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To: [Aman Gill](#)
Subject: Preliminary Findings_v5 - DS.pptx
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Attachments: [Preliminary Findings v5 - DS.pptx](#)

Government of Newfoundland and Labrador

Review of government protocols to oversee the Lower Churchill Project

Presentation of Recommendations
March 2014



Confidential - Draft for discussion only

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Engagement schedule update

Where we are



Tasks		Wed Mar 12	Thur Mar 13	Fri Mar 14	Mon Mar 17	Tues Mar 18	Wed Mar 19	Thur Mar 20	Fri Mar 21
	Data collection and scheduling interviews								
	Reviewing data and conducting interviews								
	Drafting of preliminary report								
	Meeting with Nalcor								
	Presentation of preliminary findings and collecting feedback								
	Draft and issue report								

EY's Scope

EY's scope for this engagement included:

1. Identify opportunities to improve and formalize the planned governance structure of the committee
2. Conduct a gap assessment of the established Information Request List and recommend additional items that should be added or modified
3. Recommend the type and number of resources required by the government to meet it's mandate

EY's Approach

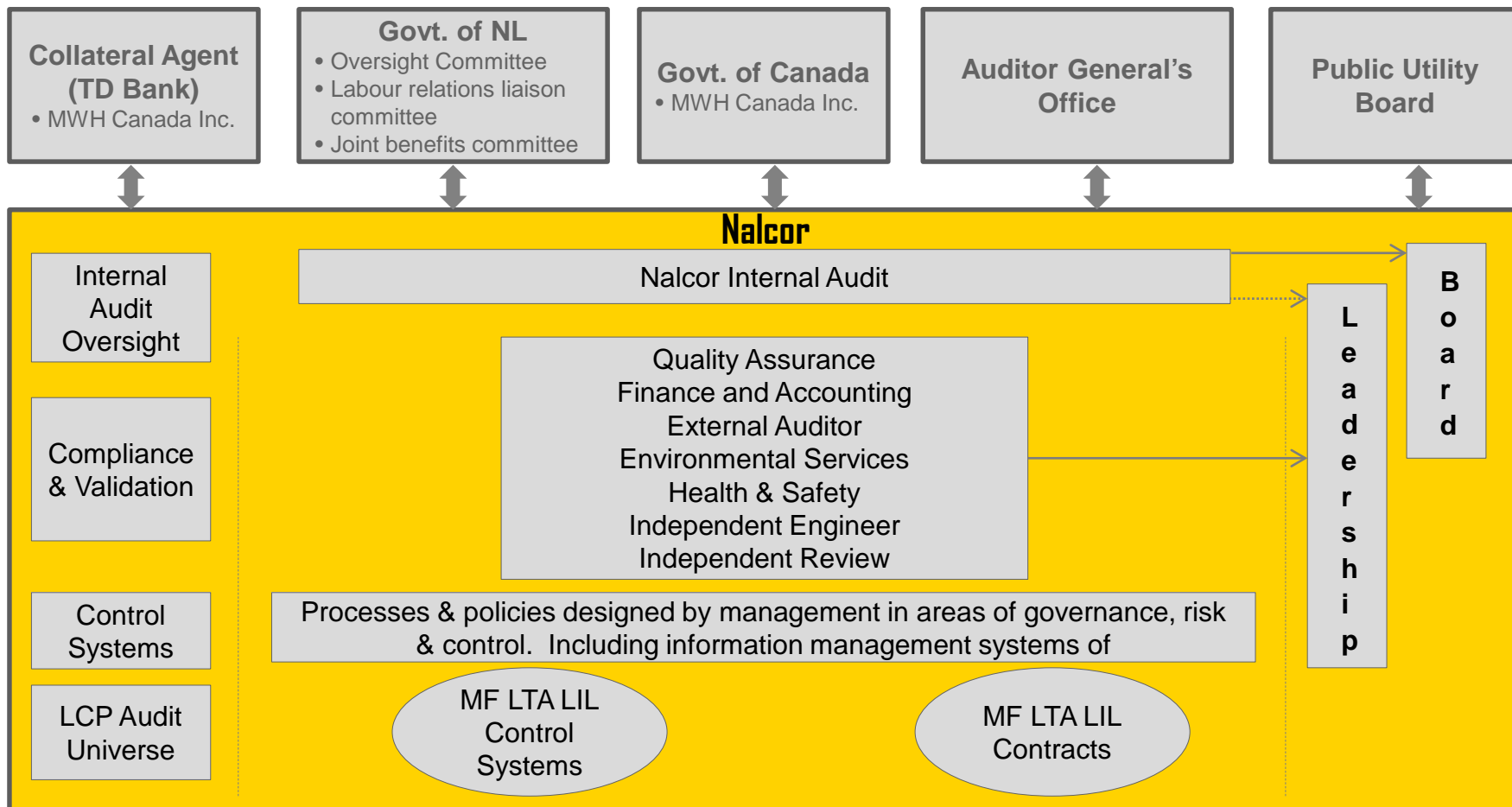
Our recommendations are based on a set of structured interviews and review of documents related to the Lower Churchill project. Key personnel interviewed for this review are listed in the following table.

Name	Title	Department
Julia Mullaley	Clerk of the Executive Council & Secretary to the Cabinet	Executive Council
Tracey King	Assistant Secretary to Cabinet	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
Jim Meaney	LCP – GM Finance	Nalcor
Robb Hull	GM Finance	Nalcor
Mark Bradbury	Internal Audit	Nalcor

Recommendations for government oversight protocols



Representative project reporting/control framework and key oversight considerations



Key oversight considerations for the government of NL:

- Extent of coverage
- Level of independence in oversight
- Appropriate skill sets for information analysis
- Avoiding duplication
- Information sharing and communication protocols

Oversight committee mandate considerations for discussion

What we have heard...

The Government's Oversight Committee has the following objectives:

To establish a reliable and transparent oversight protocol over the Muskrat Falls Hydroelectric Project and to establish an effective communication channel to Cabinet and the general public.

The Committee's oversight mandate could encompass the following areas:

A. 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?
- Are the financial draws complying with established processes?

B. The project is meeting the cost and schedule objectives:

- How does schedule performance and forecast compare to the plan?
- How do cost performance and forecast compare with the baseline?
- Are the costs being reasonably incurred?
- Are the cashflow forecasts adequately reflecting the project's funding requirements?

C. The cost & 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?

Outline of Government Oversight Committee Structure

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

1. Review and approve periodic reports and communications
2. Manage escalation of high risks/issues as necessary
3. Interact with Nalcor Senior Management
 - a. Communication and resolution of issues
 - b. Provision of input to Nalcor on Government requirements
 - c. Approval of request for release of funding?

Working Committee (Group)

Members

Required skills include:

Project Management & Controls, Engineering Management, Procurement/Contracts Management Construction Management, Internal Audit, Project Governance/Risk Management, Finance, Transactions.

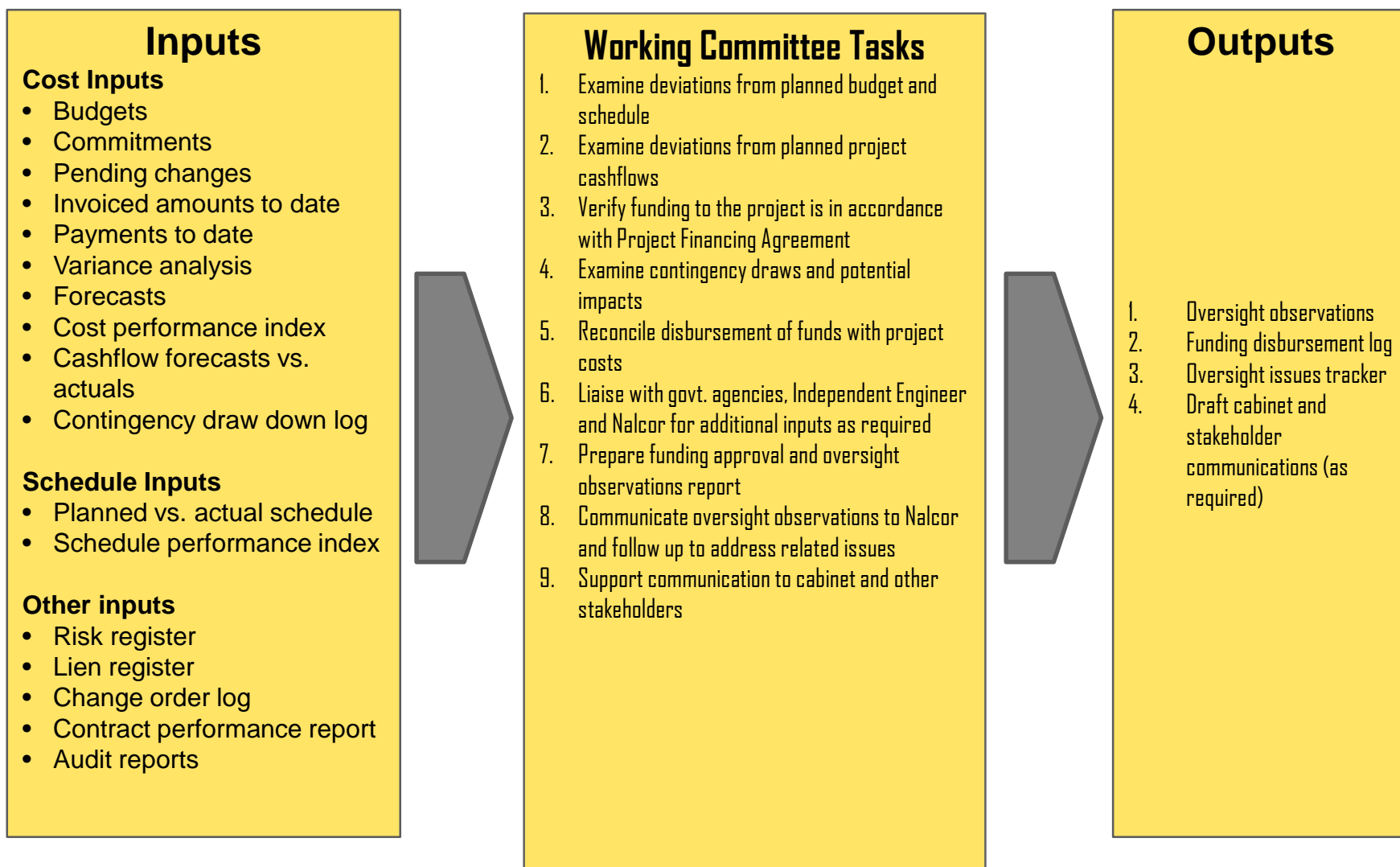
Required size:

TBD

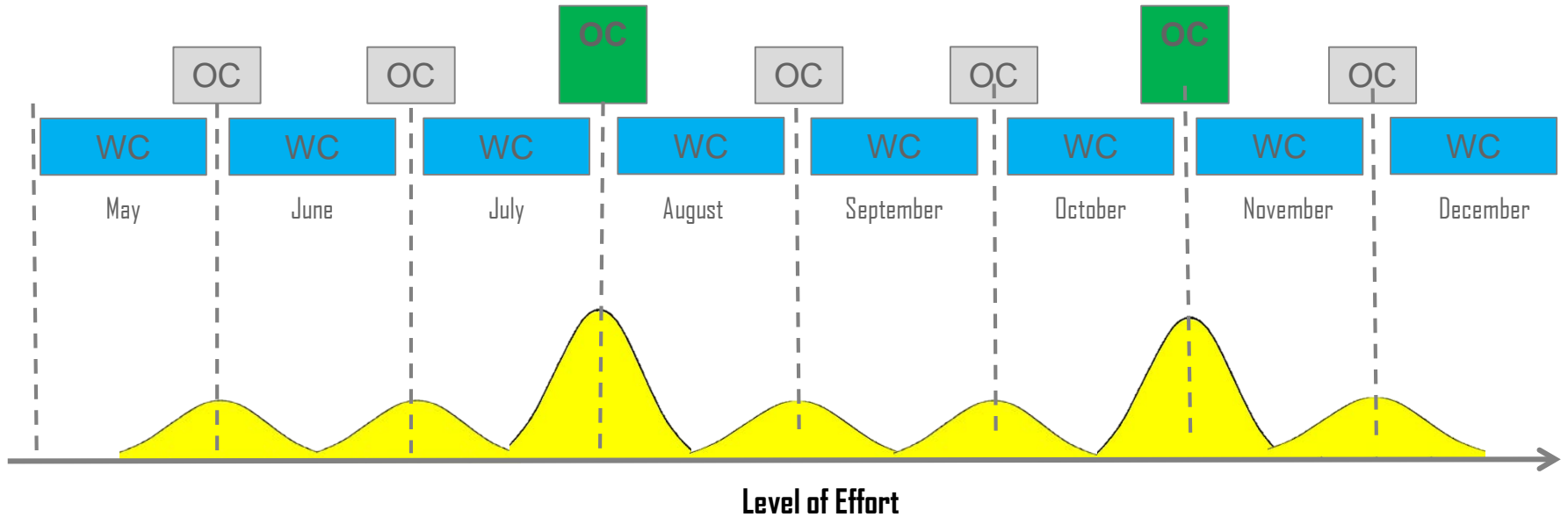
Roles and responsibilities

1. Perform the analysis required to develop recommendations for the Oversight Committee leveraging information from Nalcor
2. Solicit additional inputs from govt. agencies/assurance providers as required
3. Maintain a log for reconciling disbursement of funds with project costs
4. Prepare supporting information for funding approval
5. Liaise with Nalcor Internal Audit
 - Review assurance activities
 - Communicate oversight observations, input and recommendations
 - Monitor critical corrective action
6. Support communication to cabinet and other stakeholders

Working Committee Tasks

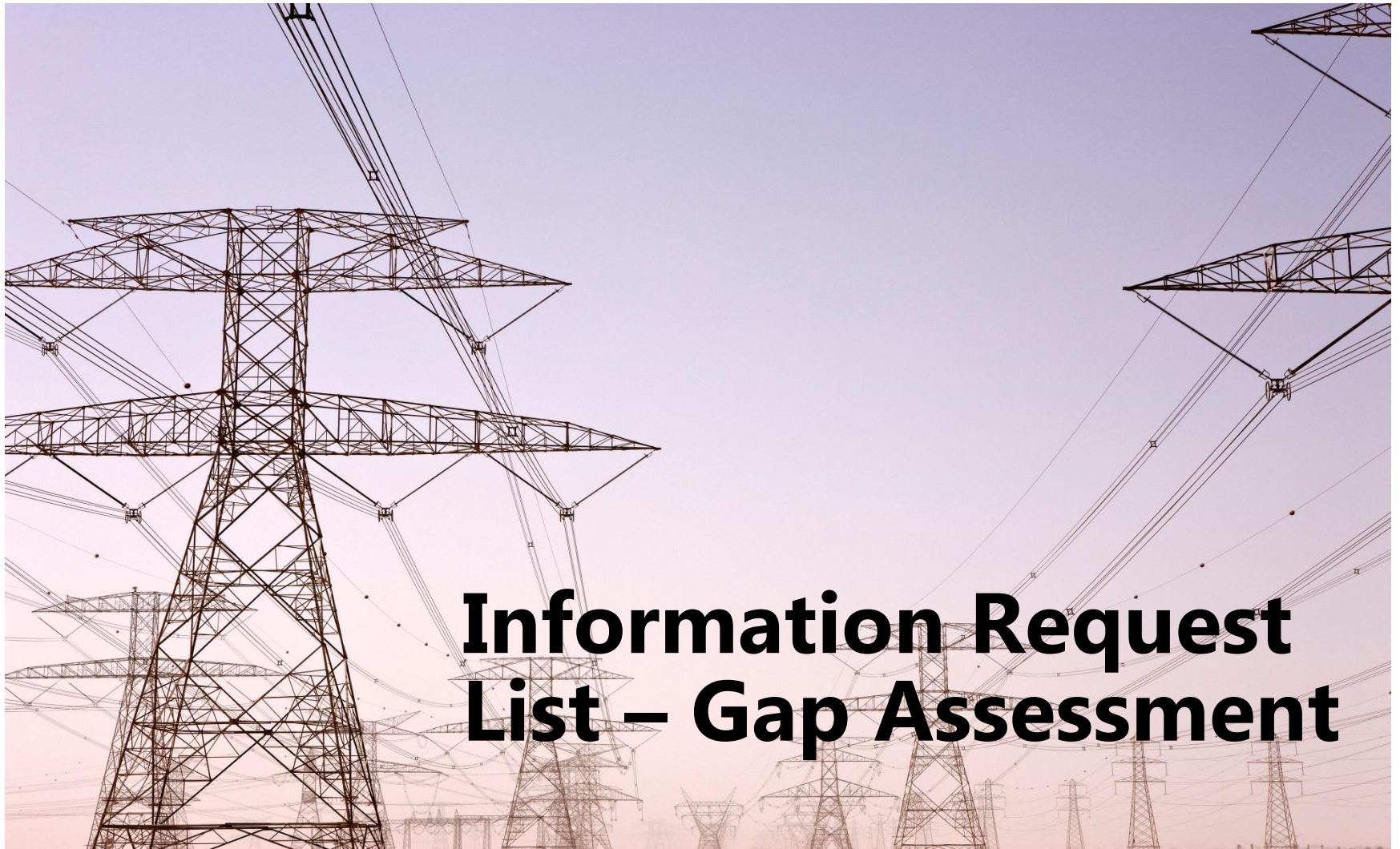


Rhythm of reporting and the business



- WC Working Committee day-to-day tasks
- OC Monthly Oversight Committee Meetings/ Communications
- OC Quarterly Oversight Committee Meetings/ Communications

Oversight and working committee analysis, reporting and communication rhythm should be aligned with the project reporting rhythm



Information Request List – Gap Assessment

Information Request List – Gap assessment

The current Information Request List identifies some of the key cost and schedule information needs. However, the additional information and metrics described below would improve visibility into project performance, risks and prospects for success.

We would expect that this information is already produced by the Nalcor Project Controls group.

1. Cost information

- a. Baseline Budget with Basis of Estimate
- b. Cost report showing: Cost Performance Index (CPI), Budget (Baseline, Change Approved, Change Pending, In Period), Actuals (Incurred -In Period, Cumulative), Estimate To Complete (ETC), Estimate at Complete (EAC), Variance – Period and Cumulative
- c. Contingency draw log, contingency planned vs. consumed (Can also be included in cost report)
- d. S Curve and Performance Graphs showing performance, trend and forecast
- e. Independent Estimate At Complete (IEAC) and To Complete CPI (TCPI)
- f. Contract level cost reporting as above but including: original commitments, approved changes, pending changes, revised commitments, invoiced to date, paid to date, percentage complete and CPI
- g. Rolling cash flow (TBD Period) – planned versus actual
- h. Log for tracking funding draws
- i. Analysis and management corrective action (at individual line item level)

Information Request List – Gap assessment

2. Schedule information required

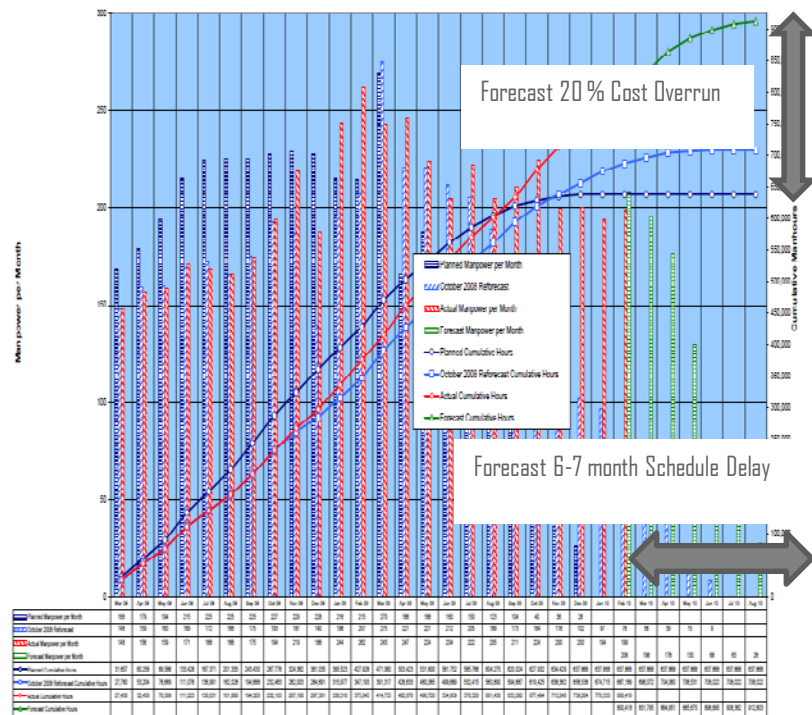
- a. Schedule Specification, Basis of Schedule, Assumptions and a Predecessor/Successor report
- b. Updated Gantt Chart including with critical path, baseline, float, % complete, actual/forecast start, actual/forecast end date (full requirements in Appendices)
- c. Schedule milestone report showing Baseline Finish, Actual/Forecast Finish, Schedule Performance Index, Variance
- d. Performance Graph showing performance, trend and forecast
- e. Top 10 Critical Items and Float
- f. Analysis and management corrective action (at individual line item level)

Activity ID	Activity Name	Original Duration	Remaining Dur.	Early Start	Early Finish	Actual Start	Actual Finish	Total Float	Units % Complete	Activity % Complete	2013															
											December				January				February							
											29	01	08	15	22	29	05	12	19	26	02	09	16	23	02	09
STX5610	MACHINERY ARRANGEMENT	110	89	06-Jan-2014	13-May-2014	02-Dec-2013		-137	36.22%	36.22%	[Gantt Chart: STX5610 is a long red bar starting at Dec 2, 2013 and ending at May 13, 2014, with a yellow dot at Dec 2, 2013]															
STX5620	EQUIPMENT REMOVAL ROUTES	7	7	07-Feb-2014	18-Feb-2014			-56	0%	0%	[Gantt Chart: STX5620 is a red bar starting at Feb 7, 2014 and ending at Feb 18, 2014]															
STX5660	SW COOLING SYSTEM DIAGRAM	5	5	25-Mar-2014	31-Mar-2014			-44	0%	0%	[Gantt Chart: STX5660 is a red bar starting at Mar 25, 2014 and ending at Mar 31, 2014]															
STX6605	Intech machinery arrangement drawing for the 3D model (STX to Support Intech)	0	0		19-Mar-2014			404	0%	0%	[Gantt Chart: STX6605 is a red bar starting at Mar 19, 2014 and ending at Mar 19, 2014]															
CP29DS085	ISSUE UPDATED MACHINERY ARRANGEMENT DRG	0	0		24-Jan-2014			-173	0%	0%	[Gantt Chart: CP29DS085 is a red bar starting at Jan 24, 2014 and ending at Jan 24, 2014]															
CP29DS077	EQUIPMENT REMOVAL ROUTES	0	0		18-Feb-2014			-15	0%	0%	[Gantt Chart: CP29DS077 is a red bar starting at Feb 18, 2014 and ending at Feb 18, 2014]															
CP29DS078	SW COOLING SYSTEM DIAGRAM	0	0		31-Mar-2014			-44	0%	0%	[Gantt Chart: CP29DS078 is a red bar starting at Mar 31, 2014 and ending at Mar 31, 2014]															
		129	110	06-Jan-2014	12-Jun-2014	04-Dec-2013		-94	12.38%		[Gantt Chart: Summary bar for the highlighted row]															
STX5940	DOMESTIC FW SYSTEM DIAGRAM	6	6	06-Jan-2014	13-Jan-2014	04-Dec-2013		9	63.22%	63.22%	[Gantt Chart: STX5940 is a blue bar starting at Dec 4, 2013 and ending at Jan 13, 2014]															
STX6110	OILY WATER SYSTEM DIAGRAM	1	1	06-Feb-2014	07-Feb-2014	11-Dec-2013		-16	90%	90%	[Gantt Chart: STX6110 is a blue bar starting at Dec 11, 2013 and ending at Feb 7, 2014]															
STX5960	F.O. FILL & TRANSFER SYSTEM DIAGRAM	2	2	06-Jan-2014	07-Jan-2014	16-Dec-2013		8	37.25%	37.25%	[Gantt Chart: STX5960 is a blue bar starting at Dec 16, 2013 and ending at Jan 7, 2014]															
STX5970	L.O. SYSTEM DIAGRAM	1	1	21-Mar-2014	24-Mar-2014	16-Dec-2013		-40	80%	80%	[Gantt Chart: STX5970 is a blue bar starting at Dec 16, 2013 and ending at Mar 24, 2014]															
STX5690	COMPRESSED AIR SYSTEM DIAGRAM	1	1	06-Jan-2014	06-Jan-2014	16-Dec-2013		15	20.59%	20.59%	[Gantt Chart: STX5690 is a blue bar starting at Dec 16, 2013 and ending at Jan 6, 2014]															
STX5760	AUXILIARY E.R. MACHINERY ARRANGEMENT	5	5	06-Jan-2014	10-Jan-2014	16-Dec-2013		-115	4.17%	4.17%	[Gantt Chart: STX5760 is a blue bar starting at Dec 16, 2013 and ending at Jan 10, 2014]															
STX5730	PIPING SYSTEMS CALCULATIONS	110	89	06-Jan-2014	13-May-2014	30-Dec-2013		-199	28.13%	28.13%	[Gantt Chart: STX5730 is a red bar starting at Dec 30, 2013 and ending at May 13, 2014]															
STX5710	PIPING AND VALVE MATERIAL STANDARDS	5	5	06-Jan-2014	10-Jan-2014			-21	0%	0%	[Gantt Chart: STX5710 is a red bar starting at Jan 6, 2014 and ending at Jan 10, 2014]															

Information Request List – Gap assessment

3. Other information

- a. Standard project monthly status report (including Health & Safety, Environment, Community/Stakeholder, Scope & Change, Cost, Schedule, Quality, Risk and Contract reports)
- b. Resource profile and graphs/histograms (planned versus actual/forecast)
- c. Project WBS structure and dictionary
- d. Project policies and procedures (PMP, PEP, other processes)
- e. Project execution and contracting strategy
- f. Project risk register
- g. Change order log
- h. Claims log
- i. Liens register
- j. Project assurance plan(s) – including internal audit and third party assurance
 - a. Assurance scope statements & protocols
 - b. Assurance reports



Summary Next Steps

Ernst & Young

- a. Incorporate feedback from today
- b. Build full report
- c. Circulate full report by end of week (Friday)

Government of NL

- a. Develop the terms of reference
- b. Establish the government working committee/ group
- c. Align Government of NL role with existing project assurance mechanisms/ stakeholders
 - Information requirements (gaps) with Nalcor
 - Nalcor's reporting rhythm, align to avoid duplication/ negative impact to project
 - Formalize agreement with Nalcor (information sharing, communication, etc)



Sample of cost report formats

As currently provided

Part I - Hard Costs for the MF Plant

Schedule "A" - Summary of Project Budget - Hard Costs
 Lower Churchill Project-Phase 1
 Muskrat Falls Generation
 Period Ending 31-Jan-2014

Description	Project Budget	Planned Costs		Incurred Costs	
		Current Period	Project-to-Date	Current Period	Project-to-Date
NE-LCP Owners Team, Admin and EPCM Services	\$378,969	\$4,086	\$184,947	\$5,504	\$194,680
Feasibility Engineering	\$18,345	\$10	\$17,855	\$1	\$17,950
Environmental & Regulatory Compliance	\$20,312	\$161	\$14,454	\$425	\$12,787
Aboriginal Affairs	\$13,314	\$487	\$4,478	\$27	\$4,177
Procurement & Construction	\$2,719,626	\$36,509	\$519,581	\$44,723	\$496,989
Commercial & Legal	\$20,457	\$2,084	\$14,286	\$113	\$15,625
Contingency	\$94,255	\$0	\$0	\$0	\$0
Total	\$3,265,278	\$43,337	\$755,601	\$50,793	\$742,208

Note: Costs in CAD (\$ Thousands)

Analysis:

Total incurred costs to date are slightly lower than planned due to slower than planned ramp up of construction and mobilization associated with CH0007 as well as ramp up of project activities following the Christmas 2013 shutdown.

Fuller Analysis (with "Areas of Focus" in red)

Description				Performance	Budget				Actuals		Forecaste		Variance		To Complete	Independent Est @ Complete	
WBS ID	WBS Description	Contract ID	Contract	Cost Perf Index	Baseline	Change Approved	Change Pending	Period	Period	Cumulative	Commitments	Estimate To Complete	Estimate @ Complete	Period	Cumulative	To Complete CPI	Independent Est @ Complete

Typical Gantt Request Format

Schedule Specs for PDF Version of Project Plans

1. Activities broken down by location, major contract and per WBS1

1. Following columns with text data:

- WBS ID
- Activity ID
- Activity Name
- Original Duration
- Current Duration
- Early Start
- Early Finish
- Actual Start
- Actual Finish
- Total Float
- Physical % Complete(*)
- Activity % Complete(*)
- CPI and SPI, if available

(*) Specify how Earned Value is calculated.

1. The following shown on the Gantt bar chart section:

- Activity duration (showing forecast start and finish)
- Baseline duration
- % Complete
- Current data date
- Critical Path