year.

External Financial Auditor: In addition to the annual audit of Nalcor's financial statements, the Committee has asked Nalcor to direct its independent external auditor to conduct additional auditing procedures with respect to the validity of costs charged to the Project. This is in addition to any review that the Provincial Government's Auditor General may undertake as part of his Office's audit of the Province's Public Accounts.

The Committee has also asked Nalcor to direct its independent External Auditor to prepare combined annual financial statements for the Project, separate from Nalcor's annual financial statements. The first set of combined annual financial statements for the Project, for the year ended December 31, 2013, is currently being prepared and will be released by September 30, 2014. Combined annual financial statements for the Project for subsequent years will be prepared in conjunction with Nalcor's corporate financial statements.

Internal Auditor: The Committee has gained an understanding of Nalcor's Internal Audit assurance framework. Nalcor advises this framework has been developed consistent with best practices as developed by the Institute of Internal Auditors⁶ (IIA). In June, 2013, the Institute of Internal Auditors reviewed Nalcor's internal audit activities and confirmed that these activities generally conform to the Standards and Definition of Internal Audit as published by the IIA. "Generally Conforms" is the top rating and means that an internal audit activity has a charter, policies, and processes that are judged by the IIA to be in conformance with the Standards. The Committee has also reviewed the Internal Audit Plan for the two-year period 2014 and 2015 for the Project and is working with Nalcor to prioritize areas for review, including a review of the Project controls and procedures for risk management.

The Committee will continue to identify opportunities to increase its oversight capacity and request Nalcor to direct additional oversight activity where it is relevant to achieving the Committee's mandate.

⁶ <https://chapters.theiia.org/IIA%20Canada/Pages/default.aspx>

V. Muskrat Falls Project Budget and Schedule

In December, 2012, at the time of Project sanction, the capital cost of the Project was estimated to be \$6.202 billion (referred to as the Decision Gate 3, or DG3, capital budget). At that time, the engineering design was approximately 50 per cent complete. In December, 2013, upon completion of the Federal Loan Guarantee and financing, and in consultation with MWH, the DG3 capital cost estimate was revised to \$6.543 billion. On June 26, 2014, Nalcor announced a revised capital budget of \$6.990 billion, based on engineering design that is now 98 per cent complete. Nalcor advises this increase was the result of a number of additional investments to enhance system reliability, operation and productivity, as well as impacts from external market factors.

The attached schedule, entitled Project Budget: Decision Gate 3 (DG3) Sanction / Financial Close / Revised June 2014, provides details of the original capital budget at DG3 when the project was sanctioned, the revised capital budget upon completion of the Federal Loan Guarantee and financing, in December 2013 and the June 2014 update by Nalcor. The attached schedule, entitled Milestone Schedule, provides key milestone dates for the construction phase of the Project.

These schedules have been presented based upon the three projects forming the development of the Muskrat Falls Project. The development includes:

- Muskrat Falls Generating Facility, an 824 megawatt (MW) hydroelectric generating facility consisting of two dams and a powerhouse at Muskrat Falls in Labrador.
- Labrador-Island Transmission Link, an 1,100 km High Voltage direct current (HVdc) transmission line from Muskrat Falls to Soldiers Pond on the Avalon Peninsula, including a 35 km subsea cable across the Strait of Belle Isle.
- Labrador Transmission Assets, two 250 km High Voltage alternating current (HVac) transmission lines between Muskrat Falls and Churchill Falls.

VI. Next Report

The Oversight Framework that has been developed will provide the basis for the Committee's quarterly reporting. The next report will be for the quarter ended September 30, 2014 and is scheduled to be released in November 2014.

Project Budget:

Decision Gate 3 (DG3) / Financial Close / Revised June 2014

Muskrat Falls Generation (in \$CDN Thousands)	Project Budget	Project Budget	Project Budget
Description	DG3 (Sanction) December 2012	Financial Close December 2013	Revised June 2014
NE-LCP Owners Team, Admin and EPCM Services	\$369,386	\$378,969	\$382,811
Feasibility Engineering	\$5,784	\$18,345	\$17,949
Environmental & Regulatory Compliance	\$28,883	\$20,312	\$24,312
Aboriginal Affairs	\$13,314	\$13,314	\$13,314
Procurement & Construction	\$2,236,921	\$2,719,626	\$2,786,766
Commercial & Legal	\$20,021	\$20,457	\$25,989
Contingency	\$226,849	\$94,255	\$120,847
Muskrat Falls Generation Total	\$2,901,158	\$3,265,278	\$3,371,988

Labrador

Transmission Assets (in \$CDN Thousands)

Description	DG3 Estimate December 2012	Financial Close December 2013	Revised June 2014
NE-LCP Owners Team, Admin and EPCM Services	\$89,306	\$76,238	\$99,973
Feasibility Engineering	\$2,240	\$256	\$220
Environmental & Regulatory Compliance	\$705	\$710	\$710
Aboriginal Affairs	\$188	\$188	\$188
Procurement & Construction	\$542,289	\$626,869	\$696,322
Commercial & Legal	\$2,479	\$2,030	\$3,141
Contingency	\$54,375	\$14,030	\$31,391
Labrador Transmission Assets Total	\$691,582	\$720,321	\$831,945

Labrador -

Island Transmission Link (in \$CDN Thousands)

Description	DG3 Estimate December 2012	Financial Close December 2013	Revised June 2014
NE-LCP Owners Team, Admin and EPCM Services	\$254,581	\$247,074	\$225,814
Feasibility Engineering	\$38,824	\$34,012	\$21,252
Environmental & Regulatory Compliance	\$25,751	\$25,768	\$22,306
Aboriginal Affairs	\$2,244	\$2,244	\$2,244
Procurement & Construction	\$2,181,118	\$2,135,212	\$2,426,095
Commercial & Legal	\$20,603	\$22,490	\$16,490
Contingency	\$86,628	\$79,355	\$72,280
Labrador-Island Transmission Link Total	\$2,609,749	\$2,546,155	\$2,786,481
MUSKRAT FALLS CAPITAL COST BUDGET TOTAL	\$6,202,489	\$6,531,754	\$6,990,414

The Summary Cost Categories are described as follows:

NE-LCP Owners Team, Admin and EPCM Services: includes the labor, facilities and overhead costs of the LCP Project team as well as costs of SNC Lavalin.

Feasibility Engineering: includes the cost of early stage engineering activities which are now complete.

Environmental & Regulatory Compliance: includes costs associated with environmental assessment, permits, licenses and similar such costs.

Aboriginal Affairs: includes costs associated with activities in the aboriginal communities along with obligations under the IBA.

Procurement & Construction: includes costs associated with the major construction activities and the award of contracts.

Commercial & Legal: includes costs associated with insurance, legal and other commercial activities.

Contingency: provision for additional expenditure, if required.

Milestone Schedule

Muskrat Falls Generation

Milestone Description	Planned Date
Project Sanction	December 2012 - Complete
North Spur Works Ready for Diversion	November 2015
River Diversion Complete	November 2016
Reservoir Impoundment Complete	November 2017
Powerhouse Unit 1 Commissioned - Ready for Operation	December 2017
First Power from Muskrat Falls	December 2017
Powerhouse Unit 2 Commissioned - Ready for Operation	February 2018
Powerhouse Unit 3 Commissioned - Ready for Operation	April 2018
Powerhouse Unit 4 Commissioned - Ready for Operation	May 2018
Full Power from Muskrat Falls	May 2018
Commissioning Complete - Commissioning Certificate Issued	June 2018

Labrador Transmission Assets

Description	Planned Date
Project Sanction	December 2012 - Complete
Hvac Transmission Line Construction Complete	June 2016
Churchill Falls Switchyard Ready to Energize	May 2017
Muskrat Falls Switchyard Ready to Energize	May 2017
Ready for Power Transmission	May 2017
Commissioning Complete - Commissioning Certificate Issued	June 2018

Labrador - Island Transmission Link

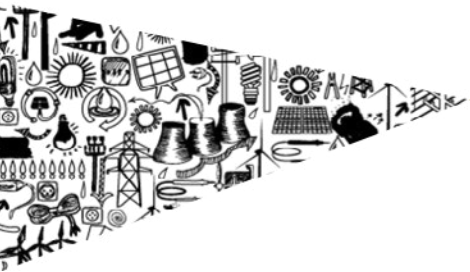
Description	Planned Date
Project Sanction	December 2012 - Complete
SOBI Cable Systems Ready	October 2016
Muskrat Falls Switchyard and Converter Station Ready for Operation	February 2017
HVdc Transmission Line Construction Complete and Connected	June 2017
Soldier's Pond Switchyard and Converter Station Ready for Operation	October 2017
Ready for Power Transmission	October 2017
Soldier's Pond Synchronous Condenser Ready for Operation	November 2017
Commissioning Complete - Commissioning Certificate Issued	June 2018

Appendix A: EY Report

Government of Newfoundland and Labrador

Review of Government protocols to oversee the Muskrat Falls Project

25 July 2014





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Charles Bown
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25 July 2014

Dear Mr. Bown,

Please find enclosed our final report regarding a proposed oversight protocol related to the Muskrat Falls Project.

The work was conducted in accordance with our Agreement. Our scope and procedures were limited to those described in that Agreement. This report is intended solely for the use of the Government of Newfoundland and Labrador. It is not intended to be and should not be used by any other party.

We greatly appreciated the opportunity to be of service to you and the Government of Newfoundland and Labrador.

Sincerely,

David Steele
Partner

Richard Noble
Associate Partner

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1

Executive Summary

1.1 Background

The Government of Newfoundland and Labrador ("Government") has initiated oversight protocols for the Muskrat Falls Project (the "Project"). This includes establishing an Oversight Committee and continuing efforts to define the Oversight Committee's terms of reference and related protocols.

EY has been engaged by the Government to conduct a third party assessment of the Oversight Committee's protocols under development. Program managers and other specialist resources from EY's Major Capital Projects practice were engaged to bring the necessary experience to deliver on this mandate. Over the course of the engagement, EY reviewed the documents provided by Government, interviewed Oversight Committee members and met with Nalcor representatives to understand the Project environment and governance landscape. EY provided recommendations based on our experience with other projects of comparable scale and complexity. These recommendations were presented at a meeting with the Oversight Committee.

Additional work was performed which included further meetings with Nalcor representatives to review the information available at Nalcor and develop a more detailed understanding of the assurance available through the Project Controls group, the Independent Engineer and other entities involved in the Project.

We understand that the Government's objective is to provide reliable and transparent oversight on the cost and schedule performance of the Project and to establish an effective communication channel to Cabinet and the general public. We were informed that other components of effective project oversight related to health, safety and environment, quality, regulatory compliance and benefits tracking are specifically excluded from the mandate of the Oversight Committee. It is also clear that it is not the Government's intention to play a role in the day to day management of the Project.

This report summarizes the work performed and the recommendations for the Oversight Committee.

1.2 Recommendations

The key conventional measure of project success is whether it delivers on its intended objectives on time and within budget. The project oversight and assurance functions are intended to monitor progress towards achieving those success criteria and also to reduce or eliminate surprises. Our recommendations are geared towards the Government's role in achieving this mandate while avoiding unnecessary duplication of effort.

The roles of different stakeholders as well as the Government's objectives have been considered to make the following key recommendations:

1. The Oversight Committee should review cost and schedule performance, forecasts and risk management in addition to the validity of costs incurred

- ▶ In order to assess progress towards achieving the cost and schedule objectives, the Oversight Committee has to be confident that the Project is performing to the baseline plans and estimates, that it is being well managed with appropriate processes and controls and also that



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Executive Summary

risks are being identified and proactively managed.

- ▶ These forward-looking assessment areas along with historical cost information will provide the Government with a full picture to perform its oversight mandate.

2. The Oversight Committee should be supported by specialized skills

- ▶ The Oversight Committee brings seasoned public sector executives with a clear understanding of the Government's needs and protocols. It has also appointed an Executive Director to coordinate its working efforts.
- ▶ However, the Project is particularly large and complex, with significant specialized areas. Analysis performed by an efficient working group comprising the Executive Director and other major capital projects specialist resources would provide the Oversight Committee members with the insight necessary to robustly execute on their mandate.

3. The Oversight Committee should align its information request with conventional project controls and assurance practices as well as Nalcor's reporting rhythm

- ▶ The level of detail required by the Government and the timing of information flow should align with the Project's reporting structure and rhythm. Meetings with Nalcor confirmed that the information requests detailed in this report are already produced at Nalcor as part of its project management processes and systems.
- ▶ The Oversight Committee should proactively work with Nalcor to address any information deficiencies which may arise that would limit visibility into project performance and forecasts.

Related details of these and other recommendations are included in subsequent sections of this report.

1.3 Next Steps

The Project stakeholders are all at different stages of developing their oversight and assurance programs. Oversight and assurance mechanisms should be aligned to minimize unnecessary duplication of efforts and disruption to the Project.

- ▶ The Government should work collaboratively with Nalcor and the other stakeholders to finalize the information provisioning and protocols for oversight and reporting.
- ▶ The Oversight Committee terms of reference should also be finalized.
- ▶ The Government should explore opportunities to establish appropriate mechanisms to leverage information provided by the Independent Engineer.
- ▶ The Working Group should be established to support the Oversight Committee.
- ▶ Immediate preparations should be made for the development of the Oversight Committee's first report.



2

Scope and Approach

The Government requested EY to conduct an assessment of the Oversight Committee's protocols under development to:

- ▶ Provide recommendations on the Oversight Committee's governance structure and processes
- ▶ Conduct a gap assessment of the Government's Information Request List, which is an initial list of items the Oversight Committee would periodically request from various stakeholders

Our approach included reviewing the documents related to initial thinking on the Government's protocols and certain agreements defining the relationships between different Project stakeholders. Additionally, we also interviewed stakeholders from the Government and Nalcor to gain further understanding of the oversight objectives as well as the current assurance mechanisms in play.

The activities conducted as part of this engagement included:

- ▶ Collecting data and scheduling interviews
- ▶ Analyzing data and conducting interviews
- ▶ Drafting the preliminary report
- ▶ Meeting with Nalcor
- ▶ Presenting the preliminary report, collecting feedback
- ▶ Issuing the final report

EY conducted two subsequent meetings with Nalcor to review what information was available through management processes and systems at Nalcor and what additional assurance could be gained by the Oversight Committee through the Independent Engineer's and Internal Audit's activities and reporting.

EY would like to thank the members of the Government of Newfoundland and Labrador and Nalcor who participated openly and collaboratively in this assessment process. We have listed the individuals who were interviewed in Section 5.0 of the report.



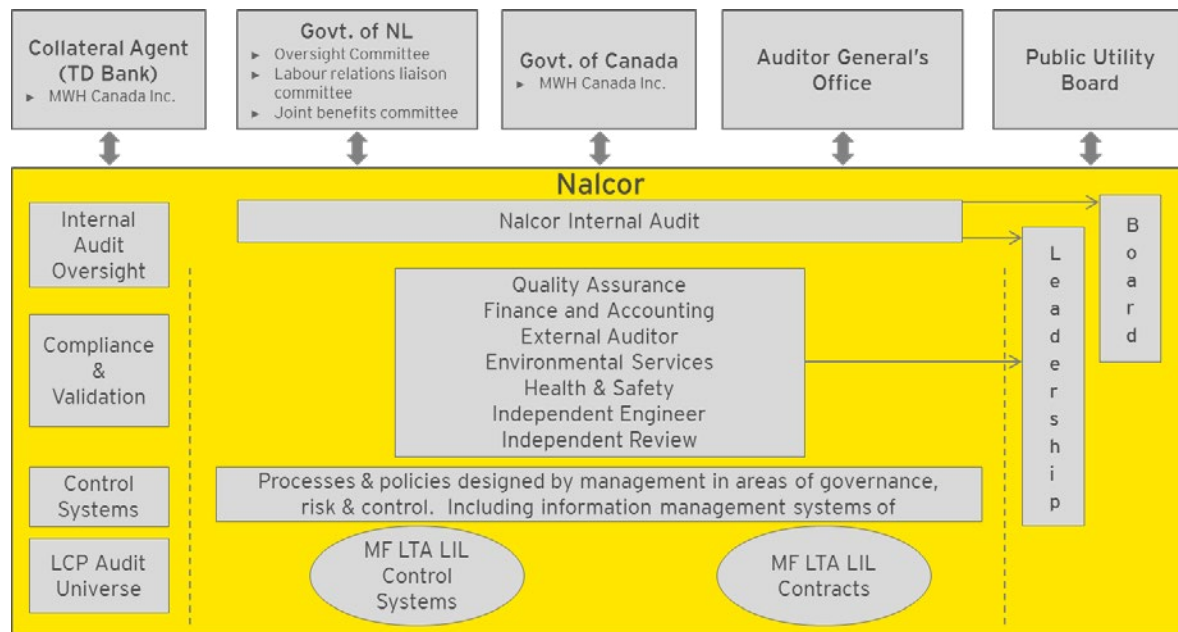
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Guidelines Used in Developing Recommendations

The complex stakeholder landscape for the Project represented in the diagram below makes it imperative to clearly define and communicate the role of each stakeholder. Key considerations for effective oversight on the Project include:

- ▶ Ensuring there are no gaps and considering overlaps in the extent of oversight
- ▶ Minimizing duplication of effort while ensuring independent oversight
- ▶ Leveraging appropriate skill sets for analysis required to support effective oversight
- ▶ Streamlining information sharing and communication protocols

Our recommendations have been developed with these considerations in mind.





4

EY Recommendations for Improving Oversight Protocols

4.A - The Oversight Committee should review cost and schedule performance, forecasts and risk management in addition to the validity of costs incurred

Since the Oversight Committee's role is focused on the Project's cost and schedule performance, we recommend that its mandate should address whether:

- ▶ The Project cost and schedule is well managed:
 - ▶ Have the management process and controls been well designed?
 - ▶ Is there adequate adherence to the management processes and controls?
 - ▶ Are contracts being managed diligently?
 - ▶ Do the financial draws comply with established processes?
- ▶ The Project is meeting the cost and schedule objectives:
 - ▶ How do schedule performance and forecast compare to the plan?
 - ▶ How do cost performance and forecast compare to the baseline?
 - ▶ Are the cost and schedule forecasts consistent with current performance?
 - ▶ Do the cash flow forecasts adequately reflect the Project's funding requirements?
- ▶ The cost and schedule risks are being reasonably anticipated and managed:
 - ▶ Are risks being sufficiently identified and addressed?
 - ▶ Is there adequate contingency in place to address the outstanding project risks?

Structuring the mandate to address the performance of existing controls as well as the anticipation of future risks will result in more effective oversight. Such a proactive role by the Government will have a favorable impact on the overall project performance.

4.B - Oversight Committee should be supported by specialized skills

A meaningful cost and schedule oversight would require monitoring exposure across multiple indicators of project performance such as earned value, engineering and construction productivity, management of critical path, manpower histograms, forecasting techniques and risk identification, quantification and management. These indicators serve as early warning systems for identifying gaps in project performance and can be effectively used as inputs for meaningful oversight. However, specialized skills are required in different areas of engineering, construction and project management to connect the dots between different project performance indicators.

The graphic below illustrates a potential operating model, whereby the Oversight Committee is supported by a Working Group comprising professionals with the required skill sets for detailed analysis of project information. The level of engagement of each skill set will vary from time to time based on the subject matter at hand and the communication and reporting protocols of the Oversight Committee and other ad hoc requirements.



4

EY Recommendations for Improving Oversight Protocols

Oversight Committee

Committee Members

- ▶ Clerk of the Executive Council (Chair)
- ▶ Deputy Minister of Finance
- ▶ Assistant Deputy Minister of Finance
- ▶ Director of Debt Management
- ▶ Deputy Minister of Natural Resources
- ▶ Associate Deputy Minister of Natural Resources
- ▶ Assistant Deputy Minister of Natural Resources
- ▶ Deputy Minister of Justice (or designate)

Roles and Responsibilities

- ▶ Review and approve periodic reports and communications
- ▶ Communicate and escalate high risks/issues as necessary
- ▶ Interact with Nalcor Senior Management
 - ▶ Communicate and resolve issues
 - ▶ Provide input to Nalcor on Government requirements
- ▶ Communicate with Cabinet and other stakeholders

Working Group

Members

Required skills to consider:

- ▶ Project Management & Controls, Engineering Management, Procurement/Contracts Management, Contract Risk, Construction Management, Internal Audit/ Assurance, Project Governance/Risk Management, Finance/Transactions

Required size:

- ▶ TBD - will depend on the finalization of the mandate and terms of reference

Roles and Responsibilities

- ▶ Perform the analysis required to develop reporting and recommendations for the Oversight Committee
- ▶ Solicit additional inputs from Government entities and assurance providers as required
- ▶ Review reconciliation of funds disbursed for project costs
- ▶ Liaise with Nalcor Internal Audit and other assurance providers to:
 - ▶ Review outputs from project assurance activities
 - ▶ Communicate oversight observations, input and recommendations
 - ▶ Monitor critical corrective actions
- ▶ Support the Oversight Committee's communications to Cabinet and other stakeholders



4

EY Recommendations for Improving Oversight Protocols

4.C - Oversight Committee should align its information request with conventional project controls and assurance practices and Nalcor's reporting rhythm

The original Information Request List provided to EY by the Oversight Committee contained most of the key cost and schedule information needs. EY has refined the Request List and identified additional cost, schedule and other information requirements and metrics for Government's consideration to meet the stated objective of providing oversight to cost and schedule performance. The data requirements listed below are typical metrics and documents which exist in mega-projects. Meetings with Nalcor confirmed the existence and availability of the items listed.

Review and analysis of this information will further improve visibility into project performance and mechanisms that are in place to achieve successful cost and schedule outcomes.

▶ Cost Information

- ▶ Baseline Budget with Basis of Estimate (DG3 Estimate) and June 2014 revision
- ▶ Cost report showing in period and cumulative data for the following: Budget (Baseline, Changes, Cost to Complete, Final Forecast Cost, Variance)
- ▶ Contingency draw log, report of planned vs. consumed contingency
- ▶ Performance graphs showing performance, trend and/or forecast
- ▶ Contract and Work Package level cost reporting including: original commitments, changes, revised commitments, invoiced and incurred to date
 - Detail should be provided for all material contracts, with summary level for all other contracts
 - Cost Performance Index (CPI) (period and cumulative), where that information is being tracked on a contract
- ▶ Rolling cash flow - forecast and planned versus actual
- ▶ PFA Funding Request/Log for tracking funding draws (including record of all Liens as noted in the McInnes Cooper report)
- ▶ Variance analysis and corrective action for all material cost variances

▶ Schedule Information

- ▶ Schedule Development & Control Plan including Schedule Specification, Basis of Schedule and Assumptions
- ▶ Integrated Program Schedule (IPS) report to Level 3, including: Schedule milestone report showing Baseline Finish, Actual/Forecast Start and Finish, Schedule Performance Index (where available), Variance, % Complete, Critical and Sub-Critical Path, Predecessor/Successor and Float analysis - with further Levels of detail available as requested
- ▶ Performance Graph showing performance, trend and forecast where available for the program as a whole and each Material Contract/Work Package



4

EY Recommendations for Improving Oversight Protocols

- ▶ Variance and analysis and corrective action for all material schedule variances
- ▶ **Other Information**
 - ▶ Standard Project monthly progress reports (including Health & Safety, Environment, Community/Stakeholder, Scope & Change, Cost, Schedule, Quality, Risk and Contract reports)
 - ▶ Progress reporting of material contractors
 - ▶ Resource profile and graphs/histograms (planned versus actual/forecast)
 - ▶ Project Work Breakdown Structure (WBS) and dictionary
 - ▶ Project policies, plans and procedures
 - ▶ Project execution and contracting strategies
 - ▶ Monthly Project risk register with further levels of detail available as requested
 - ▶ PCNs & Change request/order log(s)
 - ▶ Claims log
 - ▶ Project assurance plans - including internal and third party assurance
 - ▶ Relevant assurance reports as issued including Quality Management Metrics
 - ▶ Independent Engineer reports
 - ▶ Notification of the award of:
 - Material contracts
 - Summary of awards (value) of other contracts
 - ▶ Issues log or other established reports for recording and managing issues
 - ▶ Nalcor financial statements
 - ▶ Summary of Deviation Alert Notices (DANs) for the program, with further levels of detail available as requested

The above list is not exhaustive, but should form the baseline required by the Oversight Committee to fulfill its mandate. Other information may be required as the Oversight Committee conducts its oversight role and as the Project progresses and as cost and schedule position develops.

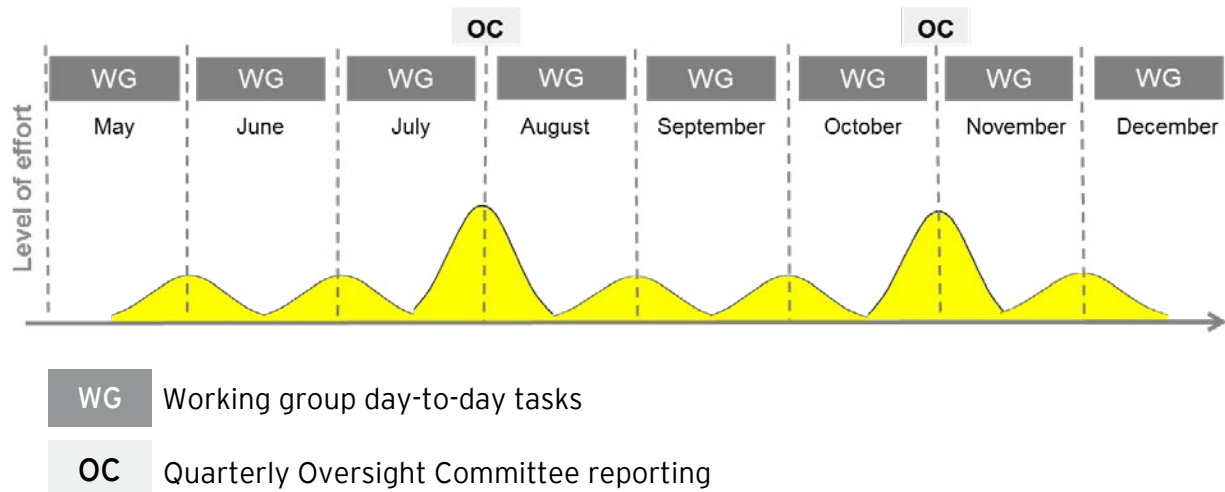


4

EY Recommendations for Improving Oversight Protocols

Alignment of reporting rhythm between Government and Nalcor

The Government and Nalcor should align the planned communication and information flow with the Project's standard internal reporting rhythm to avoid unnecessary duplication of information generation where possible. The diagram below illustrates a potential rhythm of business for the Government's Oversight Committee and Working Group, and the change in effort required to support the periodic monitoring and reporting activities.





5

Acknowledgements

As stated in Section 2.0, our approach included conducting structured interviews with members of the Oversight Committee. We also met with representatives from Nalcor to review the information request listing in this report. We would like to acknowledge and thank the individuals listed below for their participation in the interviews.

Name	Title	Department/ Entity
Julia Mullaley	Clerk of the Executive Council & Secretary to the Cabinet	Executive Council
Tracy King	Assistant Secretary to Cabinet	Executive Council
Craig Martin	Executive Director	Executive Council
Charles Bown	Deputy Minister	Natural Resources
Tracy English	Associate Deputy Minister	Natural Resources
Paul Morris	Assistant Deputy Minister	Natural Resources
Randy Pelletier	Solicitor	Justice
Donna Brewer	Deputy Minister	Finance
Peter Au	Assistant Deputy Minister	Finance
Paul Myrden	Director Debt Management Division	Finance
Derrick Sturge	Chief Financial Officer	Nalcor
Gilbert Bennett	Vice President, Lower Churchill Project	Nalcor
Paul Harrington	Project Director, Lower Churchill Project	Nalcor
James Meaney	GM Finance, Lower Churchill Project	Nalcor
Robert Hull	GM Finance, Nalcor	Nalcor
Mark Bradbury	Internal Audit	Nalcor
Ed Bush	Project Controls Manager, Lower Churchill Project	Nalcor

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Appendix B: Committee Terms of Reference

Muskrat Falls Project Oversight Committee

Terms of Reference

July 29, 2014

Mandate:

The Oversight Committee (the “Committee”) of the Government of Newfoundland and Labrador has been established to provide reliable and transparent oversight on the following key issues associated with the Muskrat Falls Project (the “Project”):

1. The Project cost and schedule is well managed – the Committee will examine issues such as whether management processes and controls are well-designed and followed, contracts are being managed diligently and financial drawdowns comply with the established processes;
2. The Project is meeting the cost and schedule objectives – the Committee will examine issues such as how schedule performance and forecast compare to the plan, how cost performance and forecast compare with the budget, how cost and schedule forecasts compare with current performance, and how cash flow forecasts reflect the project’s funding requirements; and
3. The cost and schedule risks are being reasonably anticipated and managed – the Committee will examine issues such as whether risks are being sufficiently identified and addressed and whether Nalcor has established adequate contingency to address outstanding Project risks.

The Committee’s mandate does not include participation in the management of the Project. Oversight of health, safety and environment, quality, regulatory compliance and benefits tracking are specifically excluded from the Committee’s scope.

Objectives:

The objectives are to provide reliable and transparent oversight on the cost and schedule performance of the Project and to establish a direct and effective communication channel to Cabinet and the general public.

Members:

The Committee will consist of the following members:

- Clerk of the Executive Council (Chair)
- Deputy Minister of Natural Resources
- Associate Deputy Minister of Natural Resources
- Assistant Deputy Minister of Natural Resources - Energy Policy
- Deputy Minister of Finance
- Assistant Deputy Minister of Finance - Taxation and Fiscal Policy
- Director of Debt Management – Department of Finance
- Deputy Minister of Justice or their designated Solicitor
- Assistant Secretary to Cabinet for Economic Policy

A quorum will be decided by the Chair.

Accountability:

The Committee is accountable to Cabinet for Project oversight and periodic reporting on the Project's:

a) cost and budget performance, b) schedule performance and c) cashflow requirements.

Responsibility:

Responsibilities include:

- Establish the information requirements for regular monthly reporting.
- Confirm frequency and scope of reporting protocol.
- Review and analyze the information provided by the Nalcor Lower Churchill Project Team ('Project Team') and other related parties.
- Liaise with Nalcor Corporate and the Project Team throughout analysis and reporting to confirm and validate facts.
- Formulate conclusions on the cost and budget performance, schedule performance and cashflow requirements and provide recommendations as necessary.

Meetings:

- Meetings will be chaired by the Clerk of the Executive Council.
- Meetings of the Committee will be held monthly and more frequently if required.
- The Committee will meet with Nalcor officials on a quarterly basis and as required.
- The Executive Director will act as the Secretary to the Committee.

Reports:

- The Committee will produce quarterly reports for Cabinet and for distribution to the general public.
 - The Committee may produce additional reports for Cabinet and the General Public as determined necessary by the Committee or as directed by Cabinet.
-

Appendix C: Shareholders' Letter



Government of Newfoundland and Labrador
Office of the Premier

July 29, 2014

Nalcor Energy
500 Columbus Drive
St. John's, NL A1B 0C9

Attention: Mr. Ken Marshall, Chair of the Board of Directors (Acting)
Mr. Ed Martin, President and Chief Executive Officer

Re: The Muskrat Falls Project (the Project") - Reporting to the Muskrat Falls Project Oversight Committee

Information pursuant to the Project Financing Agreements (the 'PFA's')

On November 29, 2013, Nalcor Energy and various subsidiaries of Nalcor Energy entered into the following project financing agreements:

1. The MF/LTA Project Finance Agreement (the "Muskrat/LTA PFA");
2. The IT Project Finance Agreement (the "IT PFA"); and
3. The LIL Project Finance Agreement (the "LIL PFA").

The PFA's required Nalcor to provide various oversight and reporting documents to the lenders for the Project and their agents. The Province, as the provider of equity for the Project and ultimate owner of the Project, requires, at a minimum the same information required to be provided under the PFA's. Therefore, the Province requires Nalcor to deliver, or cause to be delivered, to the Muskrat Falls Project Oversight Committee (the 'Committee') true and complete copies of all reports, certificates, notices and other documents (whether prepared by Nalcor, a subsidiary of Nalcor, the independent engineer for the Project (the "Independent Engineer"), the insurance consultant for the Project or any other consultant, engineer or expert) which are required to be delivered pursuant to the PFA's at the same time as such reports, certificates, notices and other documents are delivered pursuant to the PFA's, including all deliverables required to be provided pursuant to:

- (a) Article 11 of the Muskrat/LTA PFA;
- (b) Article 11 of the IT PFA;
- (c) Article 11 of the LIL PFA;
- (d) all Funding Requests and Construction Reports in the form and at the times required under an applicable PFA;
- (e) all certificates issued by the Independent Engineer; and
- (f) any such other documents or information that the Committee may require.

Additional Oversight Committee Project Information

In addition, Nalcor shall provide to the Oversight Committee the following information:

1. Cost Information
 - a. Baseline Budget with Basis of Estimate (DG3 Estimate) and June 2014 revision
 - b. Cost report showing in period and cumulative data for the following: Budget (Baseline, Changes, Cost to Complete, Final Forecast Cost, Variance
 - c. Contingency draw log, report of planned vs. consumed contingency
 - d. Performance graphs showing performance, trend and/or forecast
 - e. Contract and Work Package level cost reporting including: original commitments, changes, revised commitments, invoiced and incurred to date
 - i. Detail shall be provided for all material contracts
 - ii. Summary level for all other contracts, with Cost Performance Index CPI (period and cumulative) is required where that information is being tracked on a contract.
 - f. Rolling cash flow– forecast and planned versus actual
 - g. PFA Funding Request/Log for tracking funding draws. (Including record of all Liens as noted in McInnes Cooper report)
 - h. Variance analysis and corrective action for all material cost variances
2. Schedule Information
 - a. Schedule Development & Control Plan including Schedule Specification, Basis of Schedule and Assumptions
 - b. Integrated Program Schedule (IPS) report to Level 3 including: Schedule milestone report showing Baseline Finish, Actual/Forecast Start and Finish, Schedule Performance Index (where available), Variance, % Complete, Critical and Sub-Critical Path, Predecessor/Successor and Float analysis, with further levels of detail available as requested
 - c. Performance Graph showing performance, trend and forecast where available for Program as a whole and each Material Contract/Work Package
 - d. Variance and analysis and corrective action for all material schedule variances
3. Other Information
 - a. Standard project monthly progress report (including Health & Safety, Environment, Community/Stakeholder, Scope & Change, Cost, Schedule, Quality, Risk and Contract reports)
 - b. Progress reporting of material contractors
 - c. Resource profile and graphs/histograms (planned versus actual/forecast)
 - d. Project Work Breakdown structure (WBS) and dictionary
 - e. Project policies, plans and procedures
 - f. Project execution and contracting strategies
 - g. Monthly LCP risk register, with further detail available as requested
 - h. PCNs & Change request/ order log(s)
 - i. Claims log
 - j. Project assurance plans – including internal and third party assurance
 - k. Relevant assurance reports, as issued including Quality Management Metrics

3

- l. Independent Engineer reports
- m. Notification of the award of:
 - i. Material Contracts
 - ii. Summary of awards (Value) of other contracts
- n. Issues log or other established reports for recording and managing issues
- o. Nalcor financial statements
- p. Summary of Deviation Alert Notices (DANs) status for the program, with further detail available as requested
- q. Other information as the Committee may from time to time require

This information is to be made available to the Committee through the Lower Churchill Project Data Room and will be updated on a monthly basis. The Committee may require additional information from time to time as required.

I look forward to your co-operation on these reporting matters.

Sincerely,



THOMAS W. MARSHALL, Q.C.
Premier



DERRICK DALLEY
Minister of Natural Resources

Muskrat Falls Oversight Committee
P.O. Box 8700
St. John's, NL
A1B 4J6

