nalcor energy
LOWER CHURCHILL PROJECT

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April 12, 2016

Ms. Julia Mullaley
Clerk of the Executive Council
Cabinet Secretariat
Government of Newfoundland and Labrador
Confederation Building
St. John's, NL A1B 4J6

Dear Ms. Mullaley:

Re: LCMC Management Response to EY Review of Muskrat Falls Project Cost, Schedule and Related Risk – April Report

Lower Churchill Management Corporation (LCMC) has had an opportunity to review EY's April report commissioned by the Government Oversight Committee to review cost, schedule, and related risk for the Muskrat Falls Project. This letter provides LCMC's response to the points raised in EY's April report along with additional context surrounding the points raised.

LCMC recognizes the Government of Newfoundland and Labrador's desire for further clarity with respect to cost and schedule as well as potential risks. EY's review was treated as a priority and LCMC provided access to extensive relevant documentation from LCMC's files and full access to senior staff.

The management of project cost and schedule is a critical and ongoing activity. LCMC is actively managing cost, schedule and related risks. LCMC had recognized that the September 2015 cost update was outdated, and actions to update the project cost and schedule forecasts, including a mid-project risk assessment, were initiated and underway as part of ongoing project management activities prior to the start of the EY review. LCMC provided EY with the perspectives that total cost of $7.653 billion and first power in December 2017 would not be achieved. LCMC acknowledged and communicated publicly in the fall of 2015 that the cost and schedule estimates were subject to adjustment.

LCMC would like to provide additional context and perspective in relation to the following points:

1. Reasonableness of the September 2015 Cost and Schedule Update
2. Treatment of Contingency
3. Identification and Allocation of Costs for Strategic Risk
4. Project Governance and Reporting

1. Reasonableness of the September 2015 Cost and Schedule Update:

Through the course of its review, EY reviewed existing schedules as well as cost updates developed by LCMC over the summer of 2015 and released publicly in September 2015. While it was evident at that time that cost and schedule data could potentially change over the following months primarily due to uncertainty associated with powerhouse construction and commercial discussions with the primary civil contractor, Astaldi, LCMC believed it prudent to be transparent and share the information as it was understood at that time with the public. With this in mind, concurrent with the September 2015 release of information, LCMC noted publicly that there was also an issue with powerhouse progress which would impact schedule on a go-forward basis as further analysis and management action took place. In addition, LCMC also noted there was still cost exposure related to the project.

In addition, as has been the practice since project inception, as the project evolves, key stakeholders have been consistently briefed on project issues and outlook, including the Government of Newfoundland and Labrador, the Boards of Directors of Nalcor and the Lower Churchill Project (LCP) subsidiaries, the Government of Canada, and the project's Independent Engineer.

Due to the passage of time, the availability of new information, and ongoing analysis which now makes the September 2015 cost update outdated and thus no longer fully relevant, LCMC had taken action to commence an update of the September 2015 capital cost and schedule estimates. Specific actions underway include a risk assessment as well as a review of forecasted final cost and schedule for the projects' major contracts. LCMC notes that this was acknowledged by EY in their April report.

LCMC provided EY with this historical perspective during initial briefings at the beginning of their review. EY was advised that subsequent analysis and an improved understanding of the impacts of schedule delays with Astaldi related to powerhouse construction translated to cost estimates that would surpass the latest public update of $7.653 billion.

EY's April report primarily focuses on the impacts of the following two risks:

1. The progress of Astaldi, the civil contractor for the Muskrat Falls powerhouse and spillway, is tracking behind the original project schedule.
2. The progress of construction on the HVdc transmission line is challenged by weather and field conditions.

These and other significant risks have already been identified, documented, mitigation strategies developed and are being actively managed by LCMC. LCMC offers the following specific comments in relation to the aforementioned risks and EY's observations from the Executive Summary of their April report:

<u>Muskrat Falls Powerhouse</u>

LCMC advised the public and Government in September of 2015 that the target date for first power in late December 2017 would not be achievable. This was acknowledged by the Oversight Committee who noted in its report for the period ending August 2015:

> *"The risk for schedule delays due to powerhouse concrete placement remains high. Contractor performance in the powerhouse and intake remains a key area of focus for the contractor and Nalcor."*

The Oversight Committee also noted in this report that despite improvements in the performance of the civil contractor for the Muskrat Falls Generating Facility, further schedule slippages:

> *"could impact costs beyond the Project execution risk contingency that has been established."*

The delays to powerhouse construction are primarily attributable to a poor start by the contractor in 2014. LCMC notes the performance of Astaldi throughout 2015 showed a marked improvement over 2014, with concrete placement volumes meeting industry norms. The contractor also successfully executed a winter construction program which focused on removal of the Integrated Cover System, rebar installation and formwork construction. This has left Astaldi properly positioned to continue concrete placement at acceptable rates in 2016.

HVdc Transmission Line Construction

While construction of the 315 kilovolt (kV) transmission lines that are part of the Labrador Transmission Asset (LTA, the new ac transmission line between Churchill Falls and Muskrat Falls) is tracking ahead of schedule, the 350kV transmission lines portion of the HVdc Labrador-Island Transmission Link (LIL) construction has tracked behind schedule. However, recent trends are showing a positive outlook for this work.

There have been a number of performance challenges faced by the contractor which continue to pressure the HVdc transmission line construction schedule, such as above seasonal winter temperatures and other unfavorable weather conditions. LCMC will continue to assess the impact on schedule and would concur delays are possible without effective mitigation strategies. As part of its ongoing management of this scope, LCMC will continue to examine options with its construction contractor for minimizing schedule slippage. These include the contractor mobilizing additional resources – including those planned to move from the LTA to the LIL when work on the LTA concludes.

Reporting of Anticipated Material Cost Variances

EY notes some anticipated material cost variances have only been reflected in the forecast cost when they are contractually committed. LCMC believes this to be a prudent approach to cost reporting as it focuses on real variances instead of issues which are premature. Many issues are able to be addressed with aggressive mitigation.

It is LCMC's opinion that reporting such variances prematurely does not add value to the project and only serves to undermine the credibility of reporting processes. In addition, public disclosure of speculative cost impacts that have not materialized is not commercially prudent at the very time discussions and/or negotiations are occurring with contractors. This methodology is also consistent with LCMC's obligations under the Federal Loan Guarantee (FLG) and the agreed approach to final cost forecasting with the Independent Engineer and the Government of Canada.

2. Treatment of Contingency:

LCMC is fully committed to both transparency and protecting the commercial interests of the people of Newfoundland and Labrador. We seek to achieve this balance by publicly releasing information when the information ceases to be commercially sensitive (which includes, but not limited to, impacting negotiations and other dealings with contractors).

Consistent with industry best-practice for large capital projects, LCMC conducts project reviews at major decision points and midway through project execution. Risk identification and mitigation has been an ongoing project activity since project inception.

At the start of EY's review, LCMC informed EY of its ongoing work to complete a comprehensive risk assessment to more accurately identify a range of estimated potential project cost and schedule, as well as the likely probability of achievement. LCMC notes this work was underway prior to EY commencing its review.

EY has recommended to the Oversight Committee that LCMC adopt a more conservative approach to budget reporting, which will see cost estimates and contingency move from LCMC's aggressive, lower contingency allocation to a much higher contingency allocation, including allowances for strategic risk. LCMC believes this will tend to drive increased project capital cost for two reasons:

1. Due to the highly public nature of the project, the early communication of large, unrealized contingency values will reduce LCMC's ability to effectively negotiate with its contractors in the best interests of the people of Newfoundland and Labrador.
2. Project entities manage to budget and tighter contingency allocations are one element which tend to further drive aggressive cost management.

In addition, through the provisions of the project financing agreements and the FLG, unconfirmed contingent amounts would require equity pre-funding from the Province.

LCMC believes that these are key factors in determining the level of contingency that should be carried for this project. These commercial considerations need to be balanced with the need for transparency.

3. Identification and Allocation of Costs for Strategic Risk

EY notes that LCMC has identified and documented risks associated with all remaining scope and has processes in place to mitigate those risks. These risks are maintained in a risk register and regularly reviewed by project managers.

For clarity, risks typically pertaining to external issues that are beyond the ability of any project team to manage or influence should they occur are categorized as strategic, for example, things such as, but not limited to, extreme weather events, global or local economic trends, or regulatory approvals.

At sanction, to demonstrate the project's ability to accommodate strategic and other unforeseen risks, LCMC provided a comprehensive sensitivity analysis for a number of variables which could impact the overall economic viability of the project, including changes in capital costs, schedule delays and oil prices. This analysis was validated by the external consultant, Manitoba Hydro International, commissioned by the Provincial Government as part of their due diligence process. Sensitivity analysis was also completed at Decision Gate 2, and was shared with the Newfoundland and Labrador Board of Commissioners of Public Utilities (PUB) in 2011.

These sensitivity analyses demonstrated that the preference for the development of the Muskrat Falls Project remained robust under a number of significant deviations to key project variables, demonstrating the project's ability to accommodate strategic and other unforeseen risks. In addition, the Muskrat Falls (Interconnected Island) alternative for provision of power to the Province provides significant incremental sources of revenue to the Province, providing flexibility to cover a broad range of strategic and other risks.

It is also worth noting that consideration was given to the potential impact of strategic risks as part of Government making its commitment to provide the base level and contingent equity required to support the project achieving in-service. This is reflected in the November 2012 FLG Agreement and the November 2013 Intergovernmental Agreement between the Province and the Government of Canada (both of which are available on the Muskrat Falls Project website), as well as the formal equity guarantee agreements executed by the Province in November 2013 in support of the FLG and $5 billion debt financing.

4. Project Governance and Reporting

EY has offered an opinion on the effectiveness of governance and reporting in relation to forecasted cost and schedule.

LCMC is not aware of discussions with members of the Boards of Directors of Nalcor and relevant subsidiaries, or the Government of Canada in which to form this observation. Also, LCMC is unaware of the information EY is referring to with which to comment on the context or quality of discussions which occurred during meetings and briefings provided by project officials to key stakeholders.

LCMC wishes to note that regular and timely briefings are provided to the six LCP subsidiaries, each of which has its own Board of Directors, as well as to the Nalcor Board. In addition, changes to the project master budgets are approved by the Boards of Directors of relevant Project companies, who are provided with all relevant information and access to Project personnel to satisfy their due diligence responsibilities. The composition of these Boards complies with the Energy Corporation Act requirements for independent Directors. Further, under the obligations of the FLG, the LCP subsidiaries involved with the financing arrangements must have an even higher level of board independence.

Nalcor also reports to the public through the release of quarterly and annual financial statements for Nalcor and all its subsidiaries, including those related to the LCP, and an Annual Report which is discussed during a public Annual General Meeting. Nalcor's annual financial statements are audited by its independent auditors, Deloitte, who also conduct special audit procedures on the accounts and records of the LCP subsidiaries at the request of the Oversight Committee. This is in addition to ongoing reporting to the Independent Engineer, Government of Canada and the Oversight Committee.

EY says, "Project governance refers to the overall framework within which decisions are made. This covers four elements: structure, people, information and assurance, which combine to provide the necessary experience, diversity, independence, challenge and oversight to project reporting, decision making, planning and forecasting."

LCMC notes that in 2013, the Institute of Internal Auditors Inc. conducted an external quality assessment of Nalcor Energy's internal audit function, which includes LCMC. The review included extensive interviews with the chair of Nalcor Energy's Audit Committee, executives, external auditors and Internal Audit (IA) staff. Also reviewed were the IA activity's risk assessment and audit planning processes, audit tools and methodologies, governance, risk management and control.

The review of the Institute for Internal Auditors concluded overall that Nalcor Energy "generally conforms to the Standards and Definition of Internal Audit," where generally conforms is determined to be the top rating an organization can be assessed.

LCMC also engaged Independent Project Analysis (IPA) in the fall of 2015 to conduct an external assessment of the management processes and practices used by LCMC. IPA noted the following:

- "The [LCMC] organization has overall good staffing to manage all execution scopes..."
- "Systems are in place to manage and control progress."
- "Systems [are] in place and coordinated effort [is occurring] by quality management, project controls, procurement and technical integration."

LCMC is committed to meeting the needs of all stakeholders in respect of project governance and reporting and will continue to work with the Oversight Committee to achieve best value from the Muskrat Falls Project for the people of Newfoundland and Labrador in an open and transparent manner.

Sincerely,

Gilbert J. Bennett, P. Eng., FCAE
Vice President

cc. E.J. Martin, President and CEO, Nalcor Energy