

From: jamesmeaney@lowerchurchillproject.ca
To: dsturge@nalcoreenergy.com
Subject: Fw: Oversight Committee (OC)
Date: Monday, October 20, 2014 9:17:21 AM
Attachments: [.png](#)
[Presentation to Oversight Committee 17-October-2014.pptx](#)

FYI...here is Paul's recap of the meeting

James Meaney

General Manager Finance

PROJECT DELIVERY TEAM

Lower Churchill Project

t. **709 737-4860** c. **709 727-5283** f. **709 737-1901**

e. JamesMeaney@lowerchurchillproject.ca

w. muskratfalls.nalcoreenergy.com

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?

----- Forwarded by James Meaney/NLHydro on 10/20/2014 09:16 AM -----

From: Paul Harrington/NLHydro

To: James Meaney/NLHydro@NLHYDRO, Ed Bush/NLHydro@NLHYDRO,

Cc: Brian Crawley/NLHydro@NLHydro, Gilbert Bennett/NLHydro@NLHydro, Lance Clarke/NLHydro@NLHydro

Date: 10/17/2014 04:20 PM

Subject: Oversight Committee (OC)

Jim and Ed

Gilbert and I attended the meeting and we used the attached deck to address the agenda items that were raised by the OC. many thanks to Ed Bush and his team to pull this data together at such short notice

Generally I thought it went well, the tone was positive, the atmosphere was not tense and I thought that the OC is struggling to find its right place.

There is still a tendency for some in the OC to try and analyze the data we provide on a purely theoretical basis - straight out of the PM book. However without the knowledge and experience we possess it is not a very value adding task and just ends up in a dead end. Gilbert pressed home the point very well that we are managing the contractors and doing what needs to be done, We analyze the data and take the appropriate action , we know where there is float in the schedule and when an activity progress is falling behind, if it is truly critical or not.

The key issue to the OC seems to be getting a heads up if and when there is likely to be a change in cost or schedule that would result in a cost update or change to the First Power/Full power dates currently made public. To that end we did indicate that the remaining three contracts are not yet awarded and that there are cost pressures driven by market concerns about labour productivity actually being achieved on LCP which is causing additional risk and could drive up the bid costs. We did however not provide any dollar figures because it is still in the bid process and we have not yet finalized our work with the bidders yet, so it is not our practice to provide interim numbers because of commercial confidentiality....this was accepted by the OC

So it will be up to Gilbert and I to meet with the OC monthly and provide updates , however we were clear that the contracts would have to be awarded at some point and that we would get internal approvals at PD/VP/CEO level because we are managing the project and when that was provided we would advise the OC and IE. The issue would then be when a formal project cost/schedule update would be made public- and that would be a CEO/Premier decision. Based on current understanding of when the final big three contracts would be awarded that would be after the Nov 30 Anniversary date and most likely Q1 2015.

Regarding the EV question - i think that Craig will be asking for a meeting to fully grasp this .

Regards Paul



Presentation to Oversight Committee 17-October-2014.pptx

Paul Harrington

Project Director

PROJECT DELIVERY TEAM

Lower Churchill Project

t. 709 737-1907 c. 709 682-1460 f. 709 737-1985

e. PHarrington@lowerchurchillproject.ca

w. muskratfalls.nalcorenergy.com

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Presentation to Oversight Committee – Muskrat Falls 17-October-2014

Boundless Energy

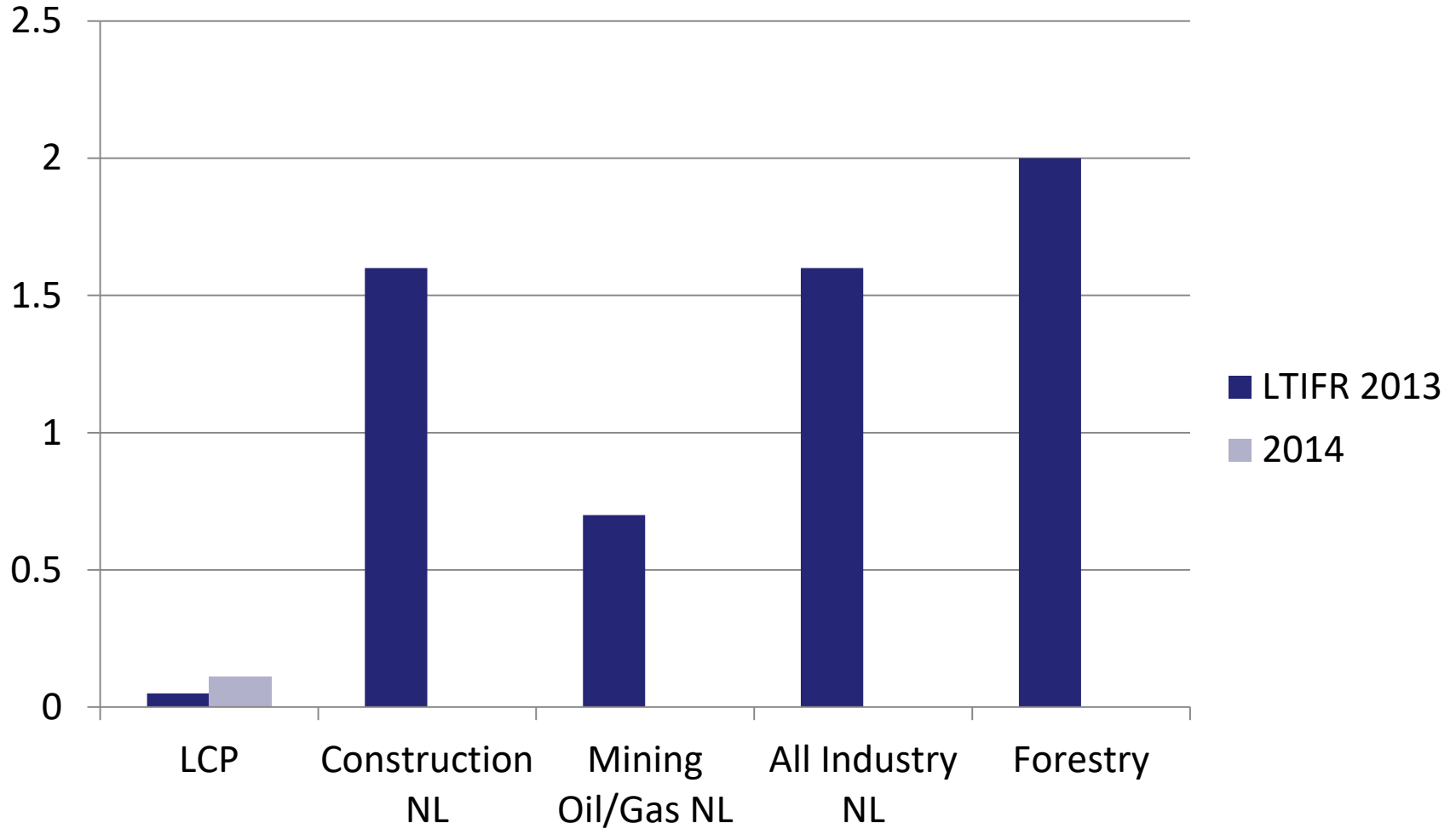


Confidential



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MOMENT
for Safety

LCP LTIFR Comparison



General Update

Muskrat Falls – Recent Activity

- Total site workforce = 1,275
 - Astaldi workforce = 1,036 onsite
- Continuing extensive rebar installation, formwork, rock cleaning and concrete placement in Spillway. Base slab nearing completion – one pour remaining. Rebar and concrete work continuing with piers. Improvement in Astaldi performance over recent weeks
- Continuing erection of structural steel and roofing for Powerhouse cover system
- Continuing concrete work on transition dams

Muskrat Falls – Upcoming Activities

- Continue major concrete work in Spillway
- Continue installation of enclosure over Powerhouse
- Continue supply chain analysis for CH-0008 North Spur package
- CH-0009 North and South Dams award Q1 2015
- CH-0031 Balance of Plant award Q2/Q3 2015

Powerhouse Cover System



Transition dams



Spillway

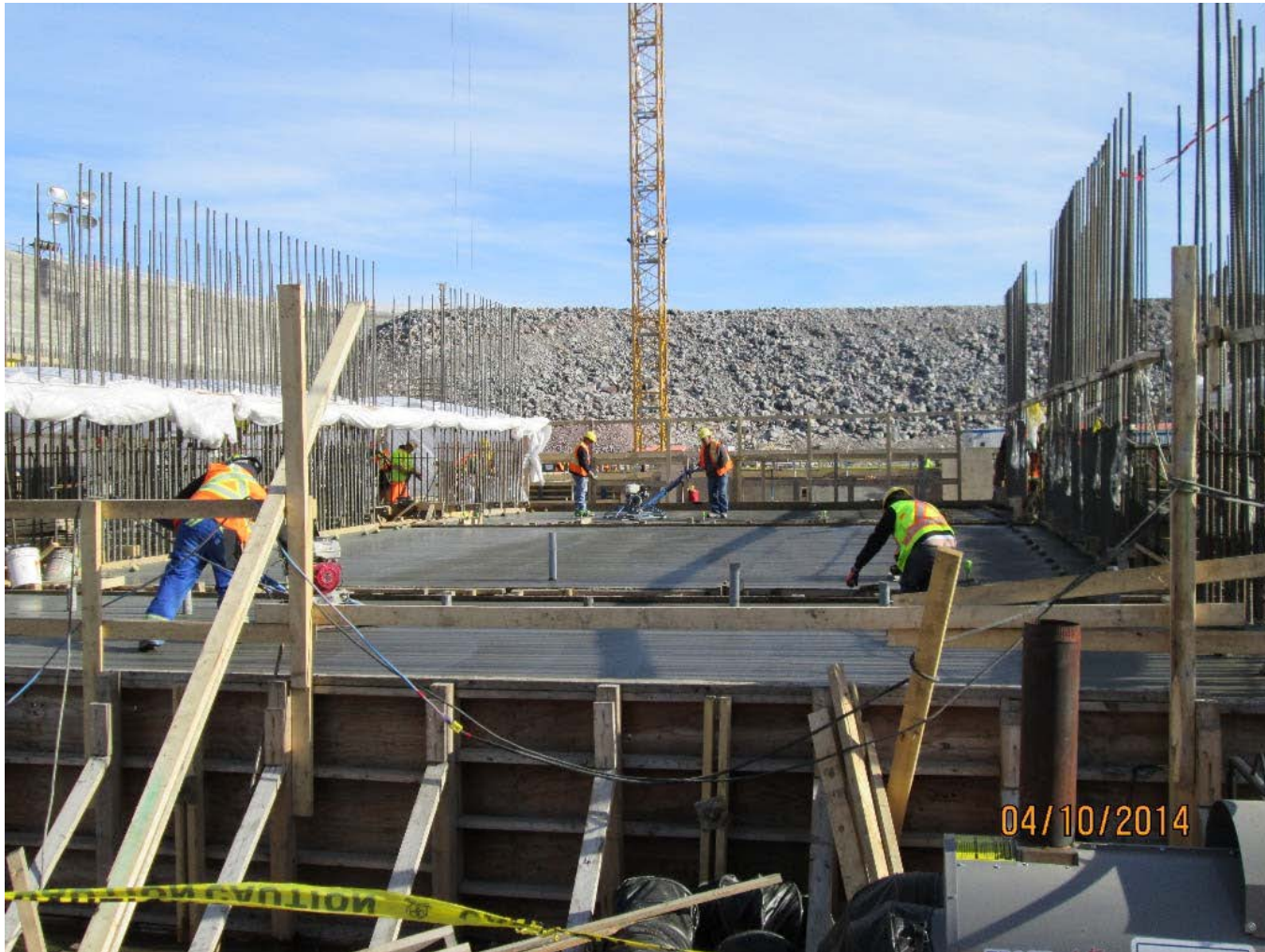




Spillway



Spillway and piers



Labrador Island Transmission Link – Recent Activities

- Preparing to formally award Synchronous Condensers and Switchyards packages to Alstom
- Earthworks at Soldiers Pond essentially complete; demobilization in progress
- Continuing work on Forteau Quay and Quarry for subsea rock installation contract
- HDD program complete at Forteau; installing casing in Shoal Cove
- Commenced installation of foundations for HVdc towers

Labrador Island Transmission Link – Upcoming Activities

- Continue ROW clearing and access road work in Labrador
- Continue foundation installation
- Complete vendor design of foundations and towers
- Continue subsea cable manufacturing process
- Complete HDD casing installation in Shoal Cove; demobilize rig

HDD rig prior to demob from Labrador



Labrador Transmission Assets – Recent Activities

- Valard continues to mobilize in Labrador – workforce approx. 270
- Right of Way clearing essentially complete
- Assembly of towers (267 to date), foundations (190 to date) and anchors (206 to date) continuing
- Commenced erecting towers (2 to date)
- Earthworks program at Churchill Falls essentially complete; demobilization in progress

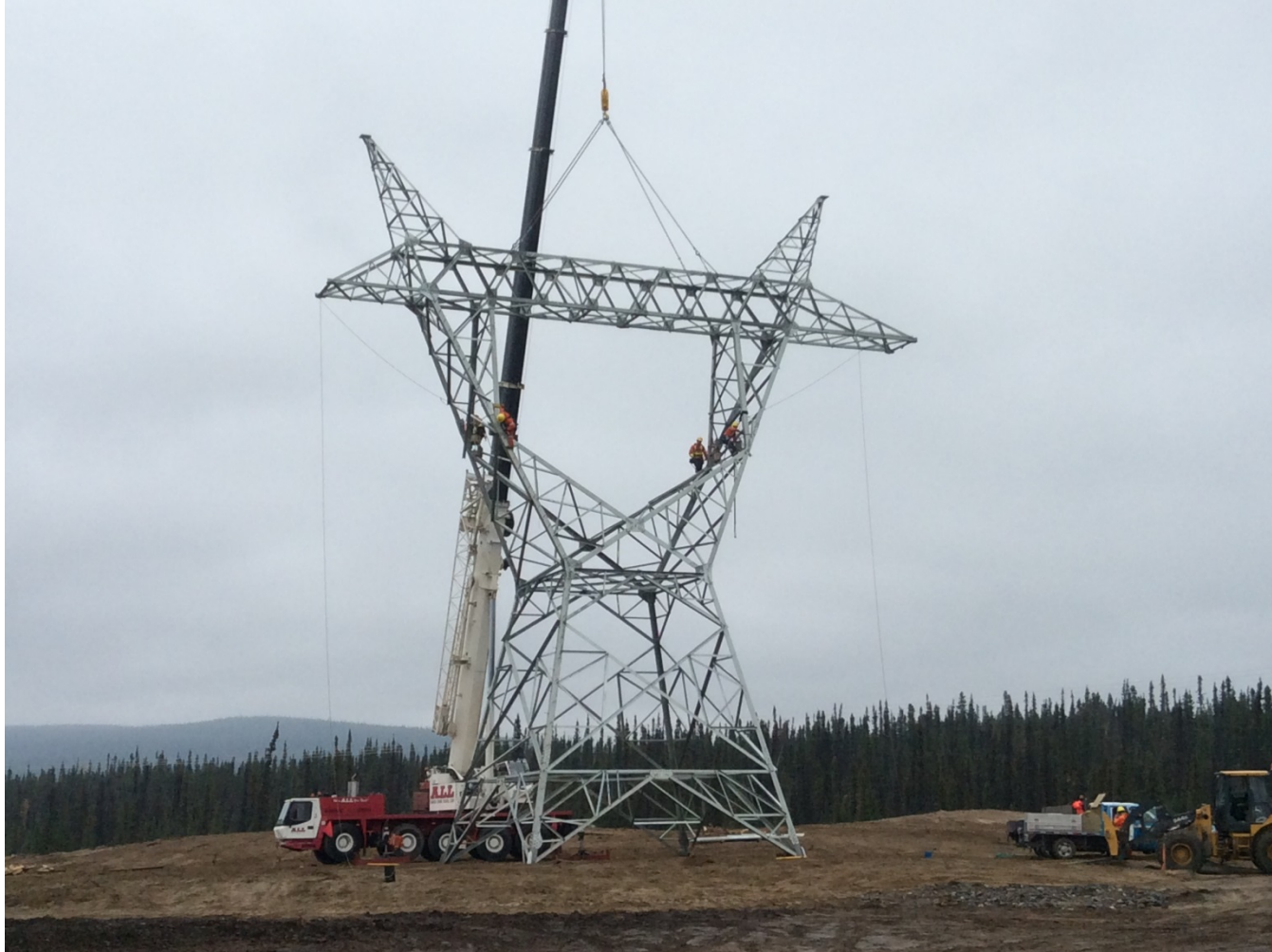
Labrador Transmission Assets – Upcoming Activities

- Continue surveying and staking
- Continue tower assembly
- Continue guy wire installation
- Continue installation of tower foundations
- Continue tower erection

LTA - Tower Assembly



LTA - Tower Assembly



LTA - Tower Assembly



Status Update Contracting

Process

- Our RFP Process is rigorous
- The Contract review team is split into two groups Technical and Commercial
- We do not disclose commercial information
- We advise the IE and OC of the contract value when we have completed the negotiations- we are still in that process
- If we do not have a competitive number of bidders or negotiations fail then we may use different contract formats, rebid or seek other bidders to arrive at overall best value

Status of Three Remaining Major Contracts

- CH008 – Construction of North Spur Stabilization Works
- CH009 – Construction of North and South Dams
- CH0031- Supply and Installation Mechanical and Electrical Auxiliaries

Contracting Status

CH008 Construction of North Spur Stabilization Works

- Three unit price proposals received end of Q2 2014
- All proposals technically acceptable
- Commercial analysis identified concerns with risks associated trades labour productivity
- Negotiating with lead bidder modifications to pricing model – moving towards cost based bonus model tied to labour hours
- Contract Award anticipated year-end 2014 or Q1 2015 but could go for rebid if negotiations are not successful

CH009 Construction of North and South Dams

- RFP closes next week
- Expect three proposals (unit price)
- Bid clarifications will follow and negotiations thereafter
- Contract award targeted for Q1 2015

CH0031 Supply and Install Mechanical and Electrical Auxiliaries

CIMFP Exhibit P-03642

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- Three of original six bidders have been submitting clarifications – strong demand in local market
- Closing date for proposals has been extended until the end of November.
- Received a request from a group to be added to the bid list. This group (JV) has experience working in NL and is led by a large North American contractor.

Status of CH0031 Cont'd

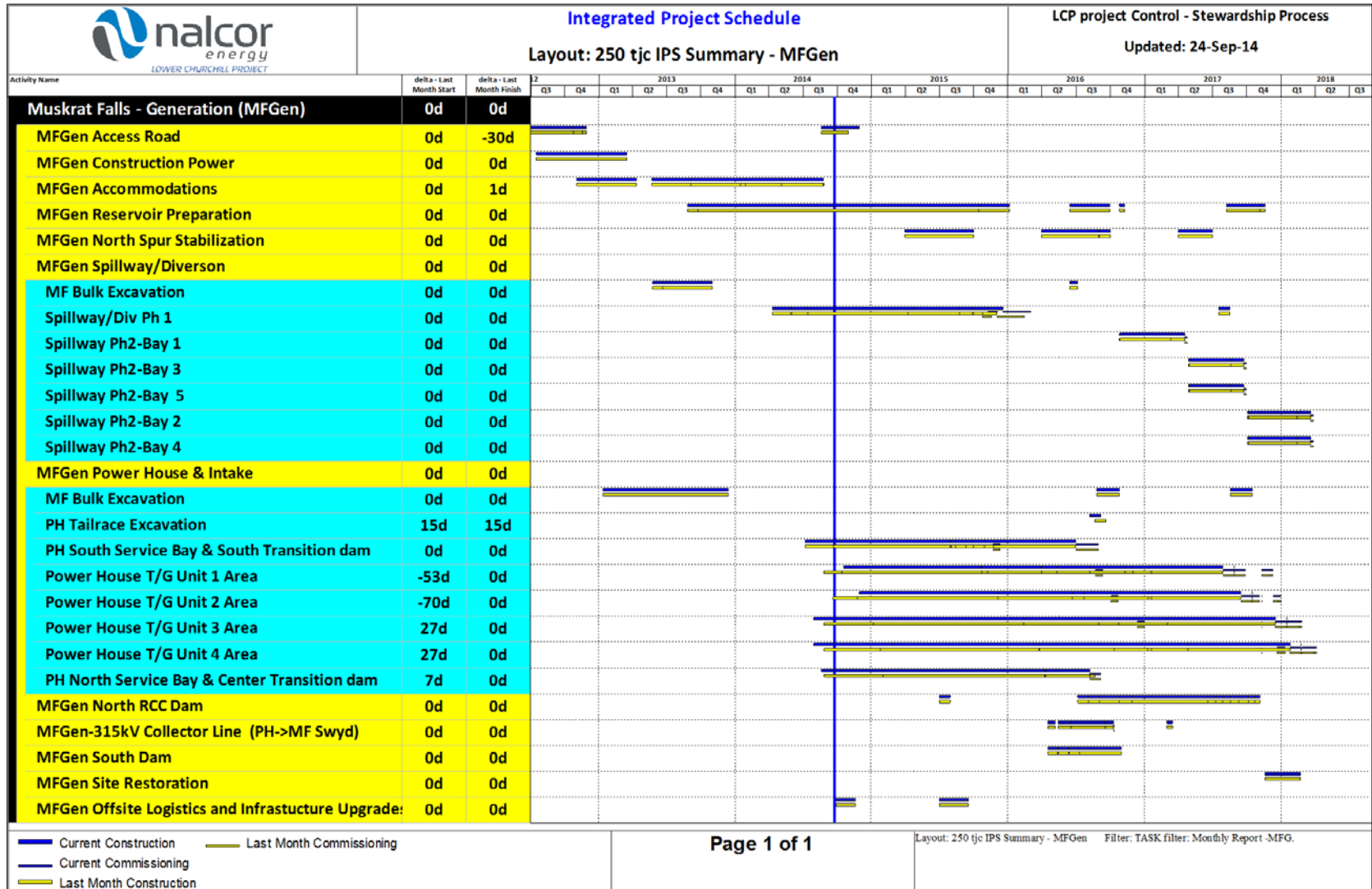
- If additional bidder is added expect bid closing early Q1.
- Pricing to be submitted on unit price fixed basis or unit price fixed with trades labour on a cost reimbursable basis under target with cap.
- Contract award targeted for late Q2 or early Q3.

Earned Value and CH0007

CH0007 - Progress and Schedule

MFGen Progress Table 2014 Sep								
This Reporting Period								
	Weight	Period %			Cumulative %			
	Factor %	Plan	Earned	Variance	Plan	Earned	Variance	
	A	B	C	C-B	E	F	F-E	
MFG Road/Camp/Constr. Power	7.9%	0.5%	1.6%	1.1%	98.5%	98.2%	-0.3%	
MFG Reservoir Preparation	6.5%	1.9%	6.3%	4.4%	47.4%	53.3%	5.9%	
MFG Spillway & Gates	11.4%	3.1%	3.1%	0.0%	20.0%	17.8%	-2.2%	
MFG North Spur Stabilization	4.2%	2.6%	0.0%	-2.6%	3.7%	0.0%	-3.7%	
MFG North Dam (incl North Transition Dam)	7.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
MFG Powerhouse & intake	54.9%	2.2%	0.3%	-1.9%	12.1%	9.2%	-2.9%	
MFG South Dam (incl South Transition Dam)	1.1%	0.0%	0.5%	0.5%	0.0%	0.5%	0.5%	
MFG Misc:Eng/ 315kV/Site Rest./logistic	6.5%	2.2%	0.0%	-2.2%	79.6%	75.7%	-3.9%	
MFGen TOTAL	100.0%	2.0%	1.1%	-0.9%	25.1%	23.3%	-1.8%	
Last Reporting Period								
	Weight	Period %			Cumulative %			
	Factor %	Plan	Earned	Variance	Plan	Earned	Variance	
	A	B	C	C-B	E	F	F-E	
MFG Road/Camp/Constr. Power	7.9%	0.5%	1.4%	0.9%	98.0%	96.6%	-1.4%	
MFG Reservoir Preparation	6.5%	1.8%	2.8%	1.0%	45.5%	47.0%	1.5%	
MFG Spillway & Gates	11.4%	2.1%	1.0%	-1.1%	16.9%	14.7%	-2.2%	
MFG North Spur Stabilization	4.2%	1.1%	0.0%	-1.1%	1.1%	0.0%	-1.1%	
MFG North Dam (incl North Transition Dam)	7.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
MFG Powerhouse & intake	54.9%	1.0%	0.0%	-1.0%	9.9%	8.9%	-1.0%	
MFG South Dam (incl South Transition Dam)	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
MFG Misc:Eng/ 315kV/Site Rest./logistic	6.5%	1.7%	0.0%	-1.7%	77.4%	75.7%	-1.7%	
MFGen TOTAL	100.0%	1.1%	0.4%	-0.7%	23.1%	22.2%	-0.9%	

CH0007 - Progress and Schedule



CH0007 - Progress and Schedule

- **Spillway**
 - Commenced permanent concrete August 2014.
 - Spillway slab 90% complete.
 - Spillway piers in progress all areas.
- **Powerhouse & Intake**
 - ICS construction underway.
 - Foundation cleaning underway.
 - Concrete for intakes at Units 3 and 4.
 - No change in pit free dates for turbine and generator installation.

CH0007 - Progress and Schedule

- Other structures
 - Centre transition dam concrete underway.
 - Separation wall concrete underway.
 - Foundation preparation for north and south transition dams underway.

Integrated Cover Structure (ICS)

- Structural steel is being erected over Units 1 and 2.
- ICS over Units 1 and 2 will be complete by end of November – allowing work to continue into Winter 2014/2015.
- ICS over Units 3 and 4 will continue throughout the winter.
- Cladding is underway.





Material Contracts

Material Contracts Summary - 1/3

Package #	Package Title	A Current Budget	B Contract Price	C FFC	D = C - A Variance	Remarks
CT0327	Construction of 350 kV HVdc Transmission Line - Section 1 (MF to SOBI to Deer Lake 610 km)	974,561,028	831,270,088	974,913,078	352,050	0.35 M: Extension of the TL due to new location of Forteau transition station. All DC line clearing and construction works are merged in this package. Award of the clearing of the HVDC ROW will be done by blocks. The contract price includes the award of around 150 KM of clearing in Labrador for \$ 22 M
CT0346	Construction of 350 kV HVdc Transmission Line - Section 2 (Central & Eastern NL 470 km)	0	0	0	0	Merged in CT0327.
CD0502	Construction of AC Substations	272,774,897	2,507,251	271,708,096	(1,066,801)	Transfer to CD0503 for supply of insulating gravel at CF LNTP signed
CD0534	Construction of Synchronous Condensers at Soldiers Pond	164,560,470	1,942,500	164,560,470	0	LNTP signed
CH0009	Construction of North and South Dams	182,000,000	0	182,000,000	0	
PH0016	Supply of Generator Circuit Breakers	1,715,196	1,715,196	1,715,196	0	
PH0014	Supply of Generator Step-up Transformers	15,250,470	15,050,470	15,237,170	(13,300)	

Material Contracts Summary - 2/3

Package #	Package Title	A Current Budget	B Contract Price	C FFC	D = C - A Variance	Remarks
CH0002-001	Supply and Install Accommodations Complex Buildings	144,834,994	144,365,263	144,834,994	0	
SH0018	Provision of Catering, Housekeeping & Janitorial Services (MF)	101,127,376	101,127,376	101,127,376	0	
CH0006-001	Construction of Bulk Excavation Works	148,182,731	138,918,273	143,446,966	(4,735,765)	(4.7) M: Forecast adjustment to final forecasted quantities
LC-SB-003	Submarine Cable Design, Supply and Install	124,889,747	118,434,282	124,889,747	0	
CH0024-001	Construction of Reservoir Clearing - North Bank	129,170,400	129,170,400	129,170,400	0	
CH0030	Supply and Install Turbines and Generators	180,606,166	169,674,732	180,606,166	0	Variance between B and C is reserved for Change Order related to Labor agreement rate adjustments impact
CH0032	Supply and Install of Powerhouse Hydro-Mechanical Equipment	232,054,255	205,015,392	232,054,255	0	Variance between B and C is reserved for non awarded scope related to secondary concrete and incentive bonus

Material Contracts Summary - 3/3

Package #	Package Title	A Current Budget	B Contract Price	C FFC	D = C - A Variance	Remarks
CT0319	Construction of 315 kV Hvac Transmission Line (MF to CF)	259,044,807	258,448,327	259,044,807	0	
CD0501	Supply and Install of Converters and Cable Transition Compounds	453,643,797	353,387,359	454,269,797	626,000	0.6 M: The addition of lockable visible break to the scope of the contract Variance between B and C is reserved for non awarded scope related to civil works
SM0714	Engineering, Procurement and Construction Management (EPCM) Services	359,318,706	359,318,706	359,318,706	0	
CH0007	Construction of Intake & Powerhouse, Spillway and Transition Dams	1,081,107,548	1,025,481,073	1,081,107,548	0	Variance between B and C is reserved for cancelling the credit of 43 M related to the North Spur and North and South Dams award to Astaldi, in addition to anticipated change orders related to over break concrete and several ECN related to engineering fine tuning
CH0008	Construction of North Spur Stabilization Works	89,051,008	0	89,051,008	0	
CH0031	Supply and Install Mechanical and Electrical Auxiliaries (MF)	86,707,467	0	86,707,467	0	
	Contracts 1-20 as per Above	5,000,601,063	3,855,826,688	4,995,763,247	(4,837,816)	

Contingency

Contingency

- Reference AACE I 69R-12 Cost Estimate Classification – Hydropower Industry

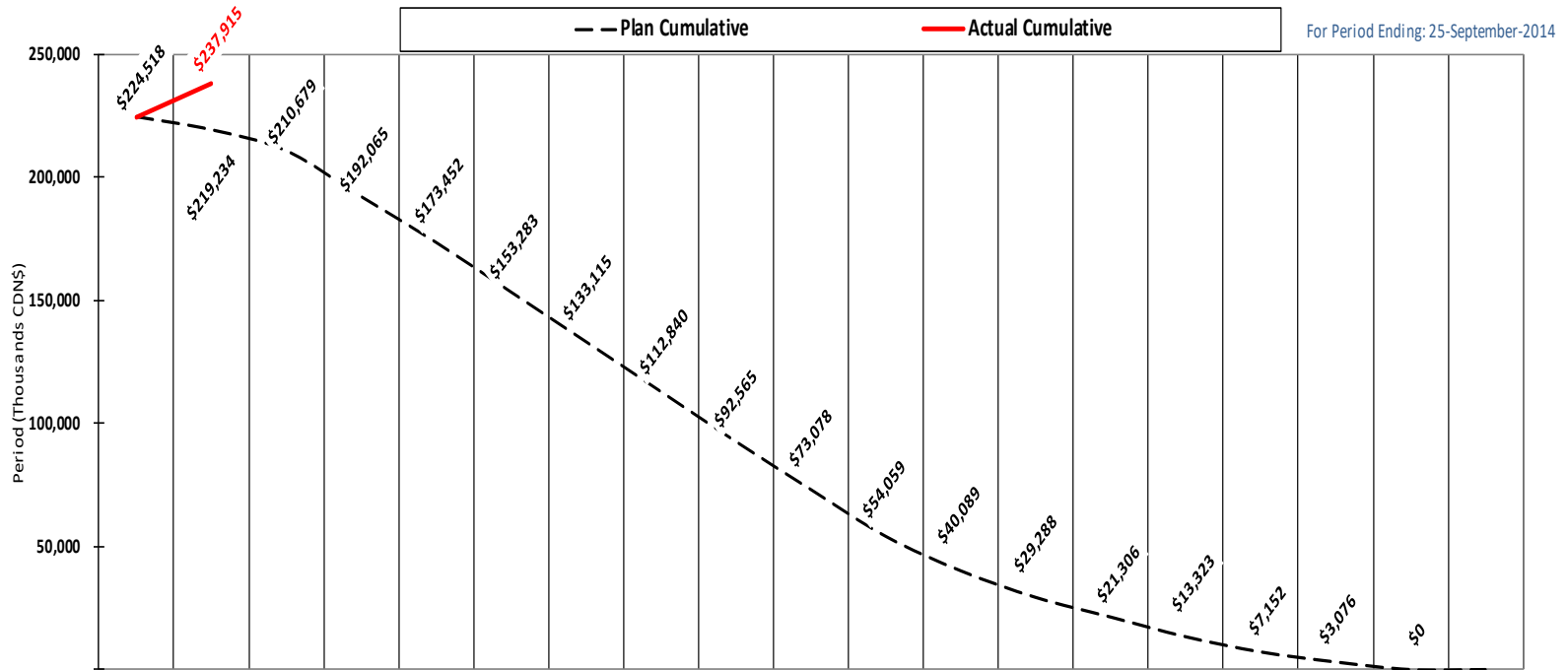
Estimate Class	Maturity Level- expressed as % of deliverables	End usage	Method	Expected Accuracy range	Selected Contingency
Class 1	65% to 100%	Check estimate or bid/tender	Detailed unit cost with detailed take off	-3% to +3% Lo -10% to +15% Hi	A maturity level of 90% was chosen and a Contingency of 4.6% of the “to go” costs was selected

- With Engineering complete and 90% of Contracts awarded the Project is considered to be at an advanced maturity level of Project Definition – Close to the upper end of a Class 1 Estimate
- The expected accuracy range is therefore close to the Low Range of +3% and so we selected 4.6% as the contingency – this is in line with our aggressive approach towards contingency – we are driving the team to keep within that contingency – (see contingency draw graph)

Project Contingency Drawdown

Lower Churchill Project Phase I

Project Contingency Drawdown (CDN \$'000)



Period	Q2-2014	Q3-2014	Q4-2014	Q1-2015	Q2-2015	Q3-2015	Q4-2015	Q1-2016	Q2-2016	Q3-2016	Q4-2016	Q1-2017	Q2-2017	Q3-2017	Q4-2017	Q1-2018	Q2-2018	Q3-2018	Q4-2018
Plan (AFE rev1)	-	5,284	8,555	18,613	18,613	20,169	20,169	20,275	20,275	19,487	19,020	13,969	10,801	7,982	7,982	6,172	4,076	3,076	-
Consumed	-	(13,398)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative	Q1-2012	Q2-2012	Q3-2012	Q4-2012	Q1-2013	Q2-2013	Q3-2013	Q4-2013	Q1-2014	Q2-2014	Q3-2014	Q4-2014	Q1-2015	Q2-2015	Q3-2015	Q4-2015	Q1-2016	Q2-2016	Q3-2016
Plan (AFE rev1)	224,518	219,234	210,679	192,065	173,452	153,283	133,115	112,840	92,565	73,078	54,059	40,089	29,288	21,306	13,323	7,152	3,076	-	-
Actual Budget	224,518	237,915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note 1: AFE rev1 = Authorization for Expenditure approved by Nalcor Energy Board of Directors on June 2014

Discussion CM process

Change Management Process

- Discussion on specific items

Risk Level: Qualitative assessment as a result of the combination of the risk probability and impact based in the Risk Assessment Matrix (RAM).

LOWER CHURCHIL PROJECT (LCP) - RISK ASSESSMENT MATRIX

		Cost (\$Millions)	Schedule (Months)	Safety	Environment	Quality	Reputation
Extreme	Consequence	> 100	> 12	Single or multiple fatalities	Extensive Effect	System & safety requirements are not achieved	International Media coverage. Irreparable stakeholder impact
Major		10 - 100	3 - 12	Serious personal injury - permanent disability	Major Effect	Substantial effect on performance objectives	National Media coverage. Substantial stakeholder impact
High		1 - 10	1 - 3	Injury to personnel - not permanent disability	Localized Effect	All design and operating margins eliminated	Regional Media coverage. Moderate stakeholder impact
Medium		0.1 - 1	0.25 - 1	Medical Treatment - Lost time incident	Minor Effect	Minor decrease in system performance	Local Media attention. Minor stakeholder impact
Low		< 0.1	< 0.25	Minor Impact - First Aid only	Slight Effect	Slight degradation of element performance	Slight Media attention. Little stakeholder impact

5	5	10	15	20	25
4	4	8	12	16	20
3	3	6	9	12	15
2	2	4	6	8	10
1	1	2	3	4	5
	1	2	3	4	5

Lower Churchill Project (LCP) - Risk Assessment Matrix

Risk Level	
Low	
Medium	
High	

Probability				
< 10%	10% - 30%	30% - 50%	50% - 70%	70% - 90%
Very Low	Low	Medium	High	Very High

Sharing our ideas in an open and supportive manner to achieve excellence.

Teamwork

Open Communication

Fostering an environment where information moves freely in a timely manner.

Honesty and Trust

Being sincere in everything we say and do.

Relentless commitment to protecting ourselves, our colleagues, and our community.

Safety

Respect and Dignity

Appreciating the individuality of others by our words and actions.

Leadership

Empowering individuals to help, guide and inspire others.

Holding ourselves responsible for our actions and performance.

Accountability