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**To:** [dawndalley@nalcenergy.com](mailto:dawndalley@nalcenergy.com)  
**Cc:** [Ed Martin](#); [Gilbert Bennett](#)  
**Subject:** Re: E&Y and OC questions  
**Date:** Friday, September 25, 2015 1:03:47 PM  
**Attachments:** [\\_png](#)  
[E&Y comments \\_EM additions and PH.docx](#)

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Dawn

I attache a further draft which addresses some of the previous reviews and also emphasizes that we are under continuous scrutiny by the Independent Engineer which has to be the ruling body here on matters of Project management- we must ensure we are not ending up with E&Y as a shadow IE - I believe that is E&Y's intent and I will not be able to manage this project if that is allowed to happen. I would strongly advise that the OC respond to E&Y and ask for this to be only a verbal report to them. The OC may wish to include some reference in their next Quarterly Report that a review was carried out and Nalcor and OC are addressing the advice provided. The draft report contains many statements and advice that is clearly outside of the scope of E and Y and also a blatant push to extend E&Y scope into risk assessment- something that would be intolerable to me.

Regards Paul



E&Y comments \_EM additions and PH.docx



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Dawn Dalley---09/25/2015 12:19:01 PM---See the reports with the additional information and edits from Ed. Paul, can you please review. I

**From:** Dawn Dalley/NLHydro  
**To:** Paul Harrington/NLHydro@NLHydro, Ed Martin/NLHydro@NLHydro  
**Cc:** Gilbert Bennett/NLHydro@NLHydro  
**Date:** 09/25/2015 12:19 PM  
**Subject:** E&Y and OC questions

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[attachment "E&Y comments \_EM additions.docx" deleted by Paul Harrington/NLHydro] [attachment "09242015\_QandA \_EM.docx" deleted by Paul Harrington/NLHydro]

See the reports with the additional information and edits from Ed. Paul, can you please review. I expect GB is out of pocket.

Ed was also wondering if ~~we~~/should we reference other reviews (MHI, Independent Engineer, others?) that commend our system and team?

Dawn

Dawn S. Dalley  
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Dear XXX:

The Owners Project Management Team (Owners Team) is in place to directly oversee and manage contractor performance and ensure current and outlook information is provided to senior management, the Boards of Directors, the Oversight Committee, [the Independent Engineer, Canada](#) and members of government on a timely basis.

There are multiple processes and inputs into the Owners Team to enable them to assess project performance for decision making and ongoing management of the Project. One of these inputs is contractor supplied cost, schedule, safety and quality data. The Owners Team overlays analysis and perspective on the information available to them, uses this information to oversee and manage the project on an ongoing, real time basis, ensuring that commercial considerations do not cloud actual performance, and information reported reflects such perspective.

Due to the significant commercial sensitivity of multiple interactions with contractor(s) on an ongoing basis, it is critical to ensure that the Oversight Committee and members of government are informed of developments and outlooks on a timely basis, while at the same time ensuring formal documentation provided to the oversight process and available to the public, and thus accessible to contractors, is not available publically until such time any related commercial issues are resolved with contractors. The intent is to ensure oversight participants are aware of unfolding events on a timely basis, while at the same time ensure commercially sensitive information is not shared with contractors in a manner which could be used against the Project in an unacceptable manner. The two key channels for oversight information is verbal interaction at Oversight Committee meetings and ongoing discussion on a regular basis covering all topics. This is supplemented by regular printed reports and documentation provided on a monthly basis prepared in such a way that commercially sensitive information is not available to the contractor until such commercially sensitivity has passed.

Ernst and Young has reviewed printed reporting processes, which is one discreet element of the comprehensive, integrated, dynamic management of the overall project, Responses to E and Y comments are provided below.

This letter is in response to the review completed by Ernst and Young (E&Y) in relation to Cost and Schedule Management Processes and Controls for the Muskrat Falls Project. This response is structured to track the [relevant issues advice](#) raised by E&Y in their August 31, 2015 document and to provide LCP's response to the ~~m-~~[relevant advice](#).

At the outset, we note E&Y's reference that "the Oversight Committee is relying on the summary cost and schedule information produced by Nalcor in performing this function." This statement is partially correct, but it should also be noted that the Oversight Committee has direct access to both Nalcor and LCP leadership, engages in regular meetings [and Site Visits](#) to [review and](#) discuss project progress and

emerging risks, and also has the benefit of the Project's Independent Engineer to advise on relevant technical issues. We observe that E&Y advocates inclusion of these types of "strategic" risks in 'project' level reporting, but our management approach, consistent with the advice provided by our Risk Consultant has been to separate them and to discuss strategic risks at the most senior leadership level. As such risks materialize, disclosure and discussion at the leadership level is a more appropriate way to evaluate and discuss strategies to address such issues than to provide 'reporting' on a project basis.

In reviewing the key findings (page 4 of the report), LCP believes that E&Y has generally described LCP's project control management processes for cost and schedule. LCP has not implemented a full Earned Value Management System for LCP, but rather has focused its use of such a process on construction progress for the Project. E&Y has advocated for the use of a full Earned Value Management System, which would include supplier procurement, engineering, and fabrication processes. LCP made a conscious decision not to implement such a process for the following reasons:

- a) At the most fundamental level, such value is not truly 'earned'. Unlike construction activities, where concrete is placed at the owner's site, or transmission towers are erected, the project owner has no title to activities undertaken by a supplier at their premises. Internal supplier engineering and fabrication have no value until they result in a completed product and are shipped to site. Supplier progress is measured by the LCP project team directly, and estimates of supplier progress are completed by the LCP project team directly.
- b) From a commercial perspective, LCP has no claim to partially completed internal work and would not be in a position to realize partially earned value in the event of a dispute.
- c) To the extent that we rely on suppliers to report on their progress, visibility into contractors' progress would be clouded by the fact they are reporting on their own progress.

For these reasons, LCP has elected to measure suppliers' progress through direct progress reporting and an assessment of their ability to achieve key milestones.

In considering key management process and control risks and issues, E&Y identified four issues:

1. For three of five of the samples selected, contractor Control Schedule Baseline Documents (CSBD) and Schedule Development and Control Plans (SDCP) were incomplete and/or did not meet the criteria defined in Nalcor's processes.

*Response: These are contractor documents, and LCP has identified deficiencies that must be corrected until they can be accepted by LCP.*

2. A majority of contractors' schedule updates included in the sample were not systematically rolled up into the Nalcor IPS.

*Response: Referring to observation 1, incomplete or otherwise non-compliant schedules would not be accepted into the IPS. Issues with them must be resolved before they can be included. Two of the five contracts were awarded in late 2014, and the respective contractors had not completed their schedule input during the test period. One other contract (Astaldi), has struggled to prepare an acceptable schedule for input into the IPS. Nalcor is working diligently with this Contractor and all Contractors to provide schedules which meet the contractual obligations. This is an ongoing effort.*

3. A completion date has not been established for finalizing an integrated baseline of contractor and IPS schedule to correct the issues noted in #1 and #2 above.

*Response: LCP is working diligently and cooperatively with each of its contractors to achieve complete, accurate, and up-to-date information for inclusion in the IPS. Nalcor is working with the Contractors at senior management levels and at site level to assist them to produce acceptable schedules which comply with the contract milestone dates, until such time as an acceptable schedule is developed and accepted by Nalcor the IPS baseline schedule will be used. Nalcor is working towards a re-baseline of the IPS in Q4 of 2015.*

4. The IPS focuses on three domains, namely construction, commissioning, and operations start-up. The IPS does not include information on three other domains, namely, engineering, procurement, and fabrication.

*Response: Nalcor has decided to focus on the construction , commissioning and startup activities in the IPS for the following reasons. Engineering as performed mainly by SNC-L has been completed with only follow-on engineering remaining. Procurement is largely complete and the few remaining procurement activities are being managed effectively and inclusion in the IPS would not provide any appreciable benefit. The remaining activities which fall under engineering, procurement and fabrication are being performed under EPC type contracts and as such are being managed at the Contract level and Nalcor considers this to be managed more effectively outside of the IPS*

In relation to contractor earned value, E&Y advocates that it would provide additional useful information to the Oversight Committee. LCP disagrees with this position. As previously discussed, the

contractor efforts in engineering, procurement, and fabrication are not truly earned, and LCP believes that a direct assessment by project management team members of contractors' progress in these areas and their ability to achieve critical project milestones is a more useful approach than an arbitrary view of contractor progress through an 'earned value' lens.

The detailed comments and observations provided in relation to the schedule management process compliance provide further detail regarding the 4 key findings noted above, with one addition. Reference is made to reported progress "... could be viewed as subject to interpretation and not wholly objective." Given the nature of the differences presented in Appendix C, there is no basis to assert the reporting is not objective. LCP acknowledges the process is necessarily subjective, and requires appropriate insight and experience to properly interpret and report contractors' progress.

LCP agrees that it is important to have complete and accurate contractor reporting. It is also essential that the Project Team have its own assessment of contractor progress on all components of the Project in order to have a first-hand viewpoint of each contractor's progress.

Considering the design of the LCP cost management process, LCP offers the following comments regarding E&Y cost management process design:

1. Cost variance thresholds are not defined. These thresholds are used to establish a permissible variation from budget before documented corrective action must be taken. Variance thresholds are also used to define what constitutes a variance requiring escalation for senior management's attention.

*Response: While a threshold is not defined, a trigger is. Changes to quantities or costs in excess of the approved control budget amount require change control board approval at the AFE level, if final forecast cost information is forthcoming which results in any of the LIL, LTA or MF approved AFE's being exceeded then a revised AFE will be produced and submitted for Board approval. The Project team cannot commit to costs which exceed the approved AFE.*

2. The conditions and processes for rebaselining are not defined in the Project's control processes and procedures. Management indicated that rebaselining of the program was at their discretion and dependent on a variety of factors including forecast and rate of drawdown on contingency.

*Response: LCP agrees this is a project team management decision. A decision to rebaseline the project is a significant management decision that requires consideration of multiple factors. These factors include but are not limited to potential AFE exceedance, as described in 1 above, if a final forecast cost indicates potential exceedance of an Approved AFE then this would call for a cost rebaseline. Schedule rebaselines are only carried out when there is an accumulation of changes that justify such an action. Nalcor is currently working towards a schedule rebaseline. The decision to carry out a cost or schedule re-baseline is*

*not a Project Control process rather such a decision is made at Senior Leadership levels based on the factors explained above.*

- Detailed checklists have not been developed for the use of Nalcor cost controllers to validate contractor costs and ensure review consistency.

*Response: The contractor cost validation and payment terms are explicitly defined in the contracts that cost controllers are expected to manage. Nalcor considers that the existing cost validation methods are suitable however will consider the use of checklists if there is an identified consistency concern. Nalcor internal audit will address this issue.*

- The shape of the contingency curve is conventionally defined by aggregation of the forecasted materialization of estimate uncertainties or tactical risks. The current basis of the forecast contingency drawdown curve did not include quantified material risks. This shortcoming significantly limits the ability to compare the rate of realized cost risks versus original forecast, and assess the need for additional contingency or the rebaselining of the Project's cost and schedule.

*Response: Assessment of the need for additional contingency or re-baselining cost and schedule are management decisions. In relation to material risks, these risks are discussed and reviewed directly with the Oversight Committee by Project Leadership, and are not incorporated in the official IPS and project budget until the applicable change control processes have been complete.*

*The potential for additional capital requirements or schedule impacts are discussed directly at the leadership level, and once a decision to adjust the project budget or schedule is approved, then working documents for the Project are updated accordingly through the re-baseline process.*

With respect to the detailed findings, Astaldi's performance and slow start up has been discussed with the Oversight Committee directly by Project leadership. LCP does not consider it appropriate to deal with strategic issues through management level reporting, particularly given their commercial sensitivity.

LCP does not universally use contractors' forecasts as the basis for the FFC, and verifies contractor reporting through other methods, including direct quantity estimates and progress reporting. LCP believes this is prudent from a management and commercial perspective. It provides the project team

with first-hand information to validate and confirm contractors' performance and also ensures the project team is equipped with the information necessary to address any commercial disputes.

~~[Need statement on Nexans — my expectation is that the control process was established prior to sanction. My understanding is that cost deltas are addressed through change control.]~~

In summary, LCP's processes address the key reporting needs of the project, and provide a suitable basis for management decision making. In conjunction with the other processes used to inform the Oversight Committee, the Oversight Committee is provided with the information necessary to understand project performance and also to understand risks that could affect it. The Project Controls processes used by the Project Team have been extensively reviewed previously by Navigant, MHI ,by Internal Audit and most recently by the Independent Engineer who reviews the Project Management role of the Nalcor Project team on an ongoing and monthly basis. All reports so far have been of a positive nature and indeed if any of the Project Controls processes were deemed insufficient the Independent Engineer would have identified such a deficiency to Canada, none have been reported or identified by the Independent Engineer to date. Whilst Nalcor considers all advice in these matters, the responsibility for Project Management resides with the Nalcor Project Team and Nalcor is satisfied that the Project Controls processes currently in place are suitable , adequate and reasonable and are being deployed appropriately for the purposes of project cost and schedule reporting.



Appendix A – LCP Observations:

Two contracts were awarded in November 2014, and baseline information was not completed by the contractors in time for the sample review. Astaldi has been required to correct deficiencies in its schedule, and it was not accepted during the review period.

As a result, an observation that a majority of contractor provided schedules was incomplete or inaccurate was certain.

Appendix B – LCP Observations:

These are not material differences in assessment.

Appendix C – LCP Observations:

Given the baseline data was incomplete or had errors, the constraints noted would not be surprising. More importantly, since they were not accepted, they would never obtain the Engineering approval sought by E&Y.