From: <u>Tim Calver</u>

To: <u>David Steele</u>; <u>David Leather</u>; <u>Michael Kennedy</u>

Cc: <u>Thieu Hue Lam</u>

Subject: Meeting with Paul Harrington

Date: Saturday, January 30, 2016 9:46:22 AM Attachments: Oversight Committee 29-Jan-2016.pdf

Short note to feedback on my 'end of week' meeting with Paul Harrington (Steve Pellerin also attended):

Feedback on this week and look ahead:

- I thanked Paul for the team's time this week on the whole the sessions have been very productive and the team genuinely open on contract details.
- Paul referenced the significant resource pull on his team I offered that we would be fine with reduced Nalcor attendance.
- I explained that the data delays had impacted our preparation for this week's meetings. Paul clearly wasn't happy with the escalation of last week, but this wasn't a major issue.
- We discussed the look ahead and I explained that we anticipated limited meetings next week as we focused on processing the information from this week and preparation for Client meeting on 3rd, but would welcome adhoc calls and meetings as required

In terms of our activities going forward after 3rd Feb I explained:

- We would continue as planned for LTA and LITL, assuming completion of the QRA process as planned
- Approach and timing on MFG was clearly dependent on the Astaldi position and we were discussing this with the Client
- Paul was very supportive of pressing on with LTA and LITL even if MFG moved to a different timeline (he highlighted the importance to the Province of the low power transfer to mitigate the reliability risk of the oil station and to achieve grid system integration in advance of full power from MF

Astaldi:

I asked re status and timing but nothing new was offered

Oversight Committee:

Nalcor were asked to present this week to the Oversight Committee. This seems to have been triggered by concerns over progress by Valard on the HVdc line, and whether this is the next 'Astaldi'. The status update given by Nalcor is attached.

Other:

Paul has asked Julia whether he can attend our meeting on 3^{rd} Feb – rationale being the intent for an open and collaborative approach to the EY review

Tim

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Lower Churchill Update

Oversight Committee January 29, 2016





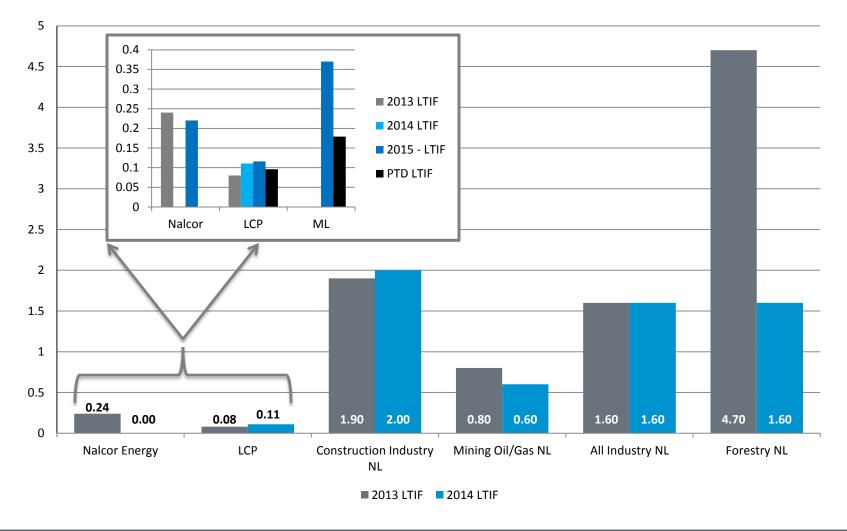


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Take a NOTATION NOTATION



LTIF Comparison – Lower Churchill





Health and Safety Incident Trends for 2016

- Slips, trips and falls recent snow and ice in some locations has increased occurrence frequency.
- Vehicle/Equipment Incidents equipment backing into other equipment and stationary objects. Reiterate circle for safety requirements and use of a spotter.
- Soft Tissue Injuries bending/twisting body motions. Consider stretch and flex sessions during toolbox talks.

CIMFP Exhibit P-03426

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Cost Summary



COST SUMMARY REPORT (Millions CAD)

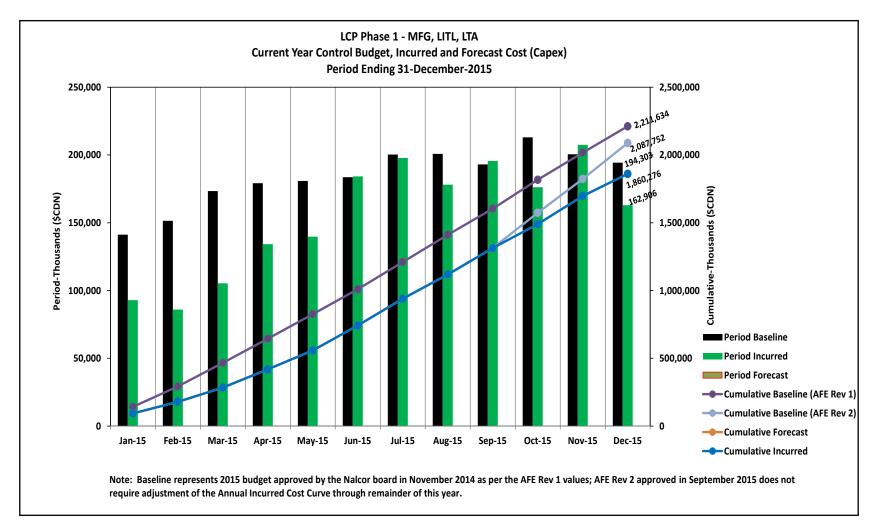
	Baseline DG3	Approved Changes	Current Control Budget (CCB)	Incurred Costs		Final	
Asset					Project- to-Date	Forecast Cost (FFC)	Variance from CCB
Muskrat Falls Generation	\$2,674	\$939	\$3,614	\$60	\$2,038	\$3,619	\$ 5
Labrador Island Transmission Link (LITL)	\$2,523	\$478	\$3,001	\$83	\$1,373	\$3,001	\$ 0
Labrador Transmission Asset (LTA)	\$637	\$223	\$860	\$20	\$593	\$860	\$ 0
Pre-Contingency Capital	\$5,835	\$1,640	\$7,475	\$163	\$4,004	\$7,480	\$ 5
Contingency	\$368	(\$190)	\$178	\$ 0	\$0	\$173	-\$5
Total Capital	\$6,202	\$1,450	\$7,653 ¹	\$163	\$4,004	\$7,653 ¹	(\$0)

¹ Values are within the Authorization for Expenditure (AFE) approved September 2015.

Note: Financing and currency impact costs are reported corporately and excluded from all tables and curves.



2015 ANNUAL COST CURVE





CONSTRUCTION PROGRESS SUMMARY

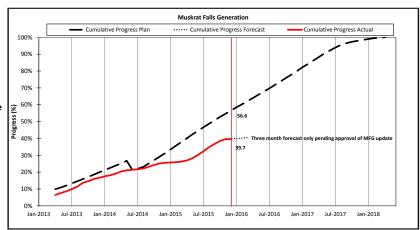
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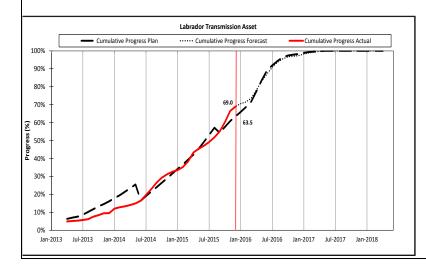
& CURVES

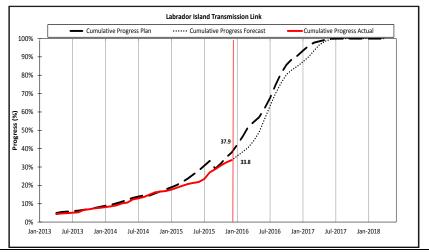
	Plan	Earned		
MFG	56.6%	39.7%		
LTA	63.5%	69.0%		
LITL	37.9%	33.8%		
Overall	49.5%	40.5%		

Note 1: Cumulative planned progress for LTA/LITL is representative of September 2015 rebaseline

Note 2: Cumulative planned progress for MFG is representative of June 2014 baseline until update available









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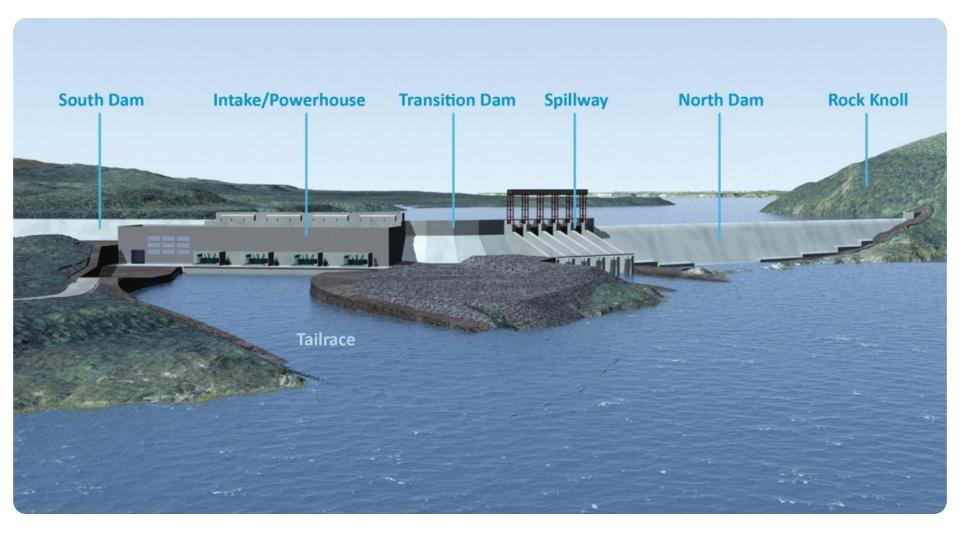
2015 Progress and 2016 Look Ahead - Muskrat Falls Generation Site



Muskrat Falls Generating Facility CIMFP Exhibit P-03426

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CIMFP Exhibit P-03426

Finished Product

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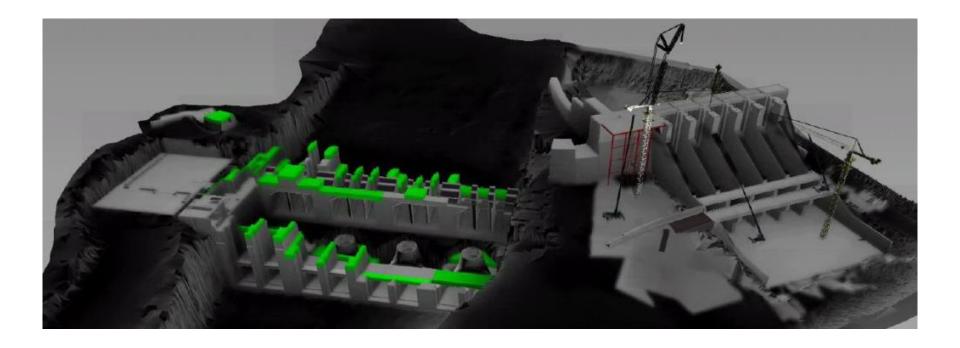


MF site – December 2016



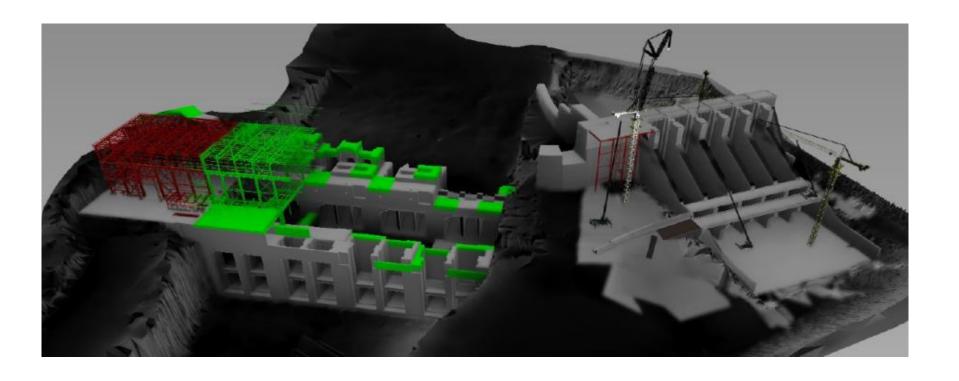


Power House – Summer 2016





Powerhouse – December 2016





Muskrat Falls Activities

Astaldi:

- Powerhouse
 - Concrete 15% complete
 - Current focus Removal of powerhouse cover system
 - Resumption of draft tube formwork
 - Structural steel fabrication to commence Q1 2016
- Spillway completed spillway piers, area handed over to Hydro-Mechanical Contractor (Andritz)
- Completed concrete work on separation wall; North Transition Dam; Centre Transition Dam as per plan



Muskrat Falls Activities

Andritz/Gates Package:

- Continuing with gate guide installation on the spillway downstream
- Components continuing to arrive on site from China/Quebec

Gilbert/North Spur:

 Completed first year of earth stabilization program, including first cut off wall; progressed embankment construction

Barnard Pennecon:

- Completed Intake Coffer Dam
- Commenced starter groins as part of river closure operations
- Commenced temporary upstream bridge construction



Muskrat Falls Activities

- Andritz/Turbines and Generators:
 - Parts continuing to arrive in Labrador, incl. major components
 - Factory Acceptance Testing ongoing for runners and tower assemblies
 - T&G work in China nearing completion; final shipment to MF site planned for this Spring



Intake Coffer Dam





Powerhouse Intake Powerhouse Intake





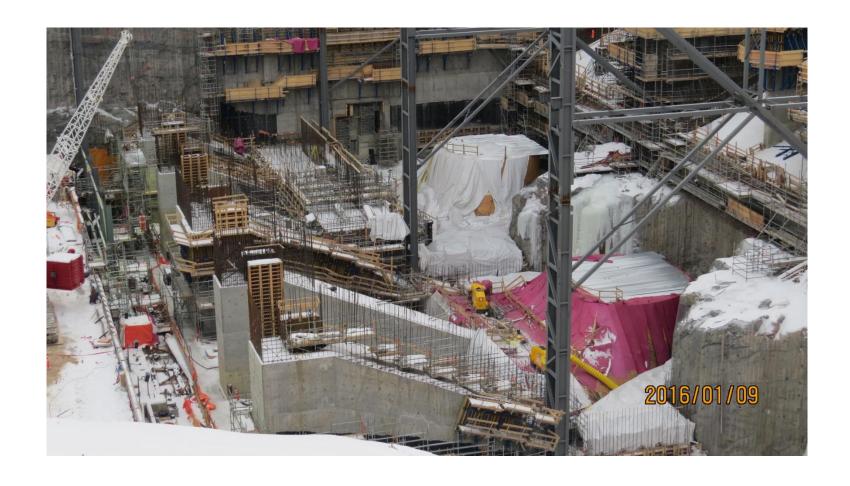
Powerhouse Intake Powerhouse Intake





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Powerhouse





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Powerhouse





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Spillway





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Spillway

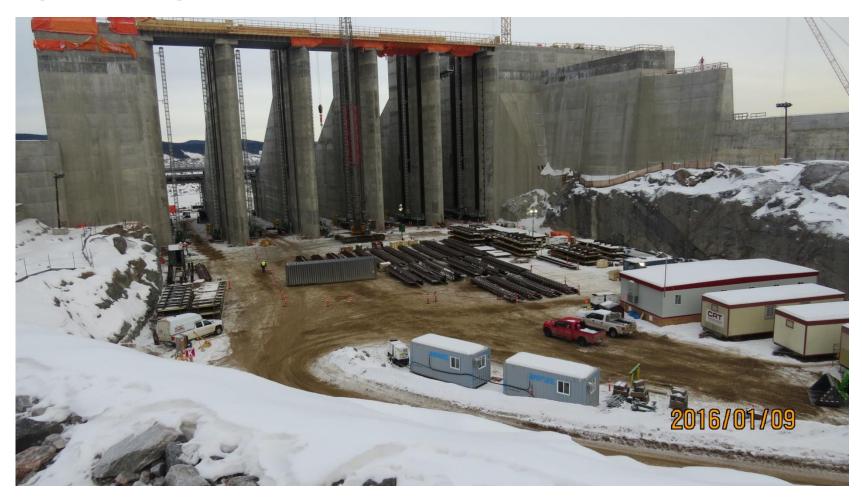




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Spillway





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Separation Wall





Centre Transition Dam





North Transition Dam





North Dam - Starter Groin





North Dam - Starter Groin





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North Spur





TG – Runner FATs





TG - Runner FATs





TG – Guide Vein Machining





Spillway Gate Guides





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2016 Look Ahead

Key targets

- Substantial completion of spillway gates, guides and hoists to meet river diversion mid year
- Close upstream cofferdam and river diversion mid
 2016
- Completion of North Spur stabilization work to allow impoundment to 25m by November
- Impound reservoir to 25m
- Powerhouse and intake concrete works on all units



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Transmission Line Construction



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Purpose

 Provide a high-level update on the construction status of the Transmission Line

Review on-going issues being managed



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Snapshot

315kV HVac TL (MF to CF)

- Engineering Complete
- Material 100% delivered
- ROW and Access –
 Complete
- Contractor: Valard (Quanta)
- Line Construction Ahead of Plan

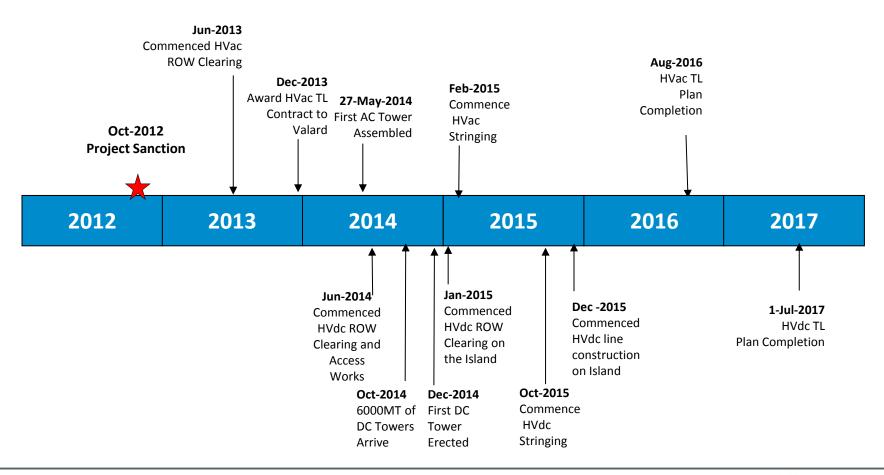
350kV HVdc TL (MF to SP)

- Engineering Complete
- Material 90% delivered
- ROW and Access ~75%
 Complete
- Contractor: Valard (Quanta)
- Line Construction Behind Plan, but recoverable



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Schedule Milestones





Quanta 15 16:01











2013

- The Top Specialty Contractor serving Utility Industry
 - NYSE: PWR
 - S&P 500 company
 - #397 on the Fortune 500; Number 1 among E&C companies for profits as a percentage of revenues; 15th fastest growing company for one-year revenue growth.
 - Largest utility specialty contractor in North America
 - Ranked #1 utility specialty contractor by Engineering News-Record
 - Numerous safety and innovation awards
 - Ranked #1 publically traded company based in Houston

Quanta is

























A QUANTA SERVICES COMPANY



A WANTA SERVICES COMPANY







A Q HANTA SERVICES COMPANY

BRADFORD BROTHERS, INC.







INTERMOUNTAIN ELECTRIC

A UNITA SERVICES COMPANY

























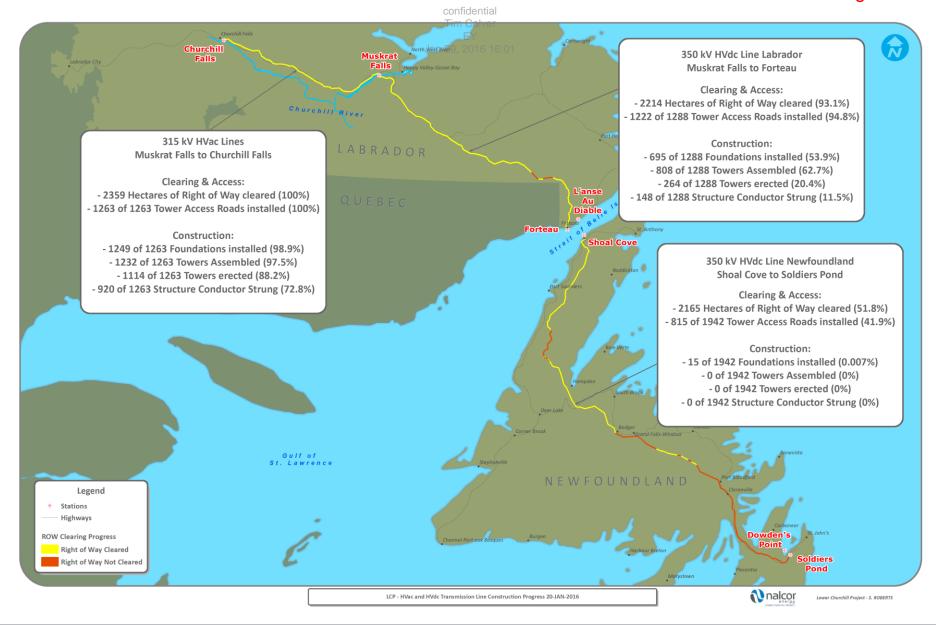






- Built on the collective strengths of industry-leading contractors
 - More than 45 local and regional operating units
 - More than half are active in the Electric Power Sector









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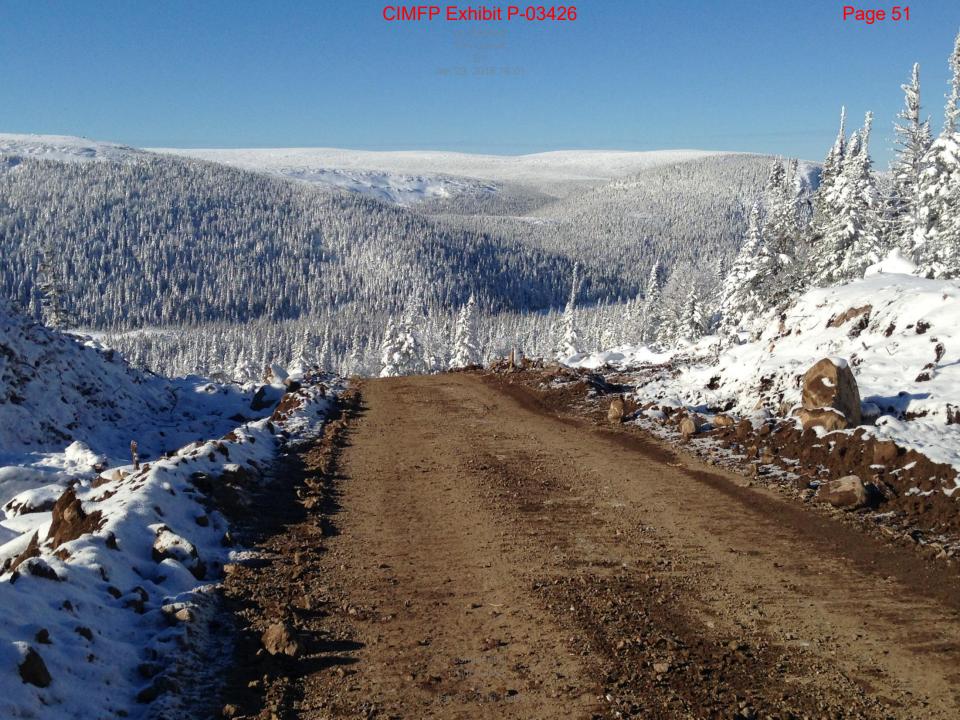


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Deeper Dive – HVac Contract (стоз19-001)

Progress

- Plan=79%; Actual = 84%
- Expect completion of Stringing activity by in April 2016, clean-up by end of summer

Cost Performance

- Contract Value of \$280 M
- Incurred to date \$220 M

Claims or Disputes

- No open disputes
- No claims to date

Key Issues

- Concrete Records: Gap in Valard concrete records for ~300 foundations.
 Concrete quality suspect and under investigation. Some foundations being replaced or repaired at Valard's cost.
 Extent of issue under study.
- Confirmation of timing for Powerhouse Interconnect

Key Risks

None



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Deeper Dive – HVdc Contract (CT0327-001)

Progress

- Labrador: Plan = 42.5%; Actual 40%
- Island: Plan = 11.4%; Actual = 7.6%
- Targeting Completion of Labrador by end of 2016
- Plan end date for entire line is 1-Jul-2017;
 however under significant threat. Recovery plan pending this week. Contractor has significant capability to bring to the table, incl. from AC line

Cost Performance

- · Contract Value of \$880 M
- Incurred to date ~\$190 M

(Note: These numbers exclude access works by Company's Other Contractors)

Claims or Disputes

 Potential claims for (1) geotechnical conditions and (2) and potential access conditions. LCMC consider its position <u>very</u> strong.

Key Issues

- Valard must demonstrate sound recovery plan; missing 1-Jul-2017 would trigger significant LDs
- Project has cost grossly exceeded plan for ROW and access – many contributing factors
- Geotechnical conditions south of Muskrat Falls has hampered foundation progress
- Learning Curve for crews on HVdc
- Quality Rework Has hamper forward momentum

Key Risks

- Valard's ability to recover and retain 1-Jul-2017 date
- Early Spring Break-up Two significant winter zones
 could result in cost exposure for all-season access
- Construction duration for Long Range Mountains is weather dependent – critical path
- Valard's ability to successful position a geotechnical claim



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2015 Progress and 2016 Look Ahead - SOBI



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Cables in Japan and Labrador Sites













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Overview of SOBI Progress

Status as of November 2014

- Horizontal Directional Drilling -100%
- Cable type testing and manufacturing 53%
- Civil works 85%
- Land cable installation 0%
- Rock supply and Quay 47%

Status as of November 2015

- Horizontal Directional Drilling -100%
- Cable type testing and manufacturing 100%
- Civil works 95%
- Land cable installation 83%
- Rock supply and Quay 100%



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2016 Look Ahead

- Transport cable to SOBI
- Install three sub sea cables
- Terminate and test installed cables
- Sub sea rock protection complete
- SOBI scope substantially complete



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2015 Progress and 2016 Look Ahead - Switchyards and HVdc Facilities



Overview of Switchyards and HVdc Facilities

Status as of November 2014

- EPC contracts for switchyards, converters and synchronous condensers in progress
- Power transformer manufacturing started
- Site preparation complete at Muskrat Falls, Churchill Falls and Soldiers Pond, Forteau and Shoal Cove sites, civil works not started
- Grounding sites contract for island and Labrador not yet awarded

Status as of November 2015

- EPC contracts progressing with focus on civil design and major equipment manufacturing underway
- Power transformers received at Muskrat Falls(2) Churchill Falls (7) and Soldiers Pond (4)
- Civil works and building construction well advanced at Muskrat Falls, Churchill Falls and Soldiers Pond
- Work for grounding sites substantially complete for island and Labrador



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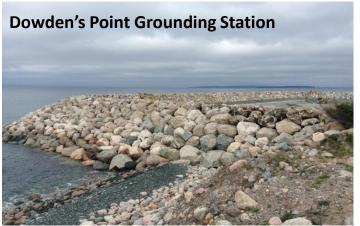
Switchyards and HVdc facilities





2014
Site preparation
work was
nearing
completion at all
sites





November 2015
Civil works well
advanced at all
sites and
grounding
stations
substantially
complete

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2016 Look Ahead

- Civil works and buildings nearing completion at all sites
- Synchronous condensers delivered
- Gas insulated switchgear, converter transformers and station equipment delivered to sites
- Equipment installation underway at all sites
- Factory Acceptance Testing of protection and control systems well advanced
- Substantial completion of Soldiers Pond switchyard



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Schedule Summary



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Summary of Progress-Period End Dec-15

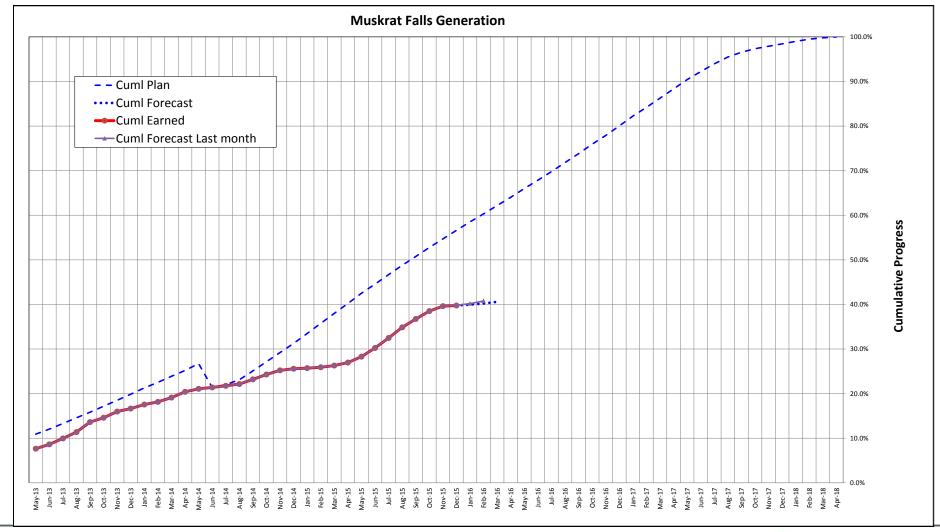
		LCP -	Overall	2015	Dec				
This Reporting Period								Next Month	
	Weight		Period %				Cumulative % *2		
	Factor %	Plan *1	Forecast	Earned	Var-Forecast	Plan	Earned	Variance	Period %
	Α	В	B1	С	C-B1	E	F	F-E	G
Labrador Transmission Asset (LTA)	11.1%	2.6%	4.4%	2.5%	-1.9%	63.5%	69.0%	5.5%	1.6%
Labrador Island Transmission Link (LITL)	42.2%	2.7%	3.0%	1.3%	-1.7%	37.9%	33.8%	-4.1%	2.2%
Muskrat Falls Generation (MFGen)	46.7%	1.9%	0.2%	0.1%	-0.1%	56.6%	39.7%	-16.9%	0.2%
LCP-Overall	100.0%	2.3%	1.8%	0.9%	-1.0%	49.5%	40.5%	-9.0%	1.2%
			La	st Report	ting Period				
	Weight		Period %			Cumulative %			
	Factor %	Plan		Earned		Plan	Earned		
	Α	В		С]	E	F		
Labrador Transmission Asset (LTA)	11.1%	3.2%		6.2%		60.9%	66.5%		
Labrador Island Transmission Link (LITL)	42.2%	3.4%		1.7%		35.2%	32.5%		
Muskrat Falls Generation (MFGen)	46.7%	1.9%		1.1%	_	54.7%	39.6%		
LCP-Overall	100.0%	2.7%		1.9%		47.2%	39.6%		

^{*1} Plan represents Sep 2015 rebaseline for LTA/LITL and partial MFG. Remaining MFG uses June 2014 baseline



^{*2} MFG cumulative planned progress uses June 2014 baseline until MFG update available

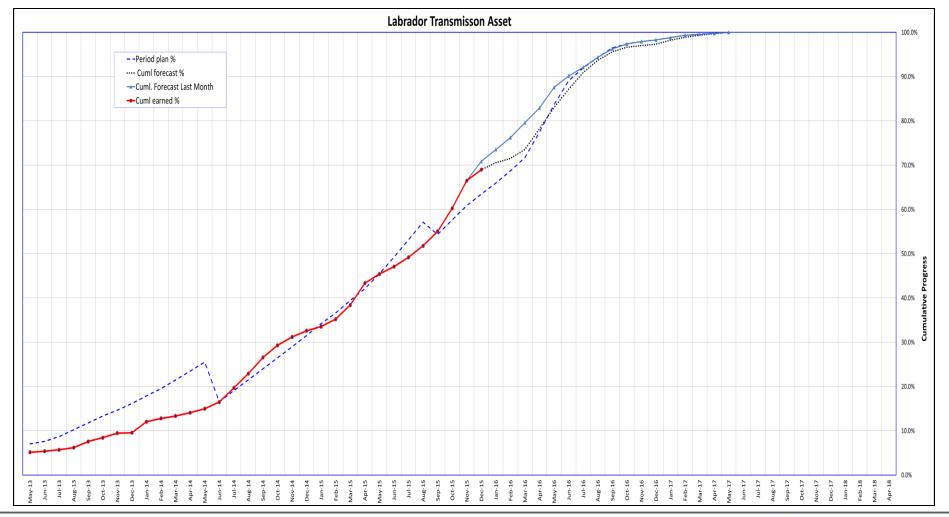
Muskrat Falls Generation-Progress Curve Period End Dec-15





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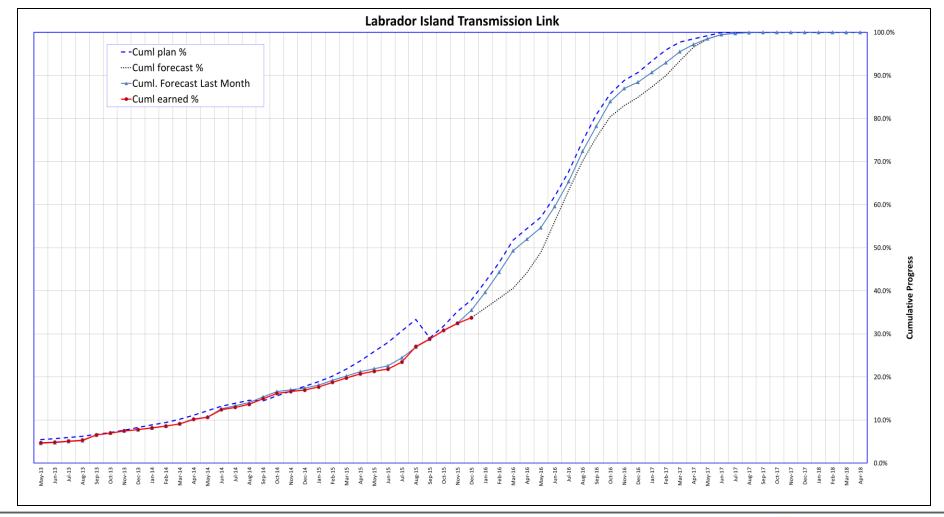
Labrador Transmission Asset-Progress Curve Period End Dec-15





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Labrador Island Transmission Link-Progress Curve Period End Dec-15





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Risk Management



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Remaining Key Project Risks

- Contractor Failure/Abandonment
- Contractor Performance
 - Astaldi
 - Andritz
 - Alstom
 - Gilbert
 - Bernard-Pennecon
 - Nexans
 - Balance of Plant (not yet awarded)
- Completion, Commissioning and Startup
- T&M Contracts/Geotechnical
- Labour
- Aboriginal



Independent Project Analysis Inc. (IPA Global)

Mid-execution Assessment – December 2015

- "LCP has characteristics that are compatible to those of successful mega-projects;
- To succeed, LCP should continue strengthening its organization and planning;
- Organization is well staffed and teams are well developed;
- LCP Project has achieved significant progress in execution and is organizing to complete construction and to start operation;
-LCP strategies are consistent with the focus on achieving successful LCP execution to Completion."



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Independent Project Analysis Inc. (IPA Global)

Mid-execution Assessment – December 2015

Key Drivers of Megaproject Performance LCP Team Established Drivers of Team Effectiveness

Key Project Characteristics of Successful Megaprojects	LCP Status			
Clear Defined Objectives	Yes			
Critical Owner Team Members*	Yes			
Team Development Index	Good			
Integrated Team	Yes			
Project Director/Manager Continuity	Yes			

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INDEPENDENT PROJECT ANALYSIS



^{*} Critical functions include Project Controls, Scheduling, Estimating, Operations, and Construction Management

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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

