M058-T066-202-031144-00057 M058-A049-202-031144-00010 L052-T066-202-031144-00056 L052-A049-202-031144-00010

# CONSTRUCTION REPORT Muskrat/LTA Project Finance Agreement

Date: <u>20-January-2018</u>

### THE TORONTO-DOMINION BANK

AS COLLATERAL AGENT
66 Wellington Street West
9th Floor
Toronto, Ontario M5K 1A2

### **ARGIROV ENGINEERING**

AS INDEPENDENT ENGINEER 803-633 Kinghorne Mews Vancouver, BC V6Z 3H3

### Ladies and Gentlemen:

We refer you to the second amended and restated financing agreement dated as of May 10, 2017 entered into among Muskrat Falls Corporation ("Muskrat") and Labrador Transmission Corporation ("Labrador Transco"), as borrowers, Muskrat Falls/Labrador Transmission Assets Funding Trust (the "Funding Vehicle"), as lender, and The Toronto-Dominion Bank, as collateral agent (the "Collateral Agent") (said agreement, as same may be further amended, supplemented or restated from time to time is hereinafter referred to as the "Muskrat/LTA Project Finance Agreement").

We also refer you to the second amended and restated master definitions agreement dated as of May 10, 2017 entered into among, *inter alia*, the Collateral Agent, BNY Trust Company of Canada, as issuer trustee of the Funding Vehicle, Computershare Trust Company of Canada, as security trustee, Nalcor Energy, Her Majesty In Right of the Province of Newfoundland and Labrador, Muskrat, as a credit party, and Labrador Transco, as a credit party (said agreement, as same may be further amended, supplemented or restated from time to time is hereinafter referred to as the "MDA").

Unless otherwise defined herein or unless there be something in the subject or the context inconsistent therewith, all capitalized terms and expressions used herein shall have the same meaning as that ascribed to them from time to time in the MDA.

This Construction Report is delivered to you pursuant to subsection 7.4.2 and Section 11.3 of the Muskrat/LTA Project Finance Agreement in respect of the month ending on 31-December-2017 (the "Applicable Month").

I, Gilbert Bennett, the undersigned, the Executive Vice President, Power Development, of Devco, and of Muskrat, in my capacity as an officer and without personal liability, do hereby certify the matters set forth in Section A below, and I, John MacIsaac, the undersigned, the Executive Vice President, Power Supply, of Labrador Transco, and Chairperson of Devco, in my capacity as an officer and without personal liability, do hereby certify the matters set forth in Section B below:

### A. MUSKRAT MATTERS

- 1. I have conducted such investigations as I have deemed necessary to provide the information set out in this report and in so doing I have verified all engineering related matters with a licensed professional engineer working on our behalf in respect of the MF Plant.
- 2. Attached hereto as Part I of Schedule "A" is a true and accurate table detailing the Hard Costs incurred during the Applicable Month with respect to the MF Plant by and compared as against the MF Project Budget.
- 3. Attached hereto as Part I of Schedule "B" is a true and accurate analysis of the Cost to Complete the MF Plant, as it relates to Hard Costs, as at the end of the Applicable Month.
- 4. Attached hereto as Part I of Schedule "C" is a true and accurate analysis of the Cost Variances for the MF Plant, as they relate to Hard Costs, as at the end of the Applicable Month, with a narrative explanation as to any variances from the MF Project Budget.
- 5. The estimated Commissioning Date is currently 01-Sept-2020.
- 6. There are no material disputes with any Material Project Participant related to the MF Plant and any related claims against Muskrat, other than as set out in Part I of Schedule "E" hereto.
- 7. Attached hereto as Part I of Schedule "F" is a true and accurate report describing the progress of the construction of the MF Plant since the Previous Construction Report and compared as against the established milestones in the MF Project Schedule.
- 8. The MF Plant is being built substantially in all respects in accordance with the MF Project Plans and Good Utility Practice.
- 9. Subject to Sections 9.5 and 9.14 of the Muskrat/LTA Project Finance Agreement, I have no reason to believe that the MF Plant is being built in violation of any Applicable Laws or Authorizations pertaining to the MF Plant in effect at the time of performance of the relevant work.
- 10. Subject to Sections 9.5 and 9.14 of the Muskrat/LTA Project Finance Agreement, all Authorizations which, under Applicable Law, as at the date hereof are necessary to have been obtained in connection with the MF Plant and the work currently being performed on the MF Plant, have been obtained and are in full force and effect and do not contain any condition which could prevent or adversely affect the ability of the Credit Parties of attaining Commissioning by the Date Certain.
- 11. Subject to Sections 9.5 and 9.14 of the Muskrat/LTA Project Finance Agreement, all Material Project Participants related to the MF Plant and other Persons participating or working toward the Commissioning of the MF Plant, to the best of my Knowledge, are not in material default with respect to any of their respective obligations which would delay Commissioning beyond the Date Certain and Muskrat is not in material default in

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the payment of any sums due to such Persons in accordance with the terms agreed upon or in the fulfilment of any of its obligations with respect to such Persons, save and except with respect to such payments or obligations which Muskrat shall be contesting diligently and in good faith and in respect of which, in the event that such contestation should prove unsuccessful, no Lien shall be created or result upon or with respect to any of its Assets, except for Permitted Encumbrances.

12. Attached hereto as Part I of Schedule "G" is a true and complete copy of each of the Additional Material Project Documents entered into by Muskrat since the Previous Construction Report.

### B. LABRADOR TRANSCO MATTERS

- 13. I have conducted such investigations as I have deemed necessary to provide the information set out in this report and in so doing I have verified all engineering related matters with a licensed professional engineer working on our behalf in respect of the LTA.
- 14. Attached hereto as Part II of Schedule "A" is a true and accurate table detailing the Hard Costs incurred during the Applicable Month with respect to the LTA and compared as against the LTA Project Budget.
- 15. Attached hereto as Part II of Schedule "B" is a true and accurate analysis of the Cost to Complete for the LTA, as it relates to Hard Costs, as at the end of the Applicable Month.
- 16. Attached hereto as Part II of Schedule "C" is a true and accurate analysis of the Cost Variances for the LTA, as they related to Hard Costs, as at the end of the Applicable Month, with a narrative explanation as to any variances from the LTA Project Budget.
- 17. The estimated Commissioning Date is currently 01-Sept-2020.
- 18. There are no material disputes with any Material Project Participant related to the LTA and any related claims against Labrador Transco, other than as set out in Part II of Schedule "E" hereto.
- 19. Attached hereto as Part II of Schedule "F" is a true and accurate report describing the progress of the construction of the LTA since the Previous Construction Report and compared as against the established milestones in the LTA Project Schedule.
- 20. The LTA is being built substantially in all respects in accordance with the LTA Project Plans and Good Utility Practice.
- 21. Subject to Sections 9.5 and 9.14 of the Muskrat/LTA Project Finance Agreement, I have no reason to believe that the LTA is being built in violation of any Applicable Laws or Authorizations pertaining to the LTA in effect at the time of performance of the relevant work.

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- 22. Subject to Sections 9.5 and 9.14 of the Muskrat/LTA Project Finance Agreement, all Authorizations which, under Applicable Law, as at the date hereof are necessary to have been obtained in connection with the LTA and the work currently being performed on the LTA, have been obtained and are in full force and effect and do not contain any condition which could prevent or adversely affect the ability of the Credit Parties of attaining Commissioning by the Date Certain.
- 23. That, subject to Sections 9.5 and 9.14 of the Muskrat/LTA Project Finance Agreement, all Material Project Participants related to the LTA and other Persons participating or working toward the Commissioning of the LTA, to the best of our Knowledge, are not in material default with respect to any of their respective obligations which would delay Commissioning beyond the Date Certain and Labrador Transco is not in material default in the payment of any sums due to such Persons in accordance with the terms agreed upon or in the fulfilment of any of its obligations with respect to such Persons, save and except with respect to such payments or obligations which Labrador Transco shall be contesting diligently and in good faith and in respect of which, in the event that such contestation should prove unsuccessful, no Lien shall be created or result upon or with respect to any of its Assets, except for Permitted Encumbrances.
- 24. Attached hereto as Part II of Schedule "G" is a true and complete copy of each of the Additional Material Project Documents entered into by Labrador Transco since the Previous Construction Report.

Signed at St. John's, Newfoundland and Labrador, this 20<sup>th</sup> day of January, 2018.

Name: Gilbert Bennett, P. Eng.

Title: Executive Vice President, Power Development, of Muskrat Falls Corporation

Name: John MacIsaac P. Eng Title Executive Vice Preside

Title Executive Vice President, Power Supply, of Labrador Transmission

Corporation

Name: Gilbert Bennett, P. Eng.

Title: Executive Vice President, Power

Development, of Devco

Name: John MacIsaac, P. Eng. Title Chairperson, M. Devco

#### SCHEDULE "A"

#### 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-December-2017

			Planne	d Costs	Incurred Costs	
Description	Initial Project Budget	Project Budget	Current Period	Project-to-Date	Current Period	Project-to-Date
NE-LCP Owners Team, Admin and EPCM Services	\$378,969	\$655,850	\$6,494	\$443,381	\$8,100	\$436,548
Feasibility Engineering	\$18,345	\$17,543	\$0	\$17,543	\$0	\$17,543
Environmental & Regulatory Compliance	\$20,312	\$27,125	\$210	\$24,331	\$247	\$25,103
Aboriginal Affairs	\$13,314	\$16,395	\$415	\$11,523	\$424	\$11,529
Procurement & Construction	\$2,719,626	\$4,501,984	\$49,867	\$3,383,584	\$29,689	\$3,423,164
Commercial & Legal	\$20,457	\$54,760	\$861	\$26,381	\$871	\$30,216
Contingency	\$94,255	\$226,400	\$0	\$0	\$0	\$0
Total	\$3,265,278	\$5,500,056	\$57,847	\$3,906,743	\$39,331	\$3,944,101

Note 1: Costs in CAD (\$ Thousands)

Note 2: Initial Project Budget represents baseline set at Financial Close in November 2013

Note 3: Project Budget represents Authorization for Expenditure (AFE) approved by the Board of Directors on June 21, 2017

Note 4: Analysis and statements made with regard to variances are reflective of Project Budget, not Initial Project Budget

## Analysis:

Incurred Costs for the Current Period are lower than Project Budget Baseline, primarily in the category of "Procurement & Construction" due to expending lower than planned with respect to Construction of the Intake, Powerhouse, Spillway and Transition Dams under Contract CH0007 (due to early completion of milestones in the previous period); as well as under Contracts CH0030 and CH0032 for the Turbines and Generators and Supply and Install of Powerhouse Hydro-Mechanical Equipment, respectively. This is offset by incurred costs for the current period being higher than Project Budget Baseline for Construction of the North and South Dams under Contract CH0009. Overall, Incurred Costs Project-to-Date are higher than Project Budget Baseline in this category.

Incurred Costs for the Current Period are higher than Project Budget Baseline, however, are lower than Project Budget Baseline Project-to-Date in the category of "Owners Team, Admin and EPCM Services".

Incurred Costs for the Current Period and Project-to-Date in the category of "Feasibility Engineering" remain unchanged from the last reporting period.

Incurred Costs for the Current Period and Project-to-Date are higher than Project Budget Baseline in all other categories noted above.

The incurring of the Contingency is reflected within the incurred and future incurred costs in the above categories as and where the work is performed.

## Part II - Hard Costs for the LTA

Schedule "A" - Summary of Project Budget - Hard Costs Lower Churchill Project-Phase 1 Labrador Transmission Asset (LTA)

Period Ending 31-December-2017

	to take I Book to sa	Project Budget	Planne	d Costs	Incurred Costs	
Description	Initial Project Budget		Current Period	Project-to-Date	Current Period	Project-to-Date
NE-LCP Owners Team, Admin and EPCM Services	\$76,238	\$137,284	\$1,212	\$132,942	\$1,030	\$125,292
Feasibility Engineering	\$256	\$363	\$0	\$363	\$0	\$363
Environmental & Regulatory Compliance	\$710	\$817	\$0	\$817	-\$1	\$812
Aboriginal Affairs	\$188	\$80	\$7	\$40	\$0	\$140
Procurement & Construction	\$626,869	\$739,617	\$6,665	\$738,913	\$4,728	\$704,556
Commercial & Legal	\$2,030	\$5,383	\$183	\$4,285	\$861	\$5,059
Contingency	\$14,030	\$10,012	\$0	\$0	\$0	\$0
Total	\$720,322	\$893,556	\$8,067	\$877,360	\$6,618	\$836,222

Note 1: Costs in CAD (\$ Thousands)

Note 2: Initial Project Budget represents baseline set at Financial Close in November 2013

Note 3: Project Budget represents Authorization for Expenditure (AFE) approved by the Board of Directors on June 21, 2017

Note 4: Analysis and statements made with regard to variances are reflective of Project Budget, not Initial Project Budget

## Analysis:

Incurred Costs for the Current Period are lower than Project Budget baseline, primarily in the category of "Procurement & Construction" due to a delay in award of scope of work for the permanent communications systems under Contract CD0510; lower expenditure than planned with respect to civil works at the Muskrat Falls and Churchill Falls Switchyards under Contract CD0504; and Construction of the HVac Transmission Line under Contract CT0319. This is offset by incurred costs for the current period being higher than Project Budget Baseline with respect to Construction of the Muskrat Falls and Churchill Falls Switchyards under Contract CD0502. Overall, Incurred Costs Project-to-Date are lower than Project Budget Baseline in this category.

Incurred Costs for the Current Period and Project-to-Date are lower than Project Budget Baseline in the category of "Owners Team, Admin and EPCM Services".

Incurred Costs for the Current Period and Project-to-Date in the categories of "Feasibility Engineering", and "Aboriginal Affairs", remain unchanged from the last reporting period.

Incurred Costs for the Current Period and Project-to-Date are lower than Project Budget Baseline in the category of "Environmental & Regulatory Compliance". The net negative incurred noted this month is as a result of the asset allocation adjustment completed at year end.

Incurred Costs for the Current Period and Project-to-Date are higher than Project Budget Baseline in the remaining category outlined above.

The incurring of the Contingency is reflected within the incurred and future incurred costs in the above categories as and where the work is performed.

### **SCHEDULE "B"**

# Part I - Muskrat Cost to Complete

# Schedule "B" - Summary of Cost to Complete Lower Churchill Project-Phase 1 Muskrat Falls Generation

Period Ending 31-December-2017

Description	Initial Project Budget	Project Budget	Incurred Costs Project-to-Date	Final Forecast Cost (FFC)	Cost to Complete
NE-LCP Owners Team, Admin and EPCM Services	\$378,969	\$655,850	\$436,548	\$657,580	\$221,032
Feasibility Engineering	\$18,345	\$17,543	\$17,543	\$17,543	\$0
Environmental & Regulatory Compliance	\$20,312	\$27,125	\$25,103	\$27,865	\$2,762
Aboriginal Affairs	\$13,314	\$16,395	\$11,529	\$16,395	\$4,866
Procurement & Construction	\$2,719,626	\$4,501,984	\$3,423,164	\$4,516,812	\$1,093,648
Commercial & Legal	\$20,457	\$54,760	\$30,216	\$60,792	\$30,577
Contingency	\$94,255	\$226,400	\$0	\$203,069	\$203,069
Total	\$3,265,278	\$5,500,056	\$3,944,101	\$5,500,056	\$1,555,954

Note 1: Costs in CAD (\$ Thousands)

Note 2: Initial Project Budget represents baseline set at Financial Close in November 2013

Note 3: Project Budget represents Authorization for Expenditure (AFE) approved by the Board of Directors on June 21, 2017

Note 4: Analysis and statements made with regard to variances are reflective of Project Budget, not Initial Project Budget

## Analysis:

The Cost to Complete for "Owners Team, Admin and EPCM Services" has decreased from last month due to the incurred costs this period, along with the decrease in Final Forecast Cost for this category.

The Cost to Complete for "Feasibility Engineering" remains unchanged from the last reporting period.

The Cost to Complete for "Procurement & Construction" has decreased from last month due to the incurred costs this period, notwithstanding the increase in Final Forecast Cost for this category, and continues to remain significant as construction activities for work in progress are ongoing.

The Cost to Complete for "Commercial & Legal" has decreased from last month due to the incurred costs this period, notwithstanding the increase in Final Forecast Cost for this category.

The Cost to Complete for "Contingency" has decreased as a result of the decrease in Final Forecast Cost for this category.

The Cost to Complete for all other categories has decreased from last month by the incurred cost this period, as the Final Forecast Cost remains unchanged from the last reporting period.

## Part II - Labrador Transco Cost to Complete

# Schedule "B" - Summary of Cost to Complete Lower Churchill Project-Phase 1 Labrador Transmission Asset (LTA)

Period Ending 31-December-2017 **Final Forecast Initial Project Incurred Costs** Cost to **Project Budget** Description Cost Budget Project-to-Date Complete (FFC) **NE-LCP Owners Team, Admin and EPCM Services** \$76,238 \$137,284 \$125,292 \$137,284 \$11,992 **Feasibility Engineering** \$256 \$363 \$363 \$363 \$0 \$6 **Environmental & Regulatory Compliance** \$710 \$817 \$812 \$817 **Aboriginal Affairs** \$188 \$140 \$106 \$80 \$246 **Procurement & Construction** \$626,869 \$739,617 \$704,556 \$742,283 \$37,728 **Commercial & Legal** \$1,324 \$5,383 \$5,059 \$6,383 \$2,030 Contingency \$14,030 \$10,012 \$0 \$6,179 \$6,179 Total \$720,322 \$893.556 \$836.222 \$893,556 \$57,334

Note 1: Costs in CAD (\$ Thousands)

Note 2: Initial Project Budget represents baseline set at Financial Close in November 2013

Note 3: Project Budget represents Authorization for Expenditure (AFE) approved by the Board of Directors on June 21, 2017

Note 4: Analysis and statements made with regard to variances are reflective of Project Budget, not Initial Project Budget

### Analysis:

The Cost to Complete for "Feasibility Engineering" remains unchanged from the last reporting period.

The Cost to Complete for "Environmental & Regulatory Compliance" has increased as a result of the year end adjustment completed in the current reporting period as described in Schedule "A".

The Cost to Complete for "Aboriginal Affairs" has increased from last month as a result of the increase in Final Forecast Cost for this category.

The Cost to Complete for "Procurement & Construction" has decreased from last month due to the incurred costs this period, as well as the decrease in Final Forecast Cost for this category, and continues to remain significant as construction activities for work in progress are ongoing.

The Cost to Complete for "Commercial & Legal" has increased from last month as a result of the increase in Final Forecast Cost for this category.

The Cost to Complete for "Contingency" has decreased as a result of the decrease in Final Forecast Cost for this category.

The Cost to Complete for the remaining category has decreased from last month by the incurred cost this period, as the Final Forecast Cost remains unchanged from the last reporting period.

#### SCHEDULE "C"

#### Part I - Muskrat Cost Variances

## Schedule "C" - Summary of Cost Variances Lower Churchill Project-Phase 1 Muskrat Falls Generation

Period Ending 31-December-2017

Description	Initial Project Budget	Project Budget	Final Forecast Cost (FFC)	Variance
NE-LCP Owners Team, Admin and EPCM Services	\$378,969	\$655,850	\$657,580	\$1,730
Feasibility Engineering	\$18,345	\$17,543	\$17,543	\$0
Environmental & Regulatory Compliance	\$20,312	\$27,125	\$27,865	\$740
Aboriginal Affairs	\$13,314	\$16,395	\$16,395	\$0
Procurement & Construction	\$2,719,626	\$4,501,984	\$4,516,812	\$14,828
Commercial & Legal	\$20,457	\$54,760	\$60,792	\$6,032
Contingency	\$94,255	\$226,400	\$203,069	-\$23,331
Total	\$3,265,278	\$5,500,056	\$5,500,056	\$0

Note 1: Costs in CAD (\$ Thousands)

Note 2: Initial Project Budget represents baseline set at Financial Close in November 2013

Note 3: Project Budget represents Authorization for Expenditure (AFE) approved by the Board of Directors on June 21, 2017

Note 4: Analysis and statements made with regard to variances are reflective of Project Budget, not Initial Project Budget

## Analysis:

The Final Forecast Cost for "Owners Team, Admin and EPCM Services" has decreased during the current reporting period by \$30 as a result of savings identified on closeout of camp expansion costs; as well as the transfer of costs to the category of "Commercial & Legal" as a result of a coding adjustment. This is offset by the transfer of costs from the category of "Procurement & Construction" for third party engineering services, as well as costs associated with river management. As a result of the above, the variance has decreased from \$1,760 as reported last period.

The Final Forecast Cost for "Procurement and Construction" has increased during the current reporting period by \$3,109 (resulting balance of an overall forecast increase of approximately \$14,000 offset by an approximate overall forecast decrease of \$11,000). The increases are primarily as a result of additional requirements with respect to scope of work for Construction of the Intake, Powerhouse, Spillway and Transition Dams under Contract CH0007; along with additional funds required for the Muskrat Falls asset management package under SH0081; and alignment of final costs for the collector line under Contract CT0319. The offsetting decreases are due to a forecast reduction in MF Fuel Supply and Dispensing Services under Contract SH0022; savings identified on Construction of the North Spur under Contract CH0008; a reduction in hotel expenses under Contract SH0018; the cancellation of available budget for scope of work related to Offsite Infrastructure Upgrades under Contract CD0568; a coding adjustment with respect to the access road for the MF Converter Station carried out under scope of work for Contract CH0009; and the transfer of costs to the category of "Owners Team, Admin and EPCM Services" as noted above. As a result of the above, the overall variance in this category has increased from \$11,720 as reported last period.

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Subsequent to the Cost Period Close, an Agreement was reached between Muskrat and the CH0007 Contractor for Construction of the Intake, Powerhouse, Spillway and Transition Dams, with respect to a number of outstanding change requests. Final written agreement is expected in the next period.

The Final Forecast Cost for "Commercial & Legal" has increased during the current reporting period by \$32 as a result of the transfer of costs from the category of "Owners Team, Admin and EPCM Services" as noted above. As a result of the above, the variance has increased from \$6,000 as reported last period.

The Final Forecast Cost for "Contingency" has decreased by a net amount of \$3,111 as a result of the changes described above.

The Final Forecast Costs for all other categories remain unchanged from the last reporting period, and there is no change to the overall Final Forecast Cost for Muskrat Falls Generation.

#### Part II - Labrador Transco Cost Variances

# Schedule "C" - Summary of Cost Variances Lower Churchill Project-Phase 1 Labrador Transmission Asset (LTA)

Period Ending 31-December-2017

Description	Initial Project Budget	Project Budget	Final Forecast Cost (FFC)	Variance
NE-LCP Owners Team, Admin and EPCM Services	\$76,238	\$137,284	\$137,284	\$0
Feasibility Engineering	\$256	\$363	\$363	\$0
Environmental & Regulatory Compliance	\$710	\$817	\$817	\$0
Aboriginal Affairs	\$188	\$80	\$246	\$166
Procurement & Construction	\$626,869	\$739,617	\$742,283	\$2,667
Commercial & Legal	\$2,030	\$5,383	\$6,383	\$1,000
Contingency	\$14,030	\$10,012	\$6,179	-\$3,833
Total	\$720,322	\$893,556	\$893,556	\$0

Note 1: Costs in CAD (\$ Thousands)

Note 2: Initial Project Budget represents baseline set at Financial Close in November 2013

Note 3: Project Budget represents Authorization for Expenditure (AFE) approved by the Board of Directors on June 21, 2017

Note 4: Analysis and statements made with regard to variances are reflective of Project Budget, not Initial Project Budget

### Analysis:

The Final Forecast Cost for "Aboriginal Affairs" has increased by \$26 as a result of additional costs associated with the donation provided to the Community of Mud Lake in October 2017. As a result of the above, the variance has increased from \$140 as reported last period.

The Final Forecast Cost for "Procurement and Construction" has decreased during the current reporting period by \$50 primarily as a result of savings identified on the cost of camp services under Contract SH0018; the alignment of final costs for the collector line under Contract CT0319; the cancellation of holdback with respect to ROW Clearing of the 315 kv HVac Transmission Line (MF to CF) under Contract CT0341; and the cancellation of remaining available budget for the Marshalling Yard under Contract CT0354. This is offset by costs associated with the signed Amending Agreement with Contractor for the Muskrat Falls and Churchill Falls Switchyards under Contract CD0502. As a result of the above, the variance has decreased from \$2,717 as reported last period.

The Final Forecast Cost for "Commercial & Legal" has increased by \$1,000 as a result of additional legal costs required in association with the assessment and resolution of the claim put forth by the CD0504-002 Contractor for the Muskrat Falls and Churchill Falls Switchyards, as noted under Part II of Schedule "E". As a result of the above, the variance has increased from \$0 as reported last period.

The Final Forecast Cost for "Contingency" has decreased by a net amount of \$976 as a result of the changes described above.

The Final Forecast Costs for all other categories remain unchanged from the last reporting period, and there is no change to the overall Final Forecast Cost for LTA.

# SCHEDULE "D"

# **Part I - Muskrat Estimated Commissioning Date**

The estimated Commissioning Date is 01-Sept-2020 set forth in the MF Project Schedule.

# **Part II - Labrador Transco Estimated Commissioning Date**

The estimated Commissioning Date is 01-Sept-2020 set forth in the LTA Project Schedule.

#### SCHEDULE "E"

## **Part I - Muskrat Material Disputes**

There are currently no material disputes with any Material Project Participant, or related claims against Muskrat.

## Part II - Labrador Transco Material Disputes

In December 2016, the CD0504-002 Contractor for the civil works for the HVdc Converter Station at Muskrat Falls (CD0501) and the Muskrat Falls and Churchill Falls AC Substations (CD0502) submitted a formal Statement of Claim with the Supreme Court of Newfoundland & Labrador for costs associated with Lien Nos 18251 and 18252 to recover costs associated with schedule delays and changes in their scope of work.

In January 2017, the CD0504-002 Contractor made a claim presentation to the Contractor for the HVdc Converter Station at Muskrat Falls (CD0501) and the Contractor for the HVac Substations at Churchill Falls and Muskrat Falls, and Labrador Transco/General Partner, setting the basis for their claim. A forensic cost review of the actual losses by the CD0504-002 Contractor was completed by Labrador Transco/General Partner.

In July 2017, the CD0504-002 Contractor formally submitted a detailed claim for the Churchill Falls AC Substation scope (CD0502).

In late November 2017, Labrador Transco/General Partner presented its assessment of the CD0504-002 Contractor's claim with respect to the Churchill Falls AC Substation (CD0502); and an offer of settlement was presented to the CD0504-002 Contractor to settle all claims with respect to the Muskrat Falls and Churchill Falls scope of work. The offer was rejected; and discussions are ongoing in an attempt to resolve the claims.

# "SCHEDULE "F"

**Part I - MF Plant Construction Progress** 

Milestone Description	Initial Project Schedule	Planned (1)	Actual/Forecast	Status
Project Sanction	17-Dec-2012	17-Dec-2012	17-Dec-2012	Achieved
North Spur Works Ready for Diversion	30-Nov-2015	05-Oct-2016	05-Oct-2016	Achieved
River Diversion Complete	09-Nov-2016	15-Feb-2017	15-Feb-2017	Achieved
Reservoir Impoundment Complete (to 39m)	19-Nov-2017	01-Nov-2019	14-Oct-2019	
First Power from Muskrat Falls	30-Dec-2017	02-Nov-2019	15-Oct-2019	
Powerhouse Unit 1 Commissioned - Ready for Operation	30-Dec-2017	19-Dec-2019	09-Dec-2019	
Powerhouse Unit 2 Commissioned - Ready for Operation	18-Feb-2018	03-Mar-2020	21-Feb-2020	
Powerhouse Unit 3 Commissioned - Ready for Operation	21-Apr-2018	09-Jun-2020	06-May-2020	
Powerhouse Unit 4 Commissioned - Ready for Operation	22-May-2018	14-Aug-2020	20-Jul-2020	
Full Power from Muskrat Falls	22-May-2018	14-Aug-2020	20-Jul-2020	

Milestone Description	Initial Project Schedule	Planned (1)	Actual/Forecast	Status
Commissioning Complete - Commissioning Certificate Issued	01-Jun-2018	01-Sep-2020	01-Sep-2020	
Date Certain	28-Feb-2019	28-Feb-2021	28-Feb-2021	

- (1) Reflects Project Schedule associated with the Project Budget established on June 21, 2017, which was based upon the high end (P75) of the probabilistic range of most likely outcomes resulting from the Quantitative Cost and Schedule Risk Analysis.
- (2) Reflects latest published forecast with any potential schedule risk beyond this outlined in the Status update.

#### Construction Narrative:

The CH0007 contractor responsible for the Intake, Powerhouse, Spillway, and Transition Dams continued with field activities during the period, making progress in the following areas:

• Concrete pour activities continued during the period throughout the Intake, Tailrace/Draft Tube Outlet, and the North Service Bay. 11 elements were poured for a total of 536 m³. Total concrete poured in 2017 exceeded 130,000 m³, above planned for the year. As previously reported, all primary concrete in the Powerhouse is complete.

## • Powerhouse Units 1-4:

- Contractor has completed Draft tube 1 concrete stage 5 (concrete for stay ring anchors); Draft Tube 2 stages 2 and 3 concrete (secondary concrete for draft tube liner); as well as Mezzanine 2 completion of deck pours; concreting on Intake upper pours ongoing.
- o All four Draft Tubes Units transferred to Andritz.
- Work ongoing for handover of CH0007 piping work to the CH0031 Contractor for Supply and Install Mechanical and Electrical Auxiliaries (Balance of Plant).
- o Work ongoing for Intakes 1-4, and preparation for transfer to Andritz.
- o Concrete finishing ongoing along the intake wall next to line E in all units.
- Powerhouse roof base sheet complete; cap sheet installation scheduled to continue in Spring 2018.

#### Miscellaneous steel:

- o Mezzanine Steel for all Units (1-4) now complete.
- o Catwalk installation complete.
- o Stair tower No.2 steel canopy installed.
- o Removable handrails and covers at top of hoist building Intake Unit 1 installed.
- o Intake Unit 1 head gate inspection gallery platforms and ladders installed in all bays.
- o Air intake bird screens and grating installed in Intake Unit 1, Bays 1-3.
- Welding of stair tower no.13 handrails complete.

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• Paint touch ups ongoing on pipes above turbine floor (elev.6.50); and throughout mezzanine 1 roof and mezzanine 2.

Under CH0030 for Manufacturing of the Turbines and Generators, installation and construction activities are progressing at the Muskrat Falls site. At the end of the current reporting period, all 4 pits were in the possession of Andritz. At Unit 1, installation of stay ring is ongoing, with joint welding to be completed in place. At Unit 2, secondary concreting of the draft tube liner is complete, along with assembly of the circular passage liner and lowering of the liner into the pit. Bulkheads for Units 3 and 4 are being assembled in the service bay; and the lower portion of draft tube installation for Unit 3 commenced. Stator bar manufacturing is scheduled for restart in January 2018.

Contractor for Supply and Install Mechanical and Electrical Auxiliaries (Balance of Plant) under Contract CH0031 continued to progress work in the Powerhouse during the period. Architectural work at the South Service Bay mezzanine is ongoing; along with electrical work (cable tray and supports) at the Tailrace; piping at the South Service Bay, as well as HVAC work. Planning is underway to support elevator installation under Contract CH0034 scheduled to commence in January 2018.

Under Contract CH0032 for the Supply and Installation of Hydro-Mechanical Equipment, as previously reported, all winterization work at the Spillway is now complete. Work is ongoing with respect to guide installation in draft tube Units 1 / 2 North and South, and Unit 3 South water passages; draft tube crane installation is on hold pending trolley installation scheduled for Q1 2018.

Under Contract CH0009 for Construction of the North and South Dams, as previously reported, scope of work at the South Dam is complete; and roller compacted concrete (RCC) placement operations for the 2017 season at the North Dam are also complete. Construction work has stopped for the Winter season; with monitoring of cofferdam conditions, operation of the dewatering system, and maintenance of site-wide winterization works continuing.

A thermal ice cover was successfully established over the reservoir; the water level is currently maintained at 22.5m.

**Part II - LTA Construction Progress** 

Milestone Description	Initial Project Schedule	Planned (1)	Actual/Forecast	Status
Project Sanction	17-Dec-2012	17-Dec-2012	17-Dec-2012	Achieved
HVac Transmission Line Construction Complete	08-Jun-2016	31-May-2017	27-Jun-2017	Achieved; turnover of Line 3101 and 735 kV line pending.
Churchill Falls Switchyard Ready to Energize	31-May-2017	30-Nov-2017	24-Jan-2018	
Muskrat Falls Switchyard Ready to Energize	31-May-2017	30-Nov-2017	28-Feb-2018	
Ready for Power Transmission	31-May-2017	31-Dec-2017	12-Mar-2018	
Commissioning Complete- Commissioning Certificate Issued	01-Jun-2018	01-Sep-2020	01-Sep-2020	
Date Certain	28-Feb-2019	28-Feb-2021	28-Feb-2021	

<sup>(1)</sup> Reflects Project Schedule associated with the Project Budget established on June 21, 2017, which was based upon the high end (P75) probabilistic range of most likely outcomes resulting from the Quantitative Cost and Schedule Risk Analysis.

<sup>(2)</sup> Reflects latest published forecast with any potential schedule risk beyond this outlined in the Status update.

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#### Construction Narrative:

Work is continuing under Contract CD0502 for Construction of AC Substations. At Churchill Falls, fire alarm and suppression work is nearing completion; and commissioning of all systems continued during the period in preparation for energization of the new Switchyard. MV cables on transformer T2 are connected and torqued; and installation of insulating cable on MV switchgear 52-2 and SST2 is complete. At Muskrat Falls, energization of MF switchgear is complete; integration of the shunt reactor is ongoing, along with commissioning of the GIS.

All scope on both the 735 kV line and the 315 kV line from Churchill Falls to Muskrat Falls is complete, with only slack span connection to the powerhouse remaining. Mechanical and environmental completions walk downs are also complete; along with Third Party inspections. All "A" priority reclamation work has been completed, with remaining "B" priority work planned for execution in Spring 2018. Contractor continued compaction grouting remediation work at L3101-142 throughout the period. Handover to operations of TL L3102 is complete, as noted in the table above; and preparation of handover documentation for TL L3101 and the 735 kV line is ongoing. As previously reported, the final phase of concrete coring work with respect to reclamation/rework on some foundations was partially complete in June; and the correlation package (provided by Contractor) pertaining to finalization of remaining coring has been accepted by Devco, with any additional concerns identified to be addressed through warranty provisions.

## SCHEDULE "G"

# Part I - Muskrat Additional Material Project Documents

There were no Additional Material Project Documents entered into since the Previous Construction Report.

# Part II - Labrador Transco Additional Material Project Documents

There were no Additional Material Project Documents entered into since the Previous Construction Report.