



Muskrat Falls Project Oversight Committee

Quarterly Project Update

Period Ending June 30, 2019

October 15, 2019

Table of Contents

1. Q2 2019 Cumulative Project Progress
2. Q2 2019 Performance Summary
3. Oversight Committee Reporting
4. Nalcor Reporting

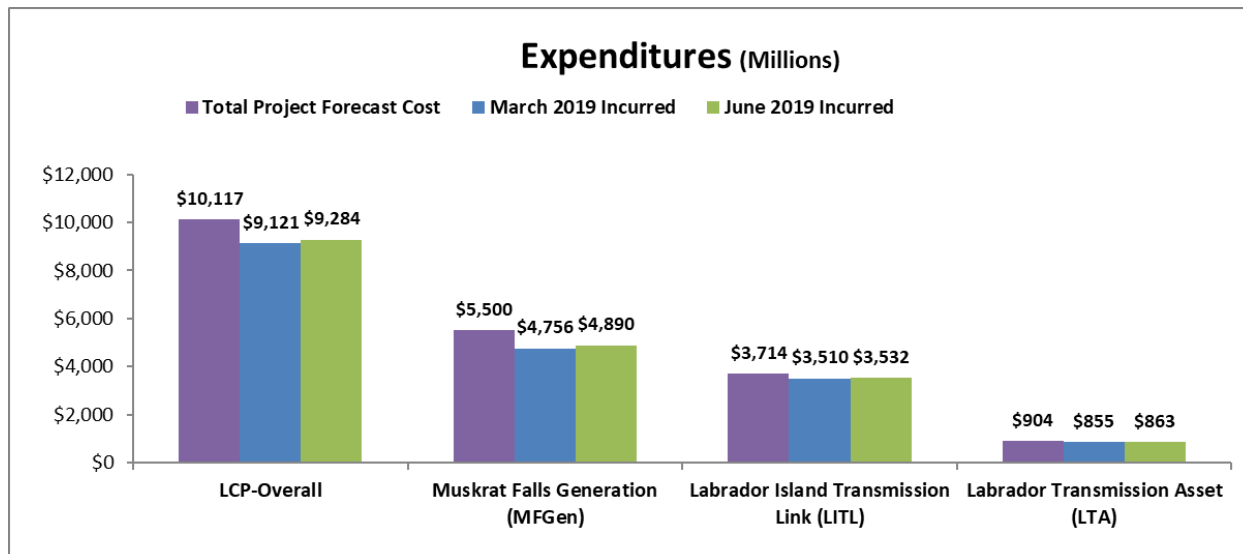
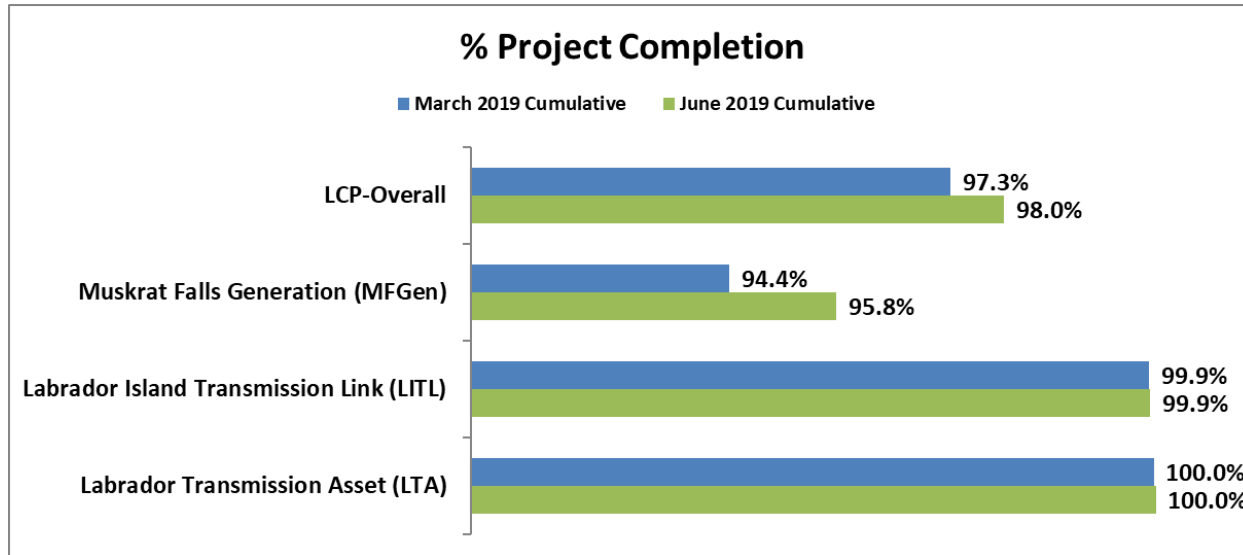
Annex A - Project Capital Budget and Project Milestone Schedule

Annex B - Project Expenditures

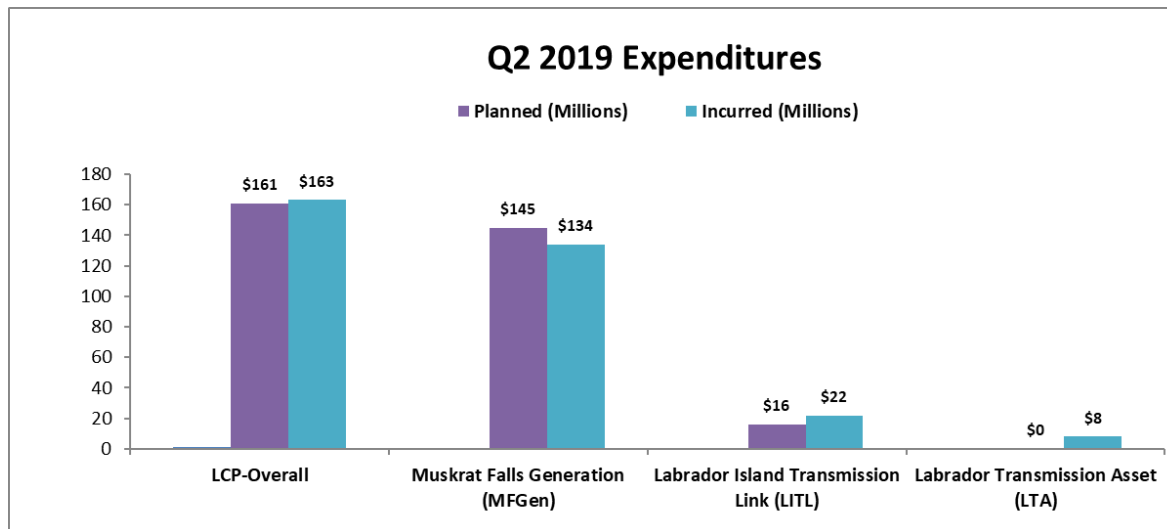
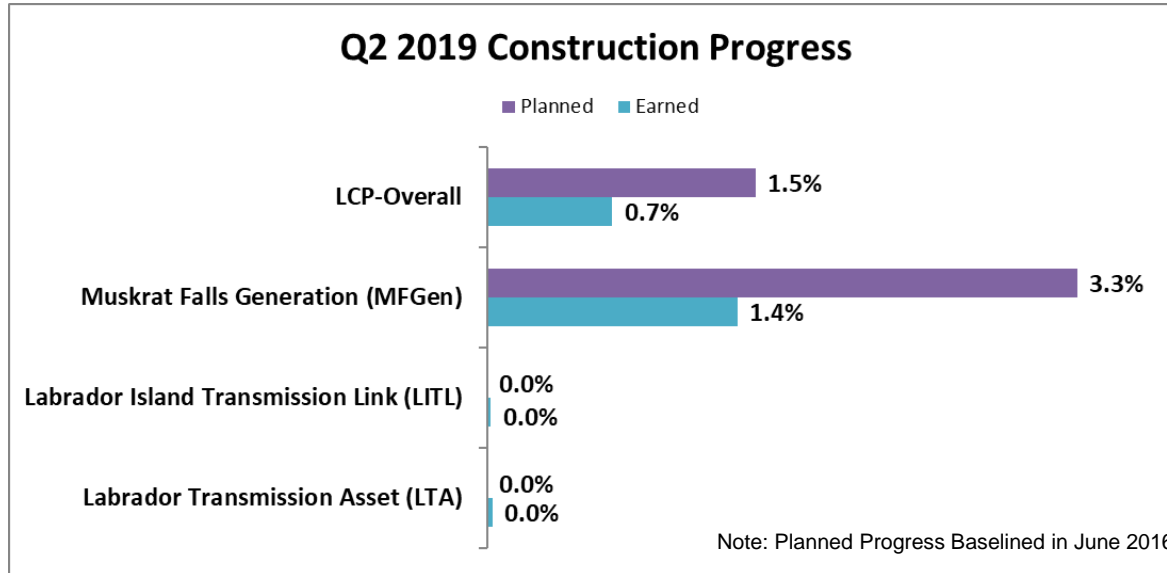
Annex C - Earned Progress

Annex D - Project Milestone Schedule Forecast

1. Q2 2019 Cumulative Project Progress



2. Q2 2019 Performance Summary



3.0 Oversight Committee Reporting

- 3.1 Overview
- 3.2 Committee Activities
- 3.3 Independent Engineer Activities
- 3.4 Risks and Issues Being Monitored by the Committee
- 3.5 Subsequent Events to Q2

3.1 Overview

- The Oversight Committee (Committee) receives details on project costs incurred, schedule progress, changes in costs and milestone schedule, the status of construction, and manufacturing and installation contracts.
- The Committee identifies risks and issues and follows up with Nalcor to obtain more detail and explanation.
- This report covers the April to June 2019 period (Q2) and includes information on other notable project activity up to the date of drafting of this report.
- Section 3 of this report contains information developed by the Committee. Section 4 contains project cost and schedule information provided by Nalcor. The Annexes contain a more detailed accounting of the information provided in this report.
- The next Committee Report will cover the period July 2019 – September 2019.

3.2 Committee Activities

- The Committee met on three occasions during the period to receive project updates and conduct other Committee business. Committee meeting minutes and reports are available on the Committee website @ [Click here](#) and [Click here](#).
- The Committee Chair participated as an observer in three monthly calls on Nalcor project reporting to the IE and NRCan. The Department of Natural Resources Deputy Minister and Assistant Deputy Minister also participated in one of these calls.
- The Committee Chair and Department of Natural Resources Director participated in two calls with the IE and NRCan to review Nalcor monthly project reporting. The Department of Natural Resources Deputy Minister also participated in one of these calls.
- As reported in the Q1 Committee report, on June 19, 2019 the Minister of Natural Resources announced the appointments of new independent members Lynn Zurel CPA, CA, and Judy Morrow, QC, to fill vacancies on the Committee.
- On June 27, 2019 the Committee's legal representative and Natural Resources Director met with Nalcor and its external counsel to discuss the Astaldi statement of claim and Nalcor counter claim.

3.3 Independent Engineer Activities

- In June 2019, the IE participated in a GE factory visit in Stafford, UK along with Nalcor team members. This is the location of GE Grid's Automation Manufacturing facility which is in the process of developing and testing Protection and Control (P&C) software for the Muskrat Falls Project HVdc system (the Labrador Island Transmission Link).
- The IE report from this visit can be found on the Committee's website @ [Click here](#).
- Within this report, the IE comments that the existing P&C software schedule at the time of the visit is highly risked and likely that schedule dates will not be met based on progress observed, and that implementing the phased delivery approach for monopole and bipole P&C software may have further impacted the timing of final bipole software delivery for the project.

3.4 Risk and Issues being Monitored by the Committee

- In its project reporting, Nalcor identifies risks which may impact project cost and schedule. The Committee reviews these and other project information to assess project risks. These risks can be found on pages 10-13 of this report.
- Over the reporting period the Committee noted:
 - Reservoir rim stability remained consistent over the Quarter;
 - Pennecon work (replacement contractor for Astaldi) in the powerhouse and preparations for spillway work are progressing well;
 - Litigation and Arbitration proceedings are ongoing with Astaldi;
 - Astaldi filed its formal statement of claim for damages on May 31, 2019 and Nalcor is required to file its response to Astaldi's claim and any counter-claim by August 26, 2019;
 - Any delay to the commencement of impoundment beyond the current planned mid-July 2019 start date could impact the powerhouse commissioning schedule;
 - Protection and Controls (P&C) software completion for the HVdc system and schedule remains a key project risk. P&C software completion has placed the LITL on the critical path for the overall project schedule and there have been schedule milestone adjustments;
 - Remediation work with the Soldiers Pond synchronous condensers associated with lube oil contamination, hydrogen piping system and rotor lift has been resolved; and
 - Nalcor/NLH preparedness for interconnection and operations following monopole transfer of power and final completion of bipole remains a key focus area.

3.4 Risk and Issues being Monitored by the Committee

- The project is now largely in the installation, integration and static and dynamic commissioning phases which inherently carry associated risks.
- Risks that are being tracked by the Committee include:
 - A) Safety Performance
 - Risk associated with simultaneous operations across multiple work sites, impact on project delivery particularly in the powerhouse, energized yards and other assets. This risk will continue through construction into operations.
 - B) Contractor Management and Productivity
 - Nalcor ability to manage contractors and contractor ability to meet schedule;
 - Contractor management and performance in the powerhouse;
 - Potential commercial negotiations to settle claims; and
 - Potential for new claims as construction nears completion.

3.4 Risk and Issues being Monitored by the Committee

C) Phased Commissioning

- Completion of P&C system to enhance functionality and reliability; associated warranty considerations with early asset handover during Pole 1 commissioning and completion;
- Final completion and testing of HVdc system under low and full power, in-service system reliability, and timing of contractor release and effective warranty period; and
- P&C software delivery and final commissioning completion to maintain project critical path and power delivery.

D) Astaldi

- Completion of remaining powerhouse and spillway work by Pennecon;
- Impact on other contractors;
- Astaldi arbitration/litigation outcomes; and
- Impact on project costs and schedule.

3.4 Risk and Issues being Monitored by the Committee

E) Synchronous Condensers

- Remediation of lube oil contamination, rotor lift and hydrogen system contamination resolved. Commissioning continuing.

F) Insurance Claims and Coverage

- Claims ongoing: Synchronous condensers – As of June 2019, remedial work complete on unit 1 and 3 with dynamic commissioning ongoing; unit 2 assembly ongoing. Nalcor working with GE to optimize recovery through insurance coverage; and
- Potential coverage: Preservation/re-preservation of Turbine and Generator parts - investigations ongoing.

G) Impoundment Delay

- Delay to current planned mid-July 2019 start date and impact on powerhouse commissioning schedule.

H) Reservoir Rim Stability

- Impact of increasing water levels to achieve full supply level during impoundment on reservoir shoreline/slope stability.

3.4 Risk and Issues being Monitored by the Committee

I) Project Integration and Operations Readiness

- Nalcor/NLH readiness to connect the Muskrat Falls Project to the Island and North American electricity grid and operate facilities effectively.

J) Project Delivery Team Retention

- Project Team personnel departures and potential impact on project completion; and
- Departures continued to occur over the Quarter.

K) Additional Risks

- Protest unrest;
 - Commission of Inquiry Respecting the Muskrat Falls Project;
 - Impoundment delay into 2020;
 - Other unforeseen directives from Government;
 - Astaldi arbitration/litigation;
 - HVdc P&C software development completion risk; and
 - Potential impact on cost and schedule.
- Funds are not held within the June 2017 Project Budget for these additional risks.

3.5 Subsequent Events to Q2 2019

- On July 10, 2019 Nalcor issued a public notice as the required one month notification prior to the anticipated start of reservoir impoundment.
- On July 16-19, 2019 the Committee Chair participated in Project site visits and meetings with the IE and NRCan. The IE's report from this visit will be posted to the Committee's website once released by Nalcor.
- Release of the IE's March 2019 report regarding a November 2018 Powerhouse P&C facility visit and December 2018 technical visit to St John's, as was indicated in the Committee's Q1 report, has yet to occur. Discussions are continuing between the IE and Nalcor. As indicated previously, Nalcor will be providing a formal response to the IE. Upon release of the IE report by Nalcor, it will be posted to the Committee website.
- On August 6, 2019 reservoir impoundment commenced and on August 14, 2019 Nalcor public Weekly Dam Safety Monitoring summaries commenced.
- On August 15, 2019 Nalcor released its Q2 financial results. These results can be found on the Nalcor website @ [Click here](#).
- On August 26, 2019 Nalcor filed its formal response to Astaldi's statement of claim and counter-claim in the Astaldi arbitration/litigation.

3.5 Subsequent Events to Q2 2019

- On September 4, 2019 reservoir impoundment was complete. With impoundment complete, impoundment delay risk beyond the mid-July commencement date (as indicated on pages 9 and 12 of this report) has now been retired from the Nalcor project risk register.
- On September 5, 2015 Jason Muise, Independent Committee Member concluded his time with the Committee. The Committee wishes to thank Mr. Muise for his volunteer effort and valuable contribution.
- During a Committee meeting on September 12, 2019 Nalcor advised that:
 - Powerhouse Unit 1 ready to turn milestone is being reviewed and will move into October, but does not impact Ready for Operation of Unit 1 forecast date;
 - During dynamic commissioning of the Soldiers Pond synchronous condensers, vibration in Unit 3 and binding in Units 1 and 2 has been encountered. Root cause investigations and mitigations are ongoing and schedule impacts are being assessed; and
 - Based on ITP reviews, further slippage of P&C bipole software delivery is anticipated. Nalcor is meeting with GE to discuss milestones, software quality and contractual matters.
- The Committee will report any changes to schedule and risk in reference to the three previous bullets, following review of project materials over the reporting period in preparation of the Committee's Q3, 2019 report.

4.0 Nalcor Reporting

- 4.1 Summary - Quarter Ending June 2019
- 4.2 Project Expenditures
- 4.3 Contingency
- 4.4 Earned Progress

4.1 Summary – Quarter Ending June 2019

- June 2019 Summary:
 - Overall construction progress is at 98.0%;
 - \$9,284 Million in incurred costs; and
 - \$9,509 Million in committed costs.
- Overall, the project is tracking in compliance with the June 2017 budget and schedule, however there have been schedule milestone adjustments for power supply which now place power supply as critical path for the project.
- As of June 2019, the June 2017 budget final forecast cost remains unchanged.
 - While the overall budget and final forecast cost remains unchanged, variances between the project budget and final forecast costs have occurred within and among expenditure categories. Most variances are related to the transfer of budget between allocations from the contingency budget to the procurement and construction budget.
 - The June 2017 budget does not include funds for Additional Risks as indicated on page 13 of this report, which at the end of June 2019 totaled approximately \$835 Million.
- The current forecast contingency budget at June 2019 is \$140.7 Million, a decrease of \$24.1 Million from the previous Quarter. For further detail see Section 4.3.

4.1 Summary – Quarter Ending June 2019

Quarterly Planned vs Incurred Cost Variances:

MFGen	
Cumulative Planned: \$5,206M	Q2 2019 Planned: \$145M
Cumulative Incurred: \$4,890M	Q2 2019 Incurred: \$134M
Variance: -\$316M (-6.1%)	Variance: -\$11M (-7.6%)

- Planned expenditure by month was set in June 2017.
- During Q2 2019, the variance in planned vs. incurred cost is primarily due to less than planned expenditure under the North and South Dams Contract (CH0009 – scope is now complete) and less than planned expenditure under the Owner’s Team.
- See Section 4.2 and Appendix B for further detail.

4.1 Summary – Quarter Ending June 2019

Quarterly Planned vs Incurred Cost Variances:

LITL	
Cumulative Planned: \$3,714M	Q2 2019 Planned: \$16M
Cumulative Incurred: \$3,532M	Q2 2019 Incurred: \$22M
Variance: -\$182M (-4.9%)	Variance: \$6M (37.5%)

LTA	
Cumulative Planned: \$904M	Q2 2019 Planned: \$0M
Cumulative Incurred: \$863M	Q2 2019 Incurred: \$8M
Variance: -\$41M (-4.5%)	Variance: \$8M (100%)

- The planned expenditure by month was set in June of 2017.
- During Q2 2019, incurred was higher than planned due to extension of scope into 2019, whereas scope was planned to be substantially complete in 2018.
- See Section 4.2 and Appendix B for further detail.

4.1 Summary – Quarter Ending June 2019

Planned vs Earned Progress:

- MFGen
 - Cumulative progress as of end Q2 2019 was 95.8% vs. a plan of 98.6% (variance of -2.8%). Quarterly progress for Q2 2019 was 1.4% vs. a plan of 3.3% (variance of -1.9%).
 - During the Quarter, the cumulative variance increased from 0.9 to 2.8% behind plan.
 - As noted in the previous reports, over the past 2 years the planned timing of installation of the rollways has changed. The first two rollways were completed in 2018. The third was planned for 2018; however was not completed due to the termination of the Astaldi contract. The last 3 are now planned for installation in 2019. Rollway 3 started in June 2019, and progress on the installation of the Turbines and Generator units is trending behind plan.
- LTA/LITL
 - > 99% complete.
- See Section 4.2 and Appendix C for further detail.

4.1 Summary – Quarter Ending June 2019

Power Development:

- The project remains on budget and on schedule with the June 2017 budget;
- Spillway and gates remain at 91% construction complete;
- Powerhouse is at (95% complete);
 - Intake, Powerhouse, Transition Dams and Spillway
 - 85% of punch list items are complete;
 - Preparation for final upstream pour on Rollway 3 ongoing and coring of secondary concrete complete; and
 - Start of tail race rock plug removal is rescheduled to August to allow for continues access over the rock plug and relieve congestion at the tailrace deck.
- Arbitration with Astaldi continues; payment of Astaldi related liens against the project ongoing; Nalcor intends to recover any costs associated from Astaldi or the contract's securities.
- Official statement of claim was received from Astaldi on May 31, 2019; Nalcor is preparing their defense and counter-claim which will be filed by August 26, 2019.
- Funds are not held within the current June 2017 budget should net damages be awarded in Astaldi's favour.
- Power Development's June 2019 summary schedule forecast can be found on slide 24.

4.1 Summary – Quarter Ending June 2019

- Hydro Mechanical Installation
 - Intake complete for all units;
 - Trash cleaning machine assembly and commissioning complete;
 - Stabilization struts in bays 2, 3, and 4 complete;
 - Stop log installed in bay 3; installation in bays 2 and 4 pending impoundment; and
 - Spillway remaining work planning ongoing.
- Turbines and Generators (as of July 20, 2019)

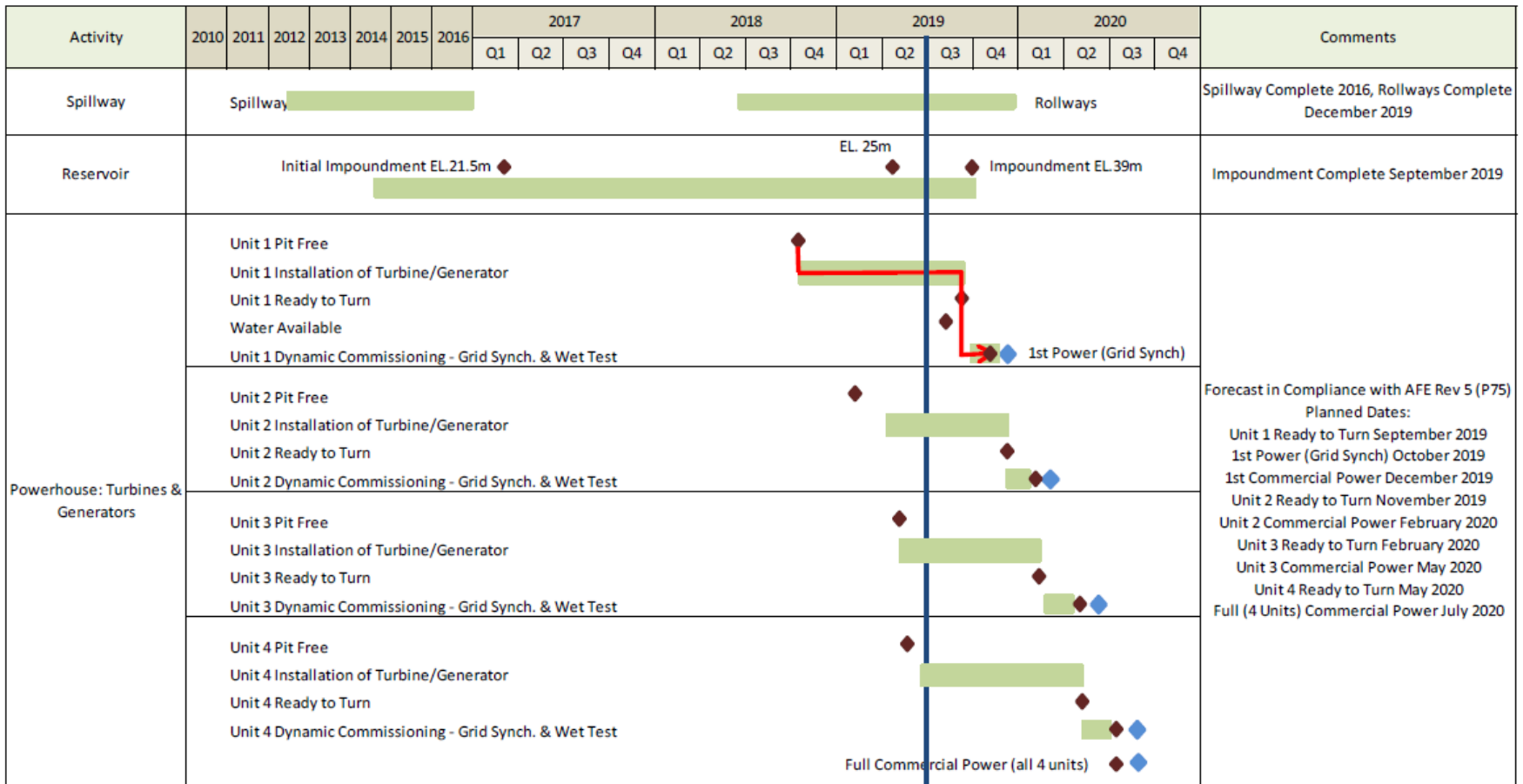
Unit	% Complete	Status
1	85	Rotor successfully installed in pit; coupling shaft installation in progress and upper bracket assembly ongoing.
2	36	Core loop testing complete; stator winding preparation ongoing; rotor welding ongoing and governor and accumulator piping ongoing; stator bar and hub installation is expected to be completed in mid-Q3.
3	22	Stator installation ongoing and outer head cover and wicket gates being cleaned.
4	17	Spider removal complete and preparation for machining and IPM deck set up ongoing.

4.1 Summary – Quarter Ending June 2019

- Balance of Plant
 - IPB for Unit 2 welding complete; welding on Unit 3 continues and installation commenced on Unit 4;
 - Hydrotests complete for fuel oil, fire suppression, deluge and service water systems;
 - Mechanical completion and commissioning continues throughout the powerhouse;
 - Priority being given to backfeed Unit 1 Ready to Turn Milestone; ready for backfeed is expected to be complete by mid-Q3 2019;
 - Walkdowns complete for IPB Unit 1, switchyard AH panels and DC distribution panels and installation of telecommunications equipment is complete; and
 - As of the end of June 2019, overall work scope is at 74%.
- North and South Dams
 - Work scope is complete and commercial close-out is ongoing.
- Impoundment Readiness
 - Preparations for reservoir impoundment ongoing; as of late July 2019, favourable forecasted water flows satisfactory for impoundment observed.
- Focus areas for Q3 2019 include execution of remaining powerhouse and spillway work, and preparations for ready to turn and first power schedule milestones.
- The forecast expenditure for Q3 2019 is estimated at approximately \$160 Million.

4.1 Summary – Quarter Ending June 2019

Power Development June 2019 Summary Schedule Forecast



* Construction of Dams and Powerhouse Intake Scope Complete (Removed from Schedule Summary)

Legend: ◆ Current Forecast (June 2019) ◆ Planned Dates (June 2017 AFE Rev 5)

4.1 Summary – Quarter Ending June 2019

Power Supply:

- The project remains on budget; however the LITL is now critical path for the overall project schedule.
- Strait of Belle Isle (SOBI)
 - Construction complete (100%), commercially closed, and turned over to operations.
- Labrador Transmission Assets
 - Construction complete (100%) and turned over to operations.
- Labrador Island Transmission Link (99.94%)
 - Overhead transmission line construction complete;
 - HVdc Specialties;
 - Soldiers Pond switchyard turned over to operations;
 - Bipole software development continuing; weekly meetings between GE and Nalcor are ongoing to discuss progress of bipole software development and Independent Third Party (ITP) reviewers are validating progress, functionality and completion deliverables under the GE amending agreement; and
 - Bipole software completion and dynamic commissioning remains the largest risk for Power Supply.
- Power Supply's June 2019 summary schedule forecast can be found on slide 29.

4.1 Summary – Quarter Ending June 2019

Monopole (Pole1) Status

- Ready for Power Transmission - Low Load Testing Pole 1 milestone was completed June 4, 2019.

Bipole Software Status

- A static version of bipole software has been installed on the project site. This version is being used to check installation of pole 2 hardware;
- GE Grid commenced their system integration testing (IST), a prerequisite to Factory Acceptance Tested (FAT) software in late June 2019;
- Based on examination by Independent Third Party (ITP) review, the IST schedule was extended to allow time for GE Grid to resolve bugs which would affect delivery date of the of the August 2019 FAT interim bipole software;
- In anticipation of delivery concerns, in June 2019 Power Supply forecasted delivery of the FAT interim bipole software for mid-October 2019 in the LCP Integrated Project Schedule and forecasted low load testing of interim bipole software to commence in January 2020;
- Correspondingly, the Muskrat Falls and Soldiers Pond Converter Stations - Bipole Dynamic Testing Complete schedule milestone has also been adjusted from March 2020 to June 2020; and
- Nalcor executives have been meeting with GE executives on software progress and alignment on milestone dates for quality interim bipole software.
- For further details on schedule milestone dates see Appendix D.

4.1 Summary – Quarter Ending June 2019

Bi-Pole Schedule (Nalcor June forecast)

Activity	Timing
Bi-Pole software FAT Complete (Interim software)	October 2019
Bi-Pole commissioning (Low Load Testing) complete (Interim software)	February 2020
Bi-Pole commissioning (Low Load Testing) complete (Final software)	June 2020

4.1 Summary – Quarter Ending June 2019

Synchronous Condensers

- Remediation
 - All remediation work associated with issues identified in previous reports including; lube oil contamination, rotor lift and hydrogen piping system, have been resolved.
- Static and Dynamic Commissioning

Unit	Status
3	Dynamic commissioning ongoing; rotated the Unit at 900rpm; on grid synchronization complete with dynamic commissioning of excitation complete; and balancing of rotor and controls testing ongoing.
1	Dynamic commissioning of auxiliaries is complete; and dynamic commissioning commenced.
2	Static commissioning of auxiliaries has commenced.

- Commissioning of all three units expected by Q4. The Soldiers Pond Synchronous Condenser Ready for Operation schedule milestone has moved from September 2019 to October 2019 since the last Quarterly reporting period.
- For further details on schedule milestone dates see Appendix D.
- The focus for Q3 2019 remains on continued completions, commissioning and integration of operations; and the forecast expenditure for Q3 2019 is estimated at approximately \$82 Million.

4.1 Summary – Quarter Ending June 2019

Power Supply Summary Schedule
Current Forecast (June 2019)

Activity	2010	2011	2012	2013	2014	2015	2016	2017				2018				2019				2020				2021	Comments	
								Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1		
Labrador Transmission Assets																										Ready for Power Transmission Achieved April 2018
SOBI/HVdc																										HVdc Transmission Line Complete December 2017
HVdc Pole 1																										- HVdc Energization Achieved June 2018 - Pole 1 Fully Energized and Power Transmission Ongoing Since December 2018
HVdc Bipole (Low Load)																										- All Units Dynamically Commissioned October 2019 - Completion of Bipole Dynamic Commissioning (Ready for Power Transmission) June 2020

Legend:
◆ Current Forecast (June 2019 update)
◆ Planned Dates (June 2017 AFE Rev 4)

4.2 Project Expenditures

June 2019 (\$000)	Project Budget June 2017 AFE	Cumulative \$			Cumulative %		
		Plan	Incurred	Variance	Plan	Incurred	Variance
<i>Description</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>C-B</i>	<i>D=B/A</i>	<i>E=C/A</i>	<i>E-D</i>
NE-LCP Owners Team, Admin and EPCM Services	\$1,115,235	\$1,060,181	\$993,197	(\$66,984)	95.1%	89.1%	-6.0%
Feasibility Engineering	\$37,072	\$37,073	\$35,847	(\$1,226)	100.0%	96.7%	-3.3%
Environmental & Regulatory Compliance	\$42,669	\$42,318	\$38,718	(\$3,600)	99.1%	90.7%	-8.4%
Aboriginal Affairs	\$17,478	\$15,458	\$21,254	\$5,796	88.4%	121.6%	33.2%
Procurement & Construction	\$8,475,290	\$8,590,881	\$8,125,573	(\$465,308)	101.4%	95.9%	-5.5%
Commercial & Legal	\$90,423	\$77,541	\$69,772	(\$7,769)	85.8%	77.2%	-8.6%
Contingency	\$339,162	\$0	\$0	\$0	0.0%	0.0%	0.0%
TOTAL	\$10,117,328	\$9,823,452	\$9,284,361	(\$539,091)	97.1%	91.8%	-5.3%

June 2019 (\$000)	Project Budget June 2017 AFE	Incurred Cumulative Costs June 2019	Project Final Forecast Cost June 2019	Variance PFC from Budget
<i>Description</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D=A-C</i>
NE-LCP Owners Team, Admin and EPCM Services	\$1,115,235	\$993,197	\$1,166,575	(\$51,340)
Feasibility Engineering	\$37,072	\$35,847	\$35,847	\$1,225
Environmental & Regulatory Compliance	\$42,699	\$38,718	\$41,408	\$1,291
Aboriginal Affairs	\$17,478	\$21,254	\$31,451	(\$13,973)
Procurement & Construction	\$8,475,290	\$8,125,573	\$8,592,125	(\$116,835)
Commercial & Legal	\$90,423	\$69,772	\$109,228	(\$18,805)
Contingency	\$339,162	\$0	\$140,695	\$198,467
TOTAL	\$10,117,328	\$9,284,361	\$10,117,329	\$0

Columns in tables may not total due to rounding

4.3 Contingency

Q2 June 2019 (\$000)	Project Budget June 2017 AFE	March 2018 AFE Adjustment	Project Forecast Cost March 2019	Project Forecast Cost June 2019	Change from Previous Quarter	Variance PFC from Budget
	<i>A</i>	-	<i>B</i>	<i>C</i>	<i>C - B</i>	<i>C - A</i>
Total Project	\$339,162	\$339,162	\$164,812	\$140,695	(\$24,117)	(\$198,467)

4.4 Earned Progress

Cumulative to end of June 2019	Weight Factor %	June 2019 Cumulative %			March 2019
		Planned	Earned	Variance	Variance
<i>Sub-Project</i>	A	B	C	D = C - B	E
Muskrat Falls Generation (MFGGen)	46.3%	98.6%	95.8%	-2.8%	-0.9%
Labrador Island Transmission Link (LITL)	43.9%	100.0%	99.92%	-0.08%	-0.1%
Labrador Transmission Asset (LTA)	9.8%	100.0%	100.00%	0.00%	-0.03%
Muskrat Falls Project - Overall	100.0%	99.3%	98.0%	-1.3%	-0.5%

June 2019 Period	Weight Factor %	Period %		
		Planned	Earned	Variance
<i>Sub-Project</i>	A	B	C	D = C - B
Muskrat Falls Generation (MFGGen)	46.3%	1.1%	0.5%	-0.6%
Labrador Island Transmission Link (LITL)	43.9%	0.0%	0.00%	0.00%
Labrador Transmission Asset (LTA)	9.8%	0.0%	0.01%	0.01%
Muskrat Falls Project - Overall	100.0%	0.5%	0.2%	-0.3%

Annex A

- I. Project Capital Budget
- II. Project Milestone Schedule

Columns in tables may not total due to rounding

I. Project Capital Budget

Muskrat Falls Generating Facility (in \$ thousands)	June 2017 AFE
<i>Expenditure Category</i>	
NE-LCP Owners Team, Admin and EPCM Services	\$655,850
Feasibility Engineering	\$17,543
Environmental & Regulatory Compliance	\$27,125
Aboriginal Affairs	\$16,395
Procurement & Construction	\$4,501,984
Commercial & Legal	\$54,760
Contingency	\$226,400
Muskrat Falls Generation Total	\$5,500,056
Labrador-Island Transmission Link (in \$ thousands)	March 2018 AFE
<i>Expenditure Category</i>	
NE-LCP Owners Team, Admin and EPCM Services	\$322,101
Feasibility Engineering	\$19,167
Environmental & Regulatory Compliance	\$14,726
Aboriginal Affairs	\$1,003
Procurement & Construction	\$3,233,690
Commercial & Legal	\$30,280
Contingency	\$92,750
Labrador-Island Transmission Link Total	\$3,713,716
Labrador-Transmission Assets (in \$ thousands)	March 2018 AFE
<i>Expenditure Category</i>	
NE-LCP Owners Team, Admin and EPCM Services	\$137,284
Feasibility Engineering	\$363
Environmental & Regulatory Compliance	\$817
Aboriginal Affairs	\$80
Procurement & Construction	\$739,617
Commercial & Legal	\$5,383
Contingency	\$20,012
Labrador Transmission Assets Total	\$903,556
Muskrat Falls Capital Cost Budget Total	\$10,117,328

Contingency Budget (in \$ thousands)	March 2018 AFE
Sub-Project:	
Muskrat Falls Generating Facility	\$226,400
Labrador-Island Transmission Link	\$92,750
Labrador Transmission Assets	\$20,012
Total Project	\$339,162

II. Project Milestone Schedule

Muskrat Falls Generating Facility	June 2017 Planned Dates
North Spur Works Ready for Diversion	Oct-16
River Diversion Complete	Feb-17
Reservoir Impoundment Complete	Nov-19
Powerhouse Unit 1 Commissioned - Ready for Operation	Dec-19
First Power from Muskrat Falls	Nov-19
Powerhouse Unit 2 Commissioned - Ready for Operation	Mar-20
Powerhouse Unit 3 Commissioned - Ready for Operation	Jun-20
Powerhouse Unit 4 Commissioned - Ready for Operation	Aug-20
Full Power from Muskrat Falls	Aug-20
Commissioning Complete - Commissioning Certificate Issued	Sep-20

Labrador-Island Transmission Link	June 2017 Planned Dates
SOBI Cable Systems Ready	Dec-16
Soldiers Pond Switchyard Ready to Energize	Aug-17
Ready for Power Transmission (LTA)	Dec-17
Muskrat Falls Converter Station Ready to Energize (Pole 1)	Jun-18
HVdc Transmission Line Construction Complete	Dec-17
Soldier's Pond Converter Station Ready to Energize (Pole 1)	Jun-18
1ST Power Transfer (Pole 1)	Jul-18
Soldiers Pond Synchronous Condenser Ready for Operation	Jun-18
Ready for Power Transmission (Low Load Testing Complete Pole 1)	Dec-18
Muskrat Falls and Soldiers Pond Converter Stations - Bipole Dynamic Testing Complete	Mar-19
Commissioning Complete - Commissioning Certificate Issued	Sep-20

Labrador Transmission Assets	June 2017 Planned Dates
HVAc Transmission Line Construction Complete	May-17
Churchill Falls Switchyard Ready to Energize	Nov-17
Muskrat Falls Switchyard Ready to Energize	Nov-17
Ready for Power Transmission	Dec-17
Commissioning Complete - Commissioning Certificate Issued	Sep-20

Annex B

Project Expenditures

- I. Muskrat Falls Generation
- II. Labrador Island Transmission Link
- III. Labrador Transmission Assets

Columns in tables may not total due to rounding

I. Muskrat Falls Generation

June 2019 (\$000)	Project Budget June 2017 AFE	Cumulative \$			Cumulative %		
		Planned	Incurred	Variance	Planned	Incurred	Variance
<i>Description</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>C-B</i>	<i>D=B/A</i>	<i>E=C/A</i>	<i>E-D</i>
NE-LCP Owners Team, Admin and EPCM Services	\$655,850	\$588,446	\$523,165	(\$65,281)	89.7%	79.8%	-10.0%
Feasibility Engineering	\$17,543	\$17,543	\$16,865	(\$678)	100.0%	96.1%	-3.9%
Environmental & Regulatory Compliance	\$27,125	\$26,775	\$26,311	(\$464)	98.7%	97.0%	-1.7%
Aboriginal Affairs	\$16,395	\$14,375	\$20,461	\$6,086	87.7%	124.8%	37.1%
Procurement & Construction	\$4,501,984	\$4,517,162	\$4,260,328	(\$256,834)	100.3%	94.6%	-5.7%
Commercial & Legal	\$54,760	\$41,878	\$42,541	\$663	76.5%	77.7%	1.2%
Contingency	\$226,400	\$0	\$0	\$0	0.0%	0.0%	0.0%
TOTAL	\$5,500,056	\$5,206,179	\$4,889,672	(\$316,507)	94.7%	88.9%	-5.8%

June 2019 (\$000)	Project Budget June 2017 AFE	Incurred Cumulative Costs June 2019
<i>Description</i>	<i>A</i>	<i>B</i>
NE-LCP Owners Team, Admin and EPCM Services	\$655,850	\$523,165
Feasibility Engineering	\$17,543	\$16,865
Environmental & Regulatory Compliance	\$27,125	\$26,311
Aboriginal Affairs	\$16,395	\$20,461
Procurement & Construction	\$4,501,984	\$4,260,328
Commercial & Legal	\$54,760	\$42,541
Contingency	\$226,400	\$0
TOTAL	\$5,500,056	\$4,889,672

II. Labrador Island Transmission Link

June 2019 (\$000)	Project Budget March 2018 AFE	Cumulative \$			Cumulative %		
		Plan	Incurred	Variance	Plan	Incurred	Variance
<i>Description</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>C-B</i>	<i>D=B/A</i>	<i>E=C/A</i>	<i>E-D</i>
NE-LCP Owners Team, Admin and EPCM Services	\$322,101	\$332,101	\$339,618	\$7,517	103.1%	105.4%	2.3%
Feasibility Engineering	\$19,167	\$19,167	\$18,679	(\$488)	100.0%	97.5%	-2.5%
Environmental & Regulatory Compliance	\$14,726	\$14,726	\$11,595	(\$3,131)	100.0%	78.7%	-21.3%
Aboriginal Affairs	\$1,003	\$1,003	\$625	(\$378)	100.0%	62.3%	-37.7%
Procurement & Construction	\$3,233,690	\$3,316,440	\$3,140,918	(\$175,522)	102.6%	97.1%	-5.4%
Commercial & Legal	\$30,280	\$30,280	\$20,461	(\$9,819)	100.0%	67.6%	-32.4%
Contingency	\$92,750	\$0	\$0	\$0	0.0%	0.0%	0.0%
TOTAL	\$3,713,716	\$3,713,716	\$3,531,895	(\$181,821)	100.0%	95.1%	-4.9%

June 2019 (\$000)	Project Budget March 2018 AFE	Incurred Costs Cumulative June 2019
<i>Description</i>	<i>A</i>	<i>B</i>
NE-LCP Owners Team, Admin and EPCM Services	\$322,101	\$339,618
Feasibility Engineering	\$19,167	\$18,679
Environmental & Regulatory Compliance	\$14,726	\$11,595
Aboriginal Affairs	\$1,003	\$625
Procurement & Construction	\$3,233,690	\$3,140,918
Commercial & Legal	\$30,280	\$20,461
Contingency	\$92,750	\$0
TOTAL	\$3,713,716	\$3,531,895

III. Labrador Transmission Assets

June 2019 (\$000)	Project Budget March 2018 AFE	Cumulative \$			Cumulative %		
		Plan	Incurred	Variance	Plan	Incurred	Variance
<i>Description</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>C-B</i>	<i>D=B/A</i>	<i>E=C/A</i>	<i>E-D</i>
NE-LCP Owners Team, Admin and EPCM Services	\$137,284	\$139,634	\$130,414	(\$9,220)	101.7%	95.0%	-6.7%
Feasibility Engineering	\$363	\$363	\$303	(\$60)	100.0%	83.5%	-16.5%
Environmental & Regulatory Compliance	\$817	\$817	\$812	(\$5)	100.0%	99.4%	-0.6%
Aboriginal Affairs	\$80	\$80	\$168	\$88	100.0%	210.0%	110.0%
Procurement & Construction	\$739,617	\$757,279	\$724,327	(\$32,952)	102.4%	97.9%	-4.5%
Commercial & Legal	\$5,383	\$5,383	\$6,770	\$1,387	100.0%	125.8%	25.8%
Contingency	\$20,012	\$0	\$0	\$0	0.0%	0.0%	0.0%
TOTAL	\$903,556	\$903,556	\$862,794	(\$40,762)	100.0%	95.5%	-4.5%

June 2019 (\$000)	Project Budget March 2018 AFE	Incurred Costs Cumulative June 2019
<i>Description</i>	<i>A</i>	<i>B</i>
NE-LCP Owners Team, Admin and EPCM Services	\$137,284	\$130,414
Feasibility Engineering	\$363	\$303
Environmental & Regulatory Compliance	\$817	\$812
Aboriginal Affairs	\$80	\$168
Procurement & Construction	\$739,617	\$724,327
Commercial & Legal	\$5,383	\$6,770
Contingency	\$20,012	\$0
TOTAL	\$903,556	\$862,794

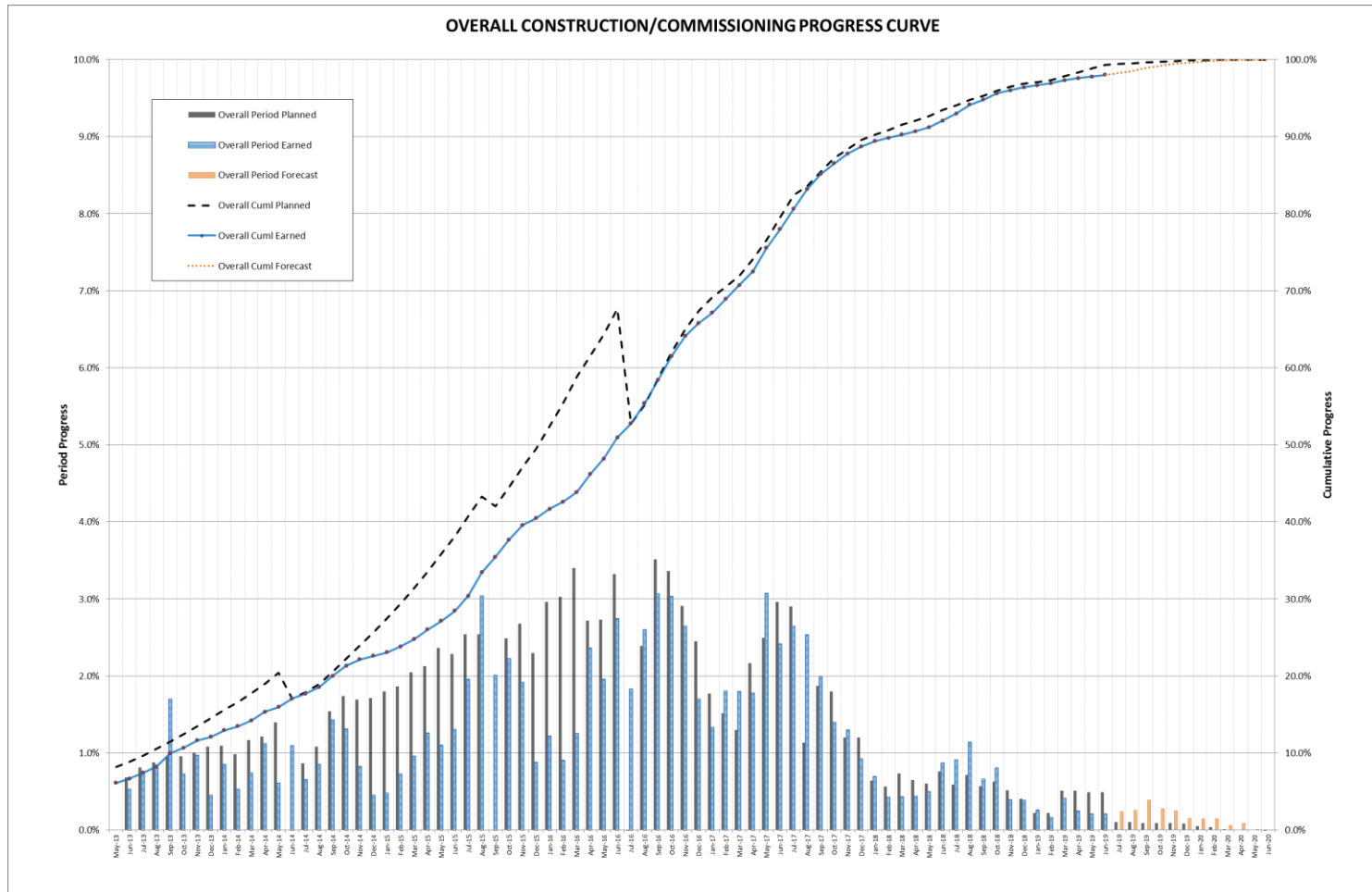
Annex C

Earned Progress

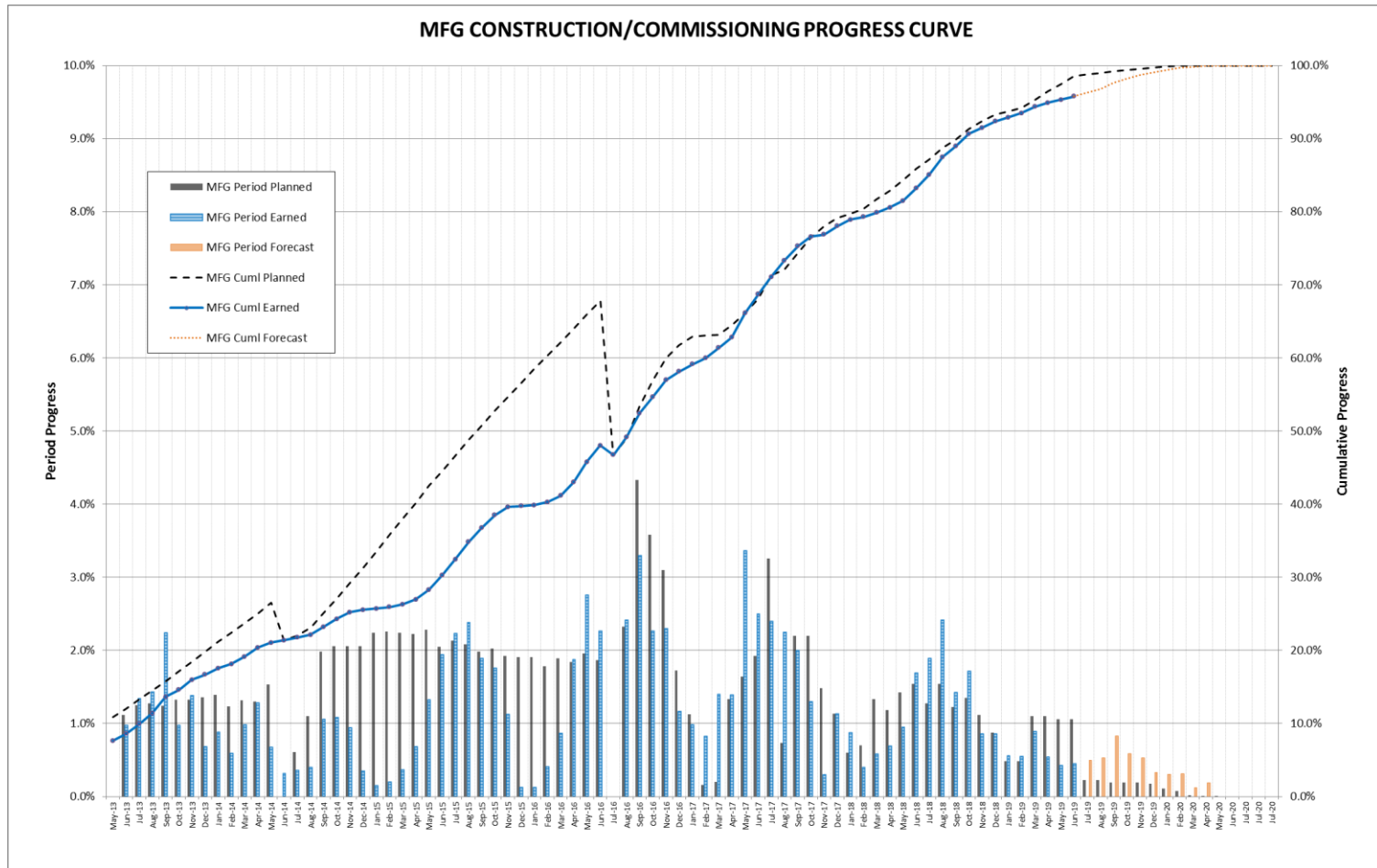
- I. Overall Construction
- II. Muskrat Falls Generation
- III. Labrador Island Transmission Link
- IV. Labrador Transmission Assets

Columns in tables may not total due to rounding

I. Overall Construction



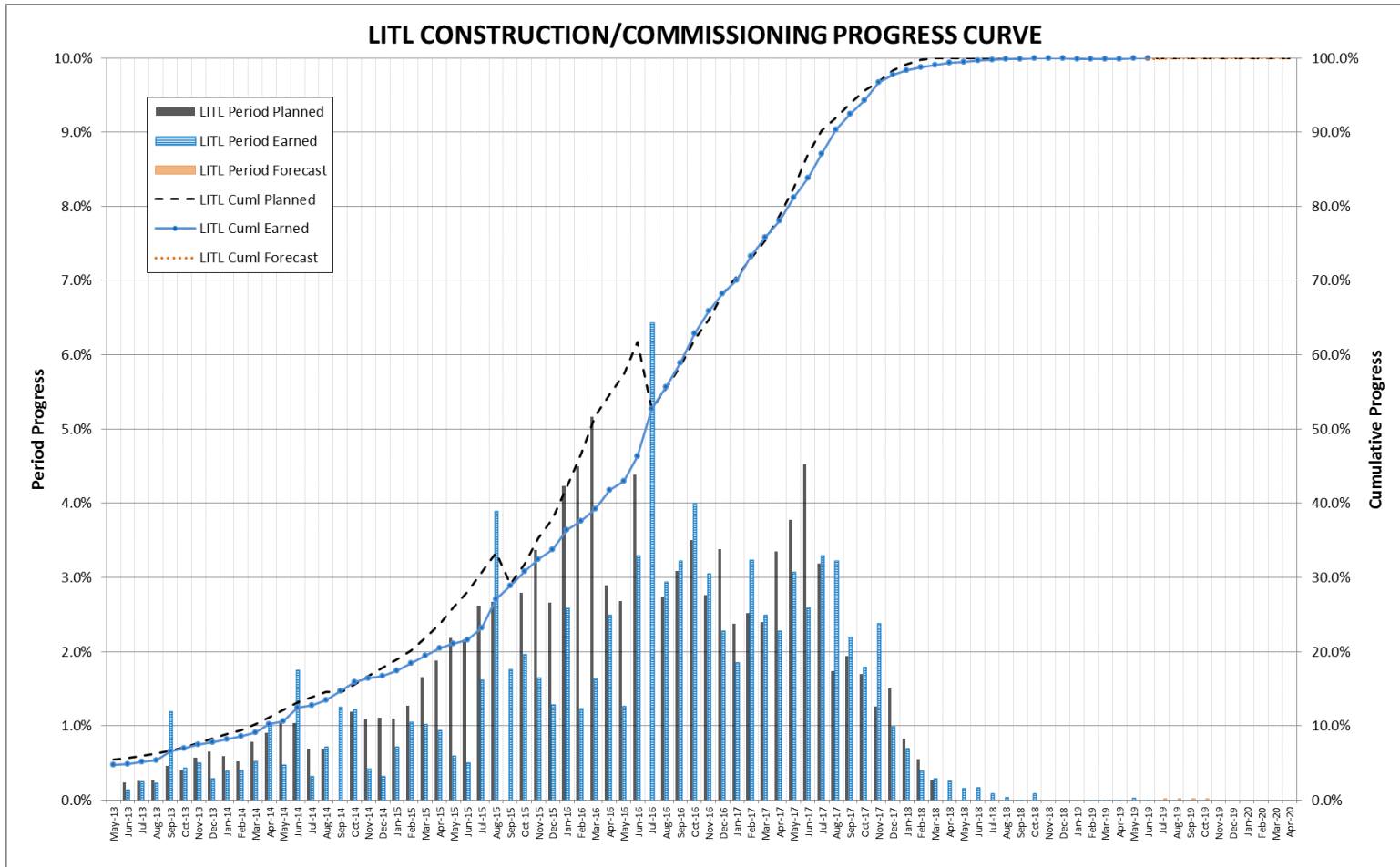
II. Muskrat Falls Generation



II. Muskrat Falls Generation

June 2019	Weight Factor %	June 2019 Cumulative %			March 2019
		Plan	Earned	Variance	Variance
<i>Sub-Project</i>	A	B	C	D = C - B	E
MFG Road/Camp/Constr. Power	8.9%	100.0%	100.0%	0.0%	0.0%
MFG Reservoir Preparation	5.8%	100.0%	100.0%	0.0%	0.0%
MFG Spillway & Gates	12.2%	100.0%	91.4%	-8.6%	-8.6%
MFG North Spur Stabilization	3.9%	100.0%	100.0%	0.0%	0.0%
MFG North Dam	5.7%	100.0%	100.0%	0.0%	0.0%
MFG Powerhouse & Intake	61.3%	97.8%	95.0%	-2.8%	0.1%
MFG South Dam	1.1%	100.0%	100.0%	0.0%	0.0%
MFG Misc:Eng/ 315kV/Site Rest./logistic	1.1%	90.3%	91.9%	1.6%	-1.1%
MFGGen - Overall	100.0%	98.6%	95.8%	-2.8%	-0.9%
* Adjusted for MFGGen rollway installation schedule		97.6%	95.8%	-1.8%	0.1%

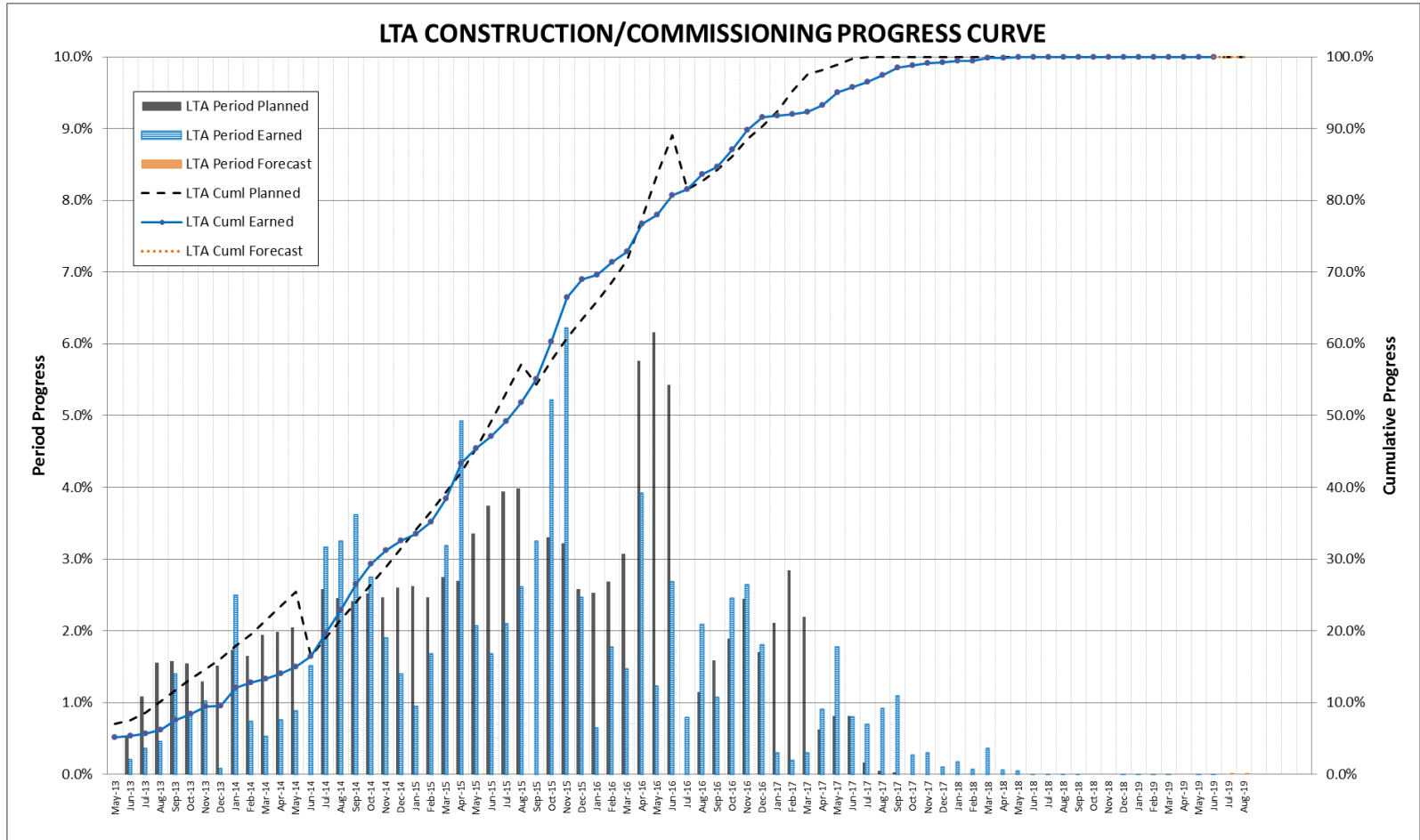
III. Labrador Island Transmission Link



III. Labrador Island Transmission Link

June 2019 <i>Sub-Project</i>	Weight	June 2019 Cumulative %			March 2019
	Factor %	Plan	Earned	Variance	Variance
	A	B	C	D = C - B	E
LITL Muskrat Falls Converter	6.1%	100.0%	99.5%	-0.5%	-0.8%
LITL Soldiers Pond Converter	5.5%	100.0%	99.30%	-0.7%	-0.8%
LITL HVdc Transmission Line Seg 1/2	26.8%	100.0%	100.0%	0.0%	0.0%
LITL HVdc Transmission Line Seg 3/4/5	34.2%	100.0%	100.0%	0.0%	0.0%
LITL Electrode Sites	0.8%	100.0%	100.0%	0.0%	0.0%
LITL Transition Compounds	1.7%	100.0%	100.0%	0.0%	0.0%
LITL SOBI Cable Crossing	17.7%	100.0%	100.0%	0.0%	0.0%
LITL Soldiers Pond Switchyard	2.7%	100.0%	100.0%	0.0%	0.0%
LITL Soldiers Pond Sync. Condensers	3.1%	100.0%	99.7%	-0.3%	-0.4%
LITL Misc	1.4%	100.0%	100.00%	0.0%	-1.9%
LITL- Overall	100.0%	100.0%	99.92%	-0.08%	-0.1%

IV. Labrador Transmission Assets



IV. Labrador Transmission Assets

June 2019	Weight	June 2019 Cumulative %			March 2019
	Factor %	Plan	Earned	Variance	Variance
Sub-Project	A	B	C	D = C - B	E
LTA HVac Transmission Line Seg1/2 - MF to CF	62.8%	100.0%	100.0%	0.0%	0.0%
LTA Churchill Falls Switchyard	21.7%	100.0%	100.0%	0.0%	0.0%
LTA Muskrat Falls Switchyard	13.4%	100.0%	100.00%	0.00%	0.05%
LTA Misc	2.1%	100.0%	100.00%	0.00%	-1.4%
LTA - Overall	100.0%	100.0%	100.00%	0.00%	0.03%

Annex D

Project Milestone Schedule Forecast

- I. Muskrat Falls Generation
- II. Labrador Island Transmission Link
- III. Labrador Transmission Assets

I. Muskrat Falls Generation

June 2019	Planned Date June 2017	June 2019 Actual/Forecast
Project Sanction	17-Dec-12	Complete
North Spur Works Ready for Diversion	31-Oct-16	Complete
River Diversion Complete	15-Feb-17	Complete
Reservoir Impoundment Complete	1-Nov-19	8-Sep-19
Powerhouse Unit 1 Commissioned - Ready for Operation	19-Dec-19	9-Dec-19
First Power from Muskrat Falls	2-Nov-19	15-Oct-19
Powerhouse Unit 2 Commissioned - Ready for Operation	3-Mar-20	21-Feb-20
Powerhouse Unit 3 Commissioned - Ready for Operation	9-Jun-20	6-May-20
Powerhouse Unit 4 Commissioned - Ready for Operation	14-Aug-20	20-Jul-20
Full Power from Muskrat Falls	14-Aug-20	20-Jul-20
Commissioning Complete - Commissioning Certificate Issued	1-Sep-20	1-Sep-20

II. Labrador Island Transmission Link

June 2019	Planned Date June 2017	June 2019 Actual/forecast
Project Sanction	17-Dec-12	Complete
SOBI Cable Systems Ready	9-Dec-16	Complete
Soldiers Pond Switchyard Ready to Energize	31-Aug-17	Complete
Ready for Power Transmission (LTA)	31-Dec-17	Complete
Muskrat Falls Converter Station Ready to Energize (Pole 1)	1-Jun-18	Complete
HVdc Transmission Line Construction Complete	31-Dec-17	Complete
Soldier's Pond Converter Station Ready to Energize (Pole 1)	1-Jun-18	Complete
1ST Power Transfer (Pole 1)	1-Jul-18	Completion of 45 megawatt heat run
Soldiers Pond Synchronous Condenser Ready for Operation	1-Jun-18	¹ 25-October-19
Ready for Power Transmission (Low Load Testing Complete Pole 1)	1-Dec-18	² Complete
Muskrat Falls and Soldiers Pond Converter Stations - Bipole Dynamic Testing Complete	31-Mar-19	³ 21-Jun-20
Commissioning Complete - Commissioning Certificate Issued	1-Sep-20	1-Sep-20

¹ < 1 month forecast date change since Q1 reporting period due to rotor lift on Unit 2 and hydrogen piping system contamination.

² - Completed June 4, 2019.

³ > 3 month forecast date change since Q1 2019 reporting period.

III. Labrador Transmission Assets

June 2019	June 2017 Budget Planned Date	June 2019 Actual/Forecast
Project Sanction	17-Dec-12	Complete
HVac Transmission Line Construction Complete	31-May-17	Complete: Turnover of HVac TL and all subsystems complete
Churchill Falls Switchyard Ready to Energize	30-Nov-17	Complete
Muskrat Falls Switchyard Ready to Energize	30-Nov-17	Complete
Ready for Power Transmission	31-Dec-17	Complete
Commissioning Complete - Commissioning Certificate Issued	1-Sep-20	1-Sep-20

End of Report