



**Muskrat Falls Project  
Oversight Committee  
Report for period ended  
September 2014**

**December 15, 2014**

# Committee Terms of Reference

Mandate to provide reliable and transparent oversight on the following key issues:

- The Project cost and schedule are well-managed
- The Project is meeting the cost and schedule objectives
- The cost and schedule risks are being reasonably anticipated and managed

# Committee's First Report:

## July 31, 2014



- Oversight Framework
  - Committee Terms of Reference
  - Inventory of Information Needs
  - Reporting Protocol for Nalcor
  - Existing Sources of Oversight
  - Commissioning Other Oversight Procedures
- Project Budget and Milestone Schedule
  - Basis upon which Committee would monitor
- Next Report: Qtr ended September 30, 2014

# Muskrat Falls Project



- The Muskrat Falls Project is comprised of the following three sub-projects:
  - Muskrat Falls Generating Facility
  - Labrador-Island Transmission Link
  - Labrador Transmission Assets

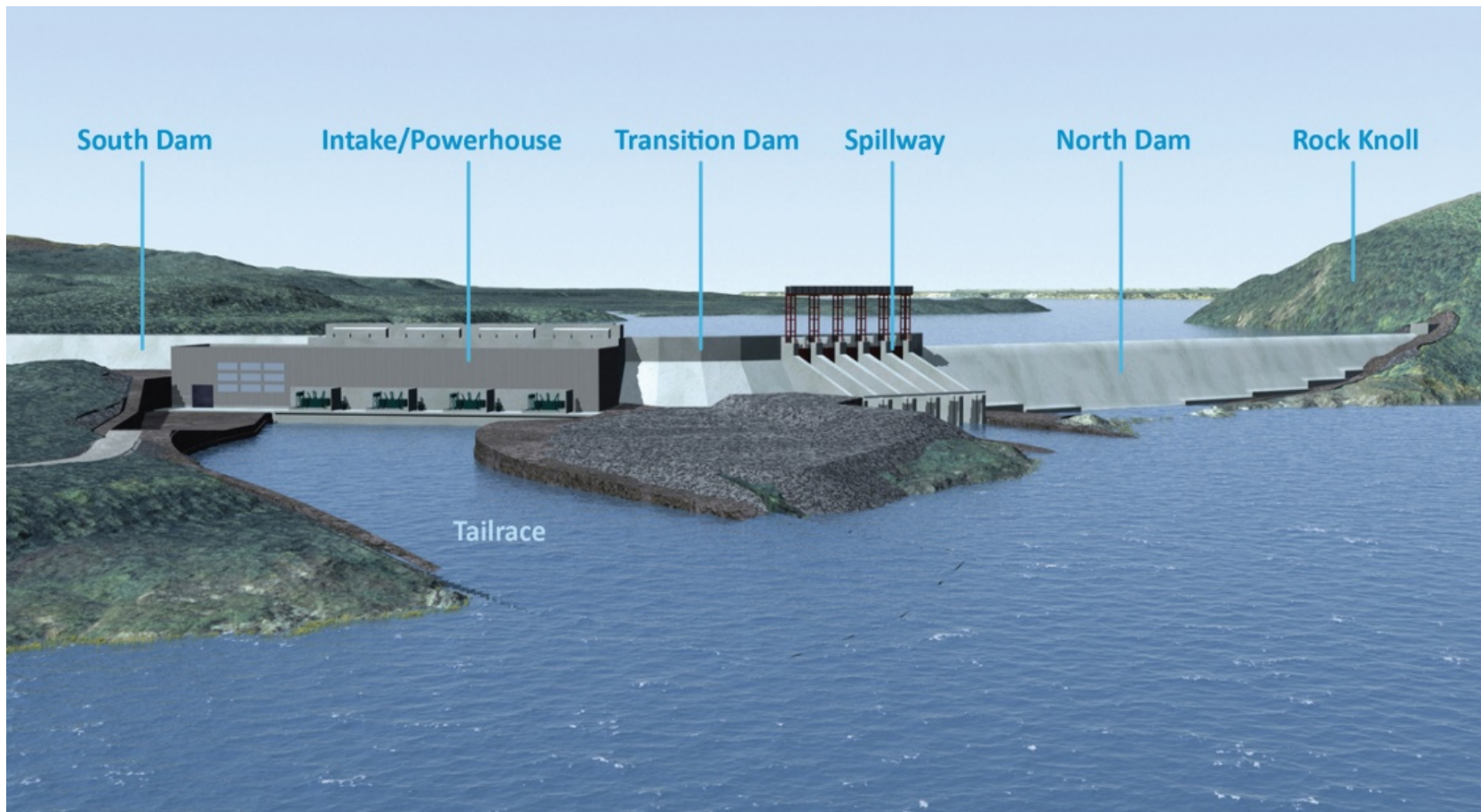
# Muskrat Falls Generating Facility

CIMFP Exhibit P-01991

Page 5



824 megawatt (MW) hydroelectric generating facility



# Labrador-Island Transmission Link

1,110 km High Voltage direct current transmission line



# Labrador Transmission Assets



250 km High Voltage alternating current transmission line



# Project Performance



- Performance reported in two ways:

	Long-term Forecast	Current Reporting Period
Cost	Project Budget vs. Project Forecast Cost	Incurred Costs vs. Planned Costs
Schedule	Milestone Schedule	Actual Construction Progress vs. Planned Construction Progress



# Project Performance – Long Term Cost



September 2014	Project Budget	Project-to-date Costs	Project Forecast Cost (PFC)	Variance PFC from Budget
Expenditure Category	A	B	C	D=A-C
NE-LCP Owners Team, Admin and EPCM Services	\$708,598	\$393,437	\$712,680	(\$4,082)
Feasibility Engineering	\$39,421	\$39,421	\$39,421	\$0
Environmental & Regulatory Compliance	\$47,328	\$24,302	\$48,034	(\$706)
Aboriginal Affairs	\$15,746	\$5,751	\$15,747	(\$1)
Procurement & Construction	\$5,909,183	\$1,258,815	\$5,894,141	\$15,042
Commercial & Legal	\$45,620	\$27,953	\$44,871	\$749
Contingency	\$224,518	\$0	\$235,520	(\$11,002)
TOTAL	\$6,990,414	\$1,749,679	\$6,990,414	\$0

# Committee Observations – September 2014



- Capital budget of \$6.99 B remains unchanged
- Contingency budget of \$224.5 M not drawn upon
  - established on the low range
  - engineering 98% complete, 90% contract values awarded
  - aggressive approach
- No significant variances between Project Budget and Project Forecast Costs

# Project Performance – Long-term Milestone Schedule



- All milestones remain unchanged with the exception of the “North Spur Works Ready for Diversion”
  - revised from November 2015 to September 2016 (10 months)
  - deliberate change to lower the project cost and reduce risk
  - no impact on the critical path for completion of the river diversion in November 2016
- Project Critical Path to First Power for December 2017 remains unchanged

# Current Project Performance - Overall



## Project Costs

Costs Incurred as of September 2014



## Construction Schedule

Schedule of Progress as of September 2014



# Project Performance -Current

## Incurred Cost vs. Planned



Muskrat Falls Project: Sub-Project	Proportion of Total Budget	Budget	Costs Incurred as of September 2014	Planned Costs as of September 2014	Variance
Muskrat Falls Generating Facility	48.2%	\$3,371,988	\$1,070,123	\$1,064,875	\$5,248
Labrador-Island Transmission Link	39.9%	\$2,786,481	\$430,603	\$409,911	\$20,692
Labrador Transmission Assets	11.9%	\$831,945	\$248,953	\$264,226	-\$15,273
<b>Total</b>	100.0%	\$6,990,414	\$1,749,679	\$1,739,012	\$10,667

# Project Performance -Current

## Actual Schedule Progress vs. Planned



<b>Muskrat Falls Project: Sub-Project</b>	<b>Weight Factor</b>	<b>Actual Construction Progress – September 2014</b>	<b>Planned Construction Progress – September 2014</b>	<b>Variance</b>
<b>Muskrat Falls Generating Facility</b>	46.4%	23.3%	25.1%	-1.8%
<b>Labrador-Island Transmission Link</b>	42.5%	16.2%	15.4%	0.8%
<b>Labrador Transmission Assets</b>	11.1%	26.5%	24.0%	2.5%
<b>Muskrat Falls Project Total</b>	100.0%	20.7%	20.9%	-0.2%

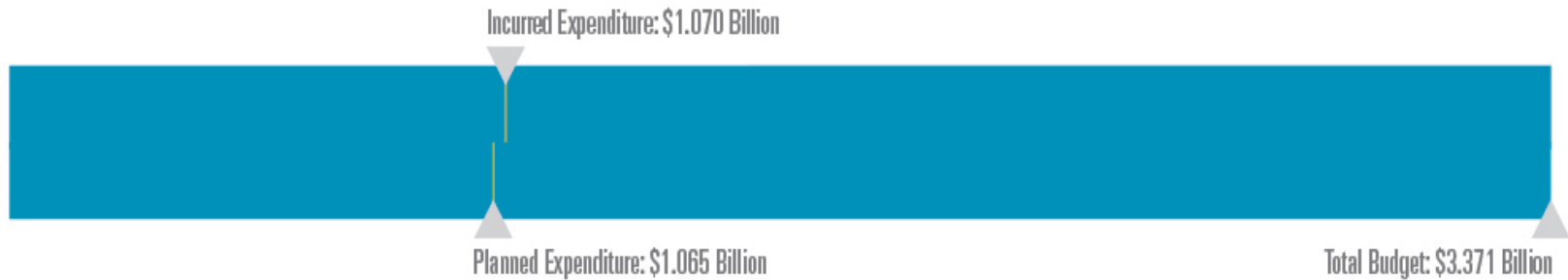
# Current Project Performance

## -Muskrat Falls Generating Facility



Expenditures slightly exceeded planned and construction progress was behind targeted schedule

Costs Incurred as of September 2014



Schedule of Progress as of September 2014



# Current Project Performance

## -Muskrat Falls Generating Facility



September 2014	Weight	Cumulative %		
	Factor %	Plan	Actual	Variance
Sub-Project	A	E	F	F-E
MFG Road/Camp/Constr. Power	7.9%	98.5%	98.2%	-0.3%
MFG Reservoir Preparation	6.5%	47.4%	53.3%	5.9%
MFG Spillway & Gates	11.4%	20.0%	17.8%	-2.2%
MFG North Spur Stabilization	4.2%	3.7%	0.0%	-3.7%
MFG North Dam	7.5%	0.0%	0.0%	0.0%
MFG Powerhouse & intake	54.9%	12.1%	9.2%	-2.9%
MFG South Dam	1.1%	0.0%	0.5%	0.5%
MFG Misc:Eng/ 315kV/Site Rest./logistic	6.5%	79.6%	75.7%	-3.9%
MFGenerating Facility -Overall	100.0%	25.1%	23.3%	-1.8%



# Muskrat Falls Generating Facility



- Progress behind on Powerhouse & Intake and Spillway & Gates, but generally costs on track
- Integrated Cover System (ICS) - not complete
  - Units 1 and 2 will be completed in winter 2015
  - Units 3 and 4 currently being reviewed by Astaldi

# Muskrat Falls Generating Facility



- Offsite manufacturing work by Andritz not incl. in Construction progress measure
- Manufacturing Progress
  - Turbines and Generators
    - Progress: Actual 22.7% vs. Planned 30.7%
  - Powerhouse Hydro-Mech. Equipment
    - Progress: Actual 5.9% vs. Planned 4.2%

# Current Project Performance

## – Labrador Island Transmission Link



Expenditures exceeded planned and construction progress is on targeted schedule

### Costs Incurred as of September 2014



### Schedule of Progress as of September 2014



# Current Project Performance

## -Labrador Island Transmission Link



September 2014	Weight	Cumulative %		
	Factor %	Plan	Actual	Variance
Sub-Project	A	E	F	F-E
LITL Muskrat Falls Converter	5.5%	4.4%	4.4%	0.0%
LITL Soldiers Pond Converter	5.6%	7.3%	8.9%	1.6%
LITL HVdc Transmission Line Seg 1/2	19.3%	1.3%	3.0%	1.7%
LITL HVdc Transmission Line Seg 3/4/5	34.7%	0.0%	0.0%	0.0%
LITL Electrode Sites	1.7%	0.0%	0.0%	0.0%
LITL Transition Compounds	1.8%	5.7%	34.6%	28.9%
LITL SOBI Cable Crossing	18.9%	52.1%	52.6%	0.5%
LITL Soldiers Pond Switchyard	3.2%	10.2%	14.6%	4.4%
LITL Soldiers Pond Synchronous Condensers	4.9%	7.6%	9.6%	2.0%
LITL Misc	4.4%	78.6%	76.4%	-2.2%
LITL-Overall	100.0%	15.4%	16.2%	0.8%

# Current Project Performance

## – Labrador Island Transmission Link



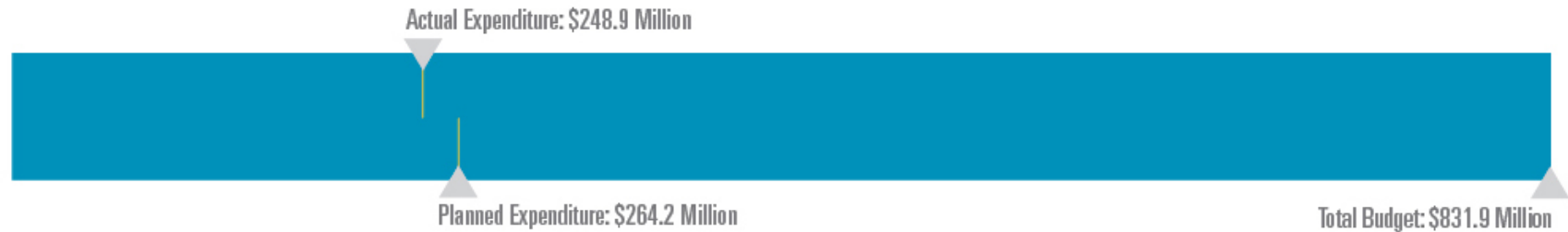
- Offsite manufacturing work by Nexans not incl. in Construction progress measure
- Manufacturing Progress
  - Submarine Cable and design
    - Progress: Actual 25.4% vs. Planned 26.8%

# Current Project Performance – Labrador Transmission Assets



Expenditures lower than planned and construction progress is ahead of targeted schedule

## Costs Incurred as of September 2014



## Schedule of Progress as of September 2014



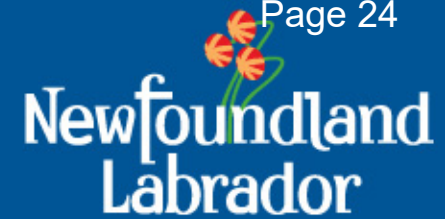
# Current Project Performance

## -Labrador Transmission Assets



September 2014	Weight	Cumulative %		
	Factor %	Plan	Actual	Variance
Sub-Project	A	E	F	F-E
LTA CF Accommodations	1.1%	100.0%	100.0%	0.0%
LTA HVac Transmission Line Seg1/2 - MF to CF	56.0%	23.6%	23.2%	-0.4%
LTA Churchill Falls Switchyard	20.9%	8.6%	22.0%	13.4%
LTA Muskrat Falls Switchyard	14.0%	5.8%	5.8%	0.0%
LTA Misc	8.0%	88.2%	88.2%	0.0%
LTA-Overall	100.0%	24.0%	26.5%	2.5%

# Project Risks



Committee reviews Nalcor's Risk Register included in Monthly Progress Report

Committee focused on four risk for this reporting period:

- 1) Weather impact on Project Schedule
- 2) Contractor performance impact on Project schedule
- 3) Major contracts not yet awarded
- 4) North Spur stability



# Other Oversight Activities

## 1) The Independent Engineer

- Released report for site visit July 2014
- Visited site again November 24 to 27

## 2) Nalcor's Internal Audit Division

- Reviewing Project Controls and procedures for risk management – Report due early 2015

## 3) Nalcor's External Auditor

- Issued 2013 Combined Project statements in October 2014

# Cabinet Decision



- Approve release of the Oversight Committee's Public Report for the period ending September 2014

2014/12/15

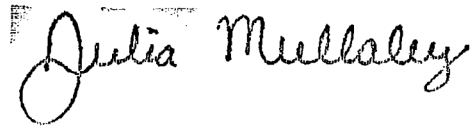
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NR/DM  
Premier  
Deputy Clerk  
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An Update respecting Muskrat Falls Project Oversight Committee Report for Period ended September 2014 was received from the Clerk of the Executive Council.

Approval was given to release the Muskrat Falls Project Oversight Committee's Public Report for the period ending September 2014, with the timing of the release to be determined by the Premier, the Minister of Natural Resources and the Clerk of the Executive Council.



Clerk of the Executive Council