

From: [Emiliano Mancini](#)
To: alisonball@nalcorenergy.com
Cc: DouglasWoodford@nalcorenergy.com; [Richard Noble](#)
Subject: RE: Meeting today at 3pm - Documents
Date: Friday, March 13, 2015 5:56:57 PM
Attachments: [image001.png](#)
[image002.jpg](#)
[Musktrat Falls Project Review Approach Nalcor meeting.pptx](#)
[MFP - Review Program - Cost and Schedule Management Detailed.docx](#)

Hi Alison / Doug,

Thanks again for your time and support this week.

Please find attached for your comments the draft version of:

- Slide deck outlining approach of the review
- Schedule and cost management workplan

Have a good weekend.

Regards,



Emiliano Mancini | Manager | Advisory Services

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From: alisonball@nalcorenergy.com [mailto:alisonball@nalcorenergy.com]
Sent: Thursday, March 12, 2015 7:10 AM
To: Emiliano Mancini
Cc: DouglasWoodford@nalcorenergy.com
Subject: Meeting today at 3pm

Good morning Emiliano,

Due to scheduling conflicts, the meeting at 3pm today will be cancelled. It has been suggested that you circulate the Power point presentation outlining the planned approach for the audit for comment. I will gather all comments and provide to you after Mark Bradbury completes his final review. Does this approach seem reasonable to you?

We will still go ahead and meet with Anthony at 1030 as discussed.

Regards,

Alison



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You owe it to yourself, and your family, to make it home safely every day. What have you done today so that nobody gets hurt?

Muskrat Falls Project Review Pre-KOM with Nalcor

March 2015

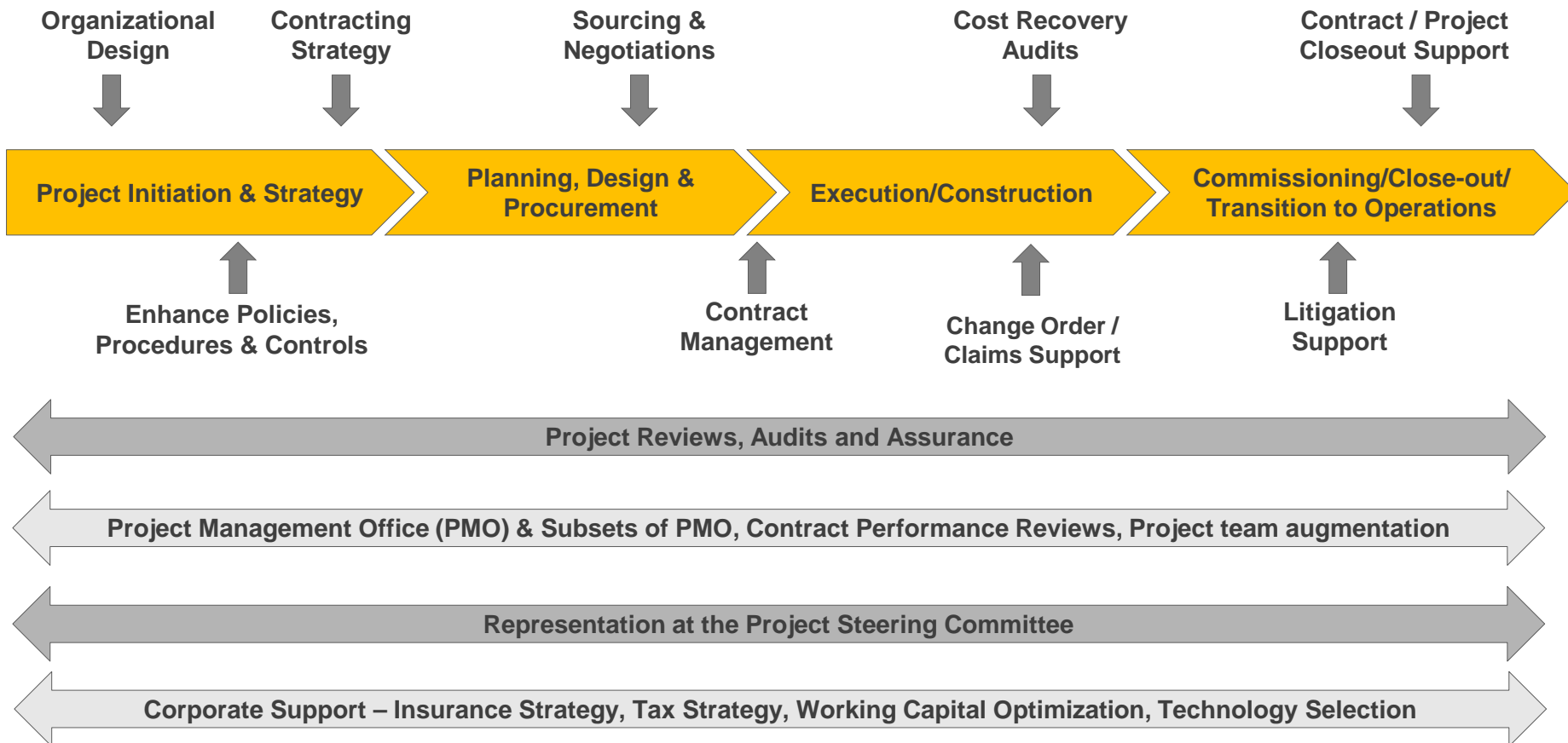


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For Discussions Only

Overview of EY Major Capital Project Practice

CIMFP Exhibit P-03318

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Objective

The objective of this review is to assess the management processes and controls at the Lower Churchill Project to give the Oversight Committee insight on the appropriateness of such processes and provide the Oversight Committee assurance as to the completeness and quality of information being provided.

Scope

The scope of the review includes assessing the appropriateness of the Lower Churchill project management processes related to:

- ▶ Schedule management, reporting and control
- ▶ Cost management, reporting and control

The management processes and controls will be assessed against leading practices and standards (PMBOK) commensurate with projects of the scale and complexity of Lower Churchill project.

We will work with Nalcor Internal Audit during the planning and execution phases of this engagement to leverage work performed by Internal Audit and avoid duplication.

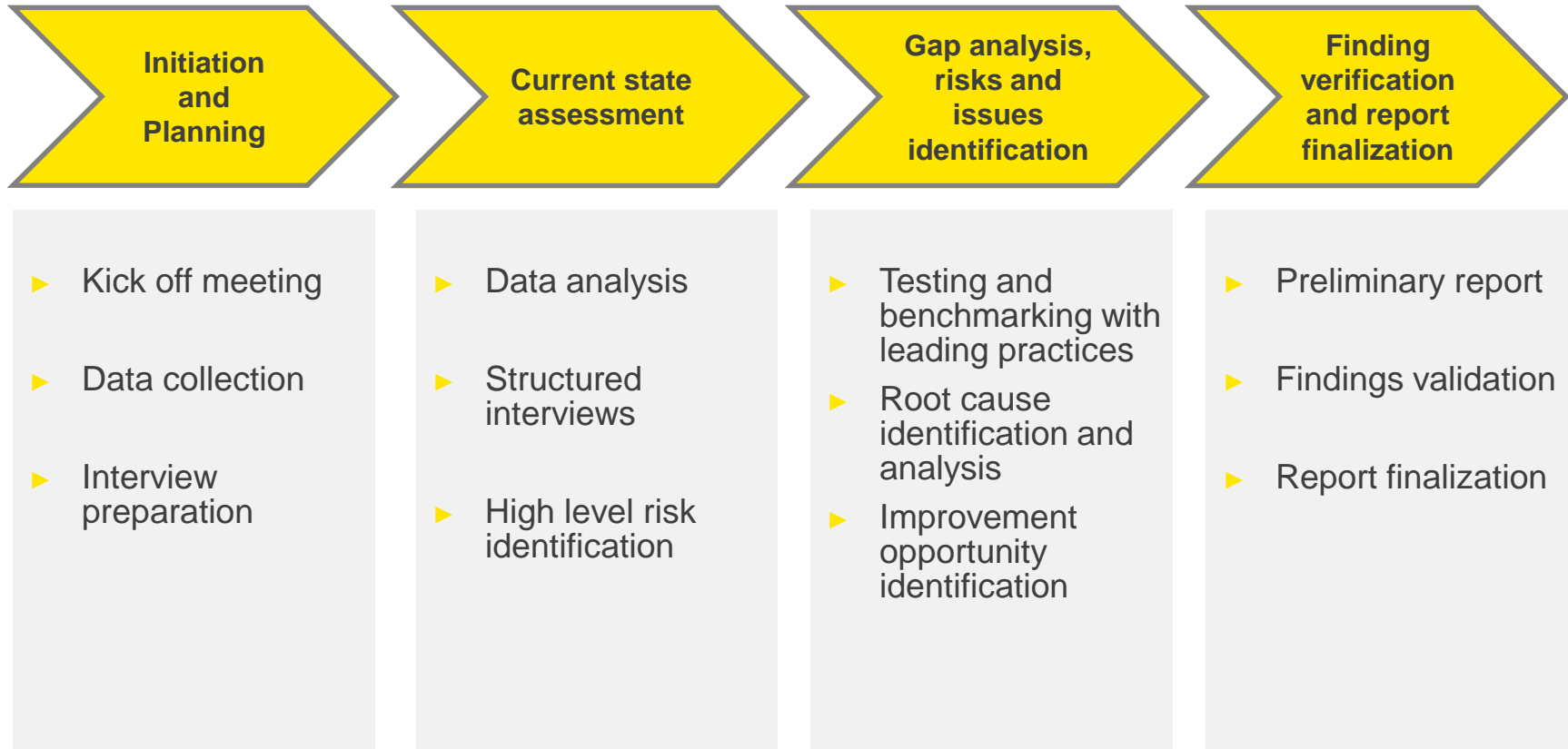
Scope limitations

- ▶ The scope of the review will not assess how the cost and schedule baselines were developed and estimated
- ▶ This scope will not include a review of the scope/change management and risk management processes

Project Review Methodology

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Phase I - Initiation and Planning

Kick off meeting

- ▶ Identify core project team and stakeholders
- ▶ Establish communication protocols
- ▶ Review engagement scope, objectives, approach, timeline and logistics

Data collection and interview preparation

- ▶ Review data request list
- ▶ Identify key stakeholders to interview
- ▶ Set up interview schedule

Phase IV - Findings Verification and Reporting

Preliminary Report

- ▶ A preliminary report is drafted containing the full list of risks and issues as well as their prioritization and recommended actions

Finding validation and Report Finalization

- ▶ Based on feedback on preliminary report, assess need to conduct further interviews and finalize the report

Phase II - Current State Assessment

Initial data review

- ▶ Review data provided
- ▶ Request additional data (if needed) and seek clarification related to data received

Structured interviews

- ▶ Conduct interview
- ▶ Assess interviewees understanding on processes and procedures
- ▶ Get clarification / review data provided

Phase III - Gap Analysis, Risks and Issues Identification

Testing / benchmarking with leading practices (PMBOK, AACE) and root cause analysis

- ▶ Assess cost/schedule management processes and controls against leading practices
- ▶ Identify gaps in complying with corporate/functional policies and procedures
- ▶ Root cause analysis and improvement opportunities identification

Approach of the review

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The review will assess:

- ▶ The processes and procedures for managing, controlling and reporting on cost and schedule against leading practices and standards (PMBOK).
- ▶ Implementation and compliance of these processes and procedures on selected contracts/work packages.

The review will be conducted through a series of interviews and data review which will include:

- ▶ Interviewing staff within the Project Controls Team.
- ▶ Data review of material contracts/work packages (tentatively Astaldi, Vallard, Andritz Hydro) with regard to cost and schedule. A sample of cost and schedule data/reporting will be reviewed.
- ▶ Interview of identified interfaces of Project Controls Team, including Project Managers of selected contracts/work packages.

Proposed Timeline

Activities	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6
Planning and review initiation	■	■				
Conducting Kick Off Meeting		■				
Perform fieldwork including interviews and analysis			■	■		
Validate results with Nalcor and Oversight Committee				■	■	
Perform additional review as required				■	■	
Write and present draft report					■	■
Finalize and issue the final report						■

Timely access to data and respective stakeholders determines the amount of time required to conduct the review. The timeline is based on timely access to data and Nalcor personnel as well as timely feedback during the reporting phase.

- ▶ Finalize workplan and data request listing with Nalcor IA and Oversight Committee
- ▶ Conduct audit kick off meeting with key stakeholders
- ▶ Set up interview schedule
- ▶ Continue collection and reviewing data

OVERSIGHT COMMITTEE

WORKPLAN FOCUS AREA - SCHEDULE AND COST MANAGEMENT

1.0	Plan & Schedule Management and Maintenance
1.1	How the schedules of Nalcor major packages and major contractors are monitored and controlled
	<p>Review:</p> <ul style="list-style-type: none"> - Monitoring and controlling processes in place - How work performance data are provided from the various sub projects / outside vendors to update the schedule. This refers to information on project progress such as which activities have started, their progress (e.g. actual duration, remaining duration, physical percent complete) and which have finished - Process to ensure schedule is accurate and realistic - How the integrity of project schedule is performed / what the criteria are (project set-up, activity details, schedule logic and constraints, scheduling method, critical path/float, resource management, progress, P6 compliance) - Resources/interfaces involved in schedule monitoring process
1.2	How schedule performance is reviewed for major contractors and work packages
	<p>Review:</p> <ul style="list-style-type: none"> - What metrics are used to measure schedule performance (SPI...) - How performance data are collected and reviewed - How often schedule performance is reviewed - If a process for documenting lessons learned from inaccurate scheduling is in place
1.3	How schedule variance analysis is conducted for major contractors and work packages
	<p>Review:</p> <ul style="list-style-type: none"> - How current project status / data to conduct variance analysis are gathered and assessed - How often schedule variance analysis is conducted - How float and critical path are assessed and how often
1.4	How project schedule is forecasted
	<p>Review:</p> <ul style="list-style-type: none"> - How trend analysis is used for schedule forecasting purposes - What information is used for schedule forecasting - What is the basis for schedule forecasting - How risks and mitigation actions are taken into consideration during forecasting process (compare with risk register)
1.5	How schedule variations at level 4, 5, 6 are integrated in the project control schedule
	<p>Review:</p> <ul style="list-style-type: none"> - How schedule integration between different contractors/subcontractors is assessed - How the application of consistent standards and expectation with contractors/subcontractors is assessed

1.6	How corrective actions and change requests are managed
	<p>Review:</p> <ul style="list-style-type: none"> - How corrective actions are identified - Approval process in place to make changes to the master schedule - How significant schedule delays get communicated to various package leaders/Component Managers - How roles and responsibilities for implementation of corrective actions are assigned / how implementation plan is monitored - How rectification of trends and improvement to project's schedule performance are done - How costs associated with schedule delays are quantified and how these costs are factored in the budget/forecast process
1.7	How data for schedule progress reporting (actuals, forecasts, performance measurements) are gathered and reviewed
	<p>Review:</p> <ul style="list-style-type: none"> - Sample of progress reports - How the weighting system factor is used for measuring progress - How progress is assessed (physical % complete, earned value...) for engineering, construction, supply chain, offsite fabrication. - How the quality of information in the report is assessed and validated - How progress versus baseline is tracked and reported - Process for compiling the monthly report (who prepares the report, who reviews/approves it) and average turnaround for its issuance - How progress reports compare to monthly project report - Other reports issued to senior management in between issuance of the monthly report / other reporting mechanism in place
2.0	Cost Management and Maintenance
2.1	How costs of major work packages and major contractors are monitored and controlled
	<p>Review:</p> <ul style="list-style-type: none"> - Monitoring and controlling processes in place - How work performance data is provided (incurred costs, project progress) and controlled - How checks and balances were implemented to ensure that the budgeted funds approved via the AFE/DG3 estimate were entered in Prism correctly. Any documentation supporting this reconciliation. - Consistency of data entered at a CCA (Cost Control Account) level with the WBS - Mapping of task in WBS to cost element - Sample reconciliation report that outlines changes to actual costs, CCB (Current Control Budget) and FFC (Final Forecast Cost) that is provided to the scope/area manager - Coordination procedures for contractors that outline cost reporting requirements and review a sample of these reports - Type of information requested to contractors to support their cost reports - PM+ and Prism's role for capturing costs (modules of Prism and PM+ that are used by Project Controls). How often incurred costs are updated into Prism - How reconciliation process are performed to ensure incurred costs get updated to actual costs for a contract closeout

	<ul style="list-style-type: none"> - How reconciliation with invoice costs/report from Finance is done
2.2	How cost performance is reviewed for major contractors and work packages
	<p>Review:</p> <ul style="list-style-type: none"> - What metrics are used to measure cost performance (CPI...) - How performance data are collected and reviewed - How often cost performance is reviewed - If a process for documenting lessons learned from inaccurate budgeting and/or forecasting is in place
2.3	How cost variance analysis is conducted for major contractors and work packages
	<p>Review:</p> <ul style="list-style-type: none"> - How current project status / data to conduct variance analysis are gathered and assessed - How often cost variance analysis are conducted
2.4	How changes to cost baseline are managed
	<p>Review:</p> <ul style="list-style-type: none"> - Process and approvals required to make a change to the Original Control Budget - Approvals required for moving approved budget funds between CCA codes.
2.5	How project costs are forecasted
	<p>Review:</p> <ul style="list-style-type: none"> - How trend analysis is used for cost forecasting purposes - What information is used for cost forecasting (work performance...) - Process to calculate Estimate At Completion, Estimate To Complete - What the basis for cost forecasting are - How risks and mitigation actions are taken into consideration during forecasting process (compare with risk register) - Cash flow forecasting process - Process for updating the final forecast cost. Authorization/approval required. Frequency.
2.6	How data for cost progress reporting (actuals, forecasts, performance measurements) are gathered and reviewed
	<p>Review:</p> <ul style="list-style-type: none"> - Sample of progress report. - How the weighting system factor is used for measuring progress - How progress is assessed (physical % complete, earned value...) for engineering, construction, supply chain, offsite fabrication - How the quality of information in the report is assessed and validated - How progress versus baseline is tracked and reported - Process to assess incurred costs (resources involved, inputs used in addition to contractor reports, monthly cut off to capture costs...) and what assumptions are made to estimate and report these costs - Working papers/electronic files maintained each month to support the incurred balance - Process to adjust prior month incurred balances to actuals - How accurate incurred inputs are. Volume/size of the adjustments to actual costs required month over month - Process for compiling the monthly report (who prepares the report, who reviews/approves it)

	<p>and average turnaround for its issuance</p> <ul style="list-style-type: none"> - How progress report compare to monthly project report - Other reports issued to senior management in between issuance of the monthly report / other reporting mechanism in place
2.7	How reserve analysis to monitor status of contingency is conducted
	<p>Review:</p> <ul style="list-style-type: none"> - Process / approvals required to use funds from contingency - How contingency requirements are tracked/reforecasted/updated and reported - Forecast change notice process that is used to draw down funds from the escalation and contingency control account

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