
Nova Scotia Utility and Review Board

IN THE MATTER OF

*The Public Utilities Act, R.S.N.S 1989, c. 380, as amended
and the*

*The Maritime Link Act, S.N.S 2012 c.9
and the*

Maritime Link Cost Recovery Process Regulations, N.S. Reg. 189/2012

NSPML Interim Cost Assessment Application

December 16, 2016

Table of Contents

1.0 Introduction And Approval Requested 4

2.0 Background – Legal And Regulatory Context..... 9

 2.1 Original UARB ML Approval and NSPML Budget..... 9

 2.2 Public Utilities Act; Maritime Link Act and Regulations..... 10

 2.3 NS Power’s Fuel Stability Plan..... 13

3.0 Quarterly Reports..... 17

4.0 Construction Of The Maritime Link And The Significance Of Meeting Schedule..... 19

5.0 Components Of The Interim Assessment 22

 5.1 Capital Cost Recovery Via Depreciation 23

 5.2 Operating Costs 24

 5.3 Debt Financing Costs 24

 5.3.1 Interest Costs 24

 5.3.2 Recovery of Deferred Financing Costs 25

 5.4 Equity Financing Costs 26

6.0 Benefits To Customers From The Maritime Link 27

7.0 Request For Relief 34

LIST OF APPENDICES

- Appendix A December 2016 Quarterly Report
- Appendix B Direct Evidence of John J. Reed
- Appendix C Nalcor briefing of June 24, 2016 regarding Muskrat Falls

1 **1.0 INTRODUCTION AND APPROVAL REQUESTED**

2
3 The Maritime Link remains on schedule for commissioning in Q4 2017¹ and to be in service
4 by January 1, 2018, on time and within budget². This Application requests that the UARB
5 approve a forecasted interim assessment of the Maritime Link (Interim Assessment) to be
6 paid to NSP Maritime Link Inc. (NSPML) by Nova Scotia Power Inc. (NS Power),
7 commencing on January 1, 2018, and to be in place until the Board approves a final cost
8 application for the Maritime Link Project³, anticipated to be brought before the Board in
9 2018.

10
11 In 2013, the Nova Scotia Utility and Review Board (UARB or Board) approved the Maritime
12 Link Project as the lowest long-term cost alternative for electricity for ratepayers in the
13 Province of Nova Scotia⁴. In alignment with the Board’s decision, NSPML is committed to
14 managing the construction timetable and budget for the Project in a manner that preserves
15 and protects the benefits of the Maritime Link for customers.

16
17 This approval is sought on the basis that NS Power will have use of the Maritime Link and
18 commence payments to NSPML on January 1, 2018. At such time, the Maritime Link will be
19 in service and available to provide value and benefit to NS customers.

20 The Maritime Link will provide access to cleaner and more reliable energy to meet the
21 needs of Nova Scotia customers. In addition to the contractually guaranteed supply of
22 the NS Block⁵, the Maritime Link will provide NS Power with greater access to market

¹ NSPML Quarterly Report Q4 2016, December 14, 2016, s. 2.1.

² NSPML Quarterly Report Q4 2016, December 14, 2016, s. 3.

³ Sometimes referred to herein as Maritime Link or the Project and defined by the Maritime Link Act, Chapter 9 of the Acts of 2012, as amended by 2013, c.40, Section 2B as “a new high voltage direct current transmission system and related components, including grounding systems, and includes (i) direct current converter stations in Newfoundland and Labrador, and in Cape Breton, Nova Scotia, together with the subsea cables and high voltage direct current transmission lines connecting the converter stations, (ii) an alternating current transmission line connecting the converter station in Newfoundland and Labrador with the Newfoundland Island Interconnected System, and (iii) any additional transmission infrastructure required in order to interconnect with the Newfoundland Island Interconnected System and the Nova Scotia Transmission System.”

⁴ 2013 NSUARB 242 (M05419).

⁵ The Nova Scotia Block is the energy (approximately 0.9 TWh and 0.2 TWh of Supplemental Energy annually)

1 priced energy, and an opportunity to import economic energy from Newfoundland and
2 Labrador by virtue of the Energy Access Agreement which gives a contractual right to
3 market priced energy⁶. The Maritime Link provides greater flexibility and diversification
4 to NS Power and will enhance long term energy security and reliability for NS customers.
5 The Maritime Link provides a strategic transformational opportunity for enhanced access
6 to competitive energy markets and should be made available for the benefit of Nova
7 Scotia customers immediately upon commissioning.

8
9 In June of 2016 Nalcor announced a delay in the commencement of the Muskrat Falls
10 Generating Station and therefore a delay in the commencement of the NS Block.

11 NSPML understands that customers may have questions about the timing of
12 commissioning of the Maritime Link on January 1, 2018 and the commencement of
13 payments to NSPML, when the benefit of the NS Block will commence as much as two
14 years later. This Application, including expert evidence of John Reed, explains that:

- 15
16 • The Maritime Link is a complex mega-project that has required a significant
17 coordination of major global and local supplier contracts. Any delay or
18 amendment to these contracts to artificially align the Maritime Link with the NS
19 Block will cause higher capital and financing costs to customers.
- 20 • The NS Block is a contractually guaranteed benefit to customers for 35 years, no
21 matter when it starts. Delay does not mean a loss of that benefit to customers.
- 22 • As soon as the Maritime Link is put into service, it can be used by NS Power to
23 conduct market-priced energy transactions. It was anticipated by the agreements
24 between Emera and Nalcor that the transmission assets could be available before
25 the generating assets, and the Energy and Capacity Agreement provides for
26 market-priced energy transactions in that situation.

from the Muskrat Falls Plant to be provided to NS Power under the Energy and Capacity Agreement with Nalcor for 35 years as part of the 20 for 20 Principle. The Supplemental Energy block will be delivered over the first five years of the Maritime Link's operation and is considered part of the Nova Scotia Block. Surplus Energy is energy which NS Power may purchase from Nalcor at market rates in accordance with the Energy Access Agreement.

⁶ On November 29, 2013, the Energy Access Agreement was confirmed to satisfy the Board's condition that NSPML acquire the right to access Nalcor Market-priced energy in matter M05419 (2013 NSUARB 242).

- 1 • Being able to use the Maritime Link gives NS customers the opportunity to obtain
2 value right away – having the asset sit idle means that NS customers get no
3 benefit from the asset even though financing costs would continue to mount.
- 4 • The Maritime Link provides many other system benefits for NS Power and
5 customers in addition to the NS Block. These benefits, together with the long
6 term benefit of the NS Block, make the Maritime Link immediately used and
7 useful in in regulatory terms and for accounting purposes under NSPML
8 accounting policies.
- 9 • Starting January 2017, customer rates will include recovery of the costs of the
10 Maritime Link, by virtue of the Board-approved NS Power Fuel Stability Plan.
11 Changing the assessment amount relating to the Maritime Link will increase total
12 costs to customers over the life of the Project.
- 13 • Changing the assessment amount from what has already been approved by the
14 Board for recovery from NS Power customers would undermine the Fuel Stability
15 Plan, which was established in accordance with legislation designed to provide
16 low and stable rates for customers. If the assessment is not paid to NSPML,
17 customer rates would need to be adjusted in the short term, and increased more
18 than otherwise necessary beginning in 2020. In other words, rate stability would
19 no longer be in place and customers would experience a significant increase in
20 2020 to accommodate the change. An objective of the rate stability legislation, to
21 smooth the recovery of the Maritime Link costs over the Fuel Stability Period,
22 would be undermined.

23
24 NSPML respectfully submits that delaying the start of the Maritime Link or changing the
25 payment schedule in the first two years would not be in the customers’ best interest. On
26 January 1, 2018 NS Power and its customers will immediately start to benefit from use of
27 the Maritime Link, and total capital and financing costs will be kept as low as possible.
28

1 NSPML's Interim Assessment request mirrors the assessment amounts approved by the
2 Board for recovery by NS Power as part of NS Power's Fuel Stability Plan Application⁷.
3 In that Application, NS Power included an amount for the recovery of the anticipated
4 assessment for the Maritime Link, payable to NSPML, in its Base Cost of Fuel in 2018
5 and 2019, which was smoothed over NS Power's three-year Rate Stability Period⁸. As
6 noted by NS Power in that Application, the recovery of Maritime Link costs in this
7 manner enables the costs of this asset to be recovered in a predictable and affordable
8 manner for customers⁹. Approval of this Interim Assessment Application will ultimately
9 preserve the long-term benefits of the NS Power Fuel Stability Plan for customers.

10
11 This Interim Assessment Application is limited to a request for the Board's approval of
12 the forecasted assessment for the Maritime Link, and payment of forecasted assessment
13 amounts from NS Power to NSPML. NSPML is not requesting final approval of the
14 actual capital costs of the Maritime Link. As the Maritime Link Project is in the midst of
15 the construction phase, the final capital costs of the Maritime Link are not known at this
16 time. Using an Interim Assessment beginning when the Maritime Link is in service and
17 providing for a final capital cost assessment once the Project is complete will allow the
18 UARB to fully assess the costs of the Project. NSPML intends to file a final capital cost
19 application following commissioning of the Project and other Project-related close out
20 activities, and once the final costs for the Project are known in 2018. NSPML commits to
21 provide a detailed reporting of the components and breakdown of the actual costs of the
22 entire completed Project when the actual costs of the Project are known, to ensure the
23 final costing of the Project can be reviewed in a manner that is clear and transparent
24 to the Board and stakeholders. Customers are protected through this process, because
25 NSPML's final cost application will provide the opportunity for a dollar-for-dollar true
26 up of actual Project costs to the extent there are variances from the forecast Project costs
27 included in this Application.

⁷ 2016 NSUARB M07348.

⁸ NS Power, 2017-2019 Fuel Stability Plan Application, March 7, 2016 (M07348), page 10, lines 18 to 20.

⁹ NS Power, 2017-2019 Fuel Stability Plan Application, March 7, 2016 (M07348), page 11, lines 7 to 10.

1 By this Application, NSPML respectfully requests that the Board:
2

3 1. Issue an order pursuant to section 64 of the *Public Utilities Act* and section 8(1) of the
4 *Maritime Link Cost Recovery Process Regulations*, setting an Interim Assessment
5 against Nova Scotia Power in the amounts of \$162 million for 2018 and \$164 million
6 for 2019, as outlined herein and consistent with NS Power's Base Cost of Fuel (BCF)
7 for those periods, on the basis that NS Power will have use of the Maritime Link and
8 approving a schedule of monthly charges payable by NS Power to NSPML
9 commencing January 1, 2018; and
10

11 2. Direct NSPML to file final Maritime Link costs for approval following
12 commissioning, once the final costs for the Project are known.

1 **2.0 BACKGROUND – LEGAL AND REGULATORY CONTEXT**

2
3 **2.1 Original UARB ML Approval and NSPML Budget**

4
5 On November 29, 2013, the Board approved the Maritime Link Project as the lowest
6 long-term cost alternative for electricity for ratepayers in the Province of Nova Scotia¹⁰.

7
8 The Board’s approval of the Maritime Link included the approval of capital cost of the
9 Maritime Link up to \$1.58 billion, including a requested variance of \$60 million, and the
10 accumulation of allowance for funds used during construction (AFUDC) up to and
11 including December 31, 2017 or the in-service date of the Maritime Link, whichever is
12 sooner¹¹. Consistent with the original Project approval, NSPML’s forecasted Interim
13 Assessment provides that AFUDC is capitalized to December 31, 2017 and the Maritime
14 Link goes in service on January 1, 2018. This is also consistent with the assumptions
15 used by NS Power in its Fuel Stability Plan¹².

16
17 The Board made the importance of managing cost and schedule an imperative for
18 NSPML, noting that recording AFUDC beyond December 31, 2017 would be subject to
19 the Board’s review of NSPML’s management of the construction scheduling and related
20 risks applicable to the Project¹³. In accordance with this aspect of the Board’s approval of
21 the Maritime Link, all major contracts have been integrated in terms of schedule in order
22 to deliver the Project on time and within budget by end of Q4 2017¹⁴ and in order to
23 ensure value is maintained for the benefit of Nova Scotia customers.

24 In 2014, NSPML’s capital cost budget was set at \$1.577 billion (excluding financing
25 costs). Based on that capital cost budget, given the “20 for 20 Principle”¹⁵, NS Power

¹⁰ 2013 NSUARB 242 (M05419).

¹¹ 2013 NSUARB 154 (M05419) at para. 338.

¹² NS Power, 2017-2019 Fuel Stability Plan Application, March 7, 2016 (M07348), page 65, lines 20 to 22.

¹³ 2013 NSUARB 154 (M05419) para 338.

¹⁴ NSPML Quarterly Reports and NSPML Technical Conference, February 23, 2016.

¹⁵ The 20 for 20 Principle is defined as follows in the Maritime Link application: “In exchange for 20 percent of the electricity from Muskrat Falls over the agreed-upon term, NSPML is responsible for 20 percent of the LCP Phase 1 and Maritime Link facilities costs.” Maritime Link Project Application, January 28, 2013, page 7

1 customers will pay no more than \$1.555 billion (excluding financing costs) for the capital
2 cost of the Maritime Link. The Interim Assessment requested in this Application is based
3 upon this cost and schedule and as transparently reported in the status reports filed with
4 the Board on a quarterly basis, as ordered by the Board in the Supplemental Decision on
5 the Maritime Link (“Quarterly Reports”)¹⁶.

6
7 **2.2 Public Utilities Act; Maritime Link Act and Regulations**

8
9 NSPML is a separate legal entity from NS Power, and was formed solely for the
10 purpose of constructing, operating and maintaining the Maritime Link. Pursuant to the
11 *Maritime Link Act*, NSPML is a public utility in the Province of Nova Scotia,
12 regulated by the UARB.

13
14 Section 64 of the *Public Utilities Act* sets out the Board’s authority to approve a
15 schedule of rates and charges of a utility, and states as follows:

16
17 64 (1) No public utility shall charge, demand, collect or receive any
18 compensation for any service performed by it until such public utility has
19 first submitted for the approval of the Board a schedule of rates, tolls and
20 charges and has obtained the approval of the Board thereof.

21
22 (2) The schedule of rates, tolls and charges so approved shall be filed with
23 the Board and shall be the only lawful rates, tolls and charges of such
24 public utility until altered, reduced or modified as provided in this Act.

25
26 NS Power is NSPML’s only customer, and therefore the customers of NS Power are the
27 ultimate customers of NSPML and NSPML’s only source of revenue. Establishing
28 NSPML as a separate legal entity from NS Power enabled financing requirements
29 associated with the Federal Loan Guarantee (FLG) from the Government of Canada to be
30 met. Maritime Link debt financing is provided through the FLG with the Project assets

of 151 (M05419).

¹⁶ The Quarterly Reports are available on the Emera Newfoundland & Labrador website at <http://www.emeranl.com/en/home/themaritimelink/regulatory-process/UARB-reporting.aspx>, as well as through the UARB website.

1 being pledged as security for the loan. The creation of the single-purpose entity helps to
2 ensure there is no co-mingling of assets or debts between NSPML and NS Power or other
3 entities. The FLG has reduced the cost of borrowing for the Project, saving more than
4 \$250 million (more than \$100 million on a net present value basis)¹⁷. These cost savings
5 will be fully passed on to Nova Scotia electricity customers.

6
7 As NSPML's sole purpose is to construct, operate and maintain the Maritime Link for
8 the benefit of NS Power customers, the NSPML Interim Assessment, which is paid by
9 NS Power, will be recovered by NS Power from NS Power customers pursuant to the
10 *Maritime Link Cost Recovery Process Regulations*, N.S. Reg. 189/2012. Section 8 of
11 those Regulations states:

12
13 **Assessment and costing approval**

14 8(1) Before receiving energy under the Nalcor Transactions, an applicant
15 must set an assessment against Nova Scotia Power Incorporated for the
16 recovery of all approved Project costs, and must apply to the Review
17 Board for an approval of the assessment under Section 64 of the Public
18 Utilities Act.

19
20 (2) Nova Scotia Power Incorporated is entitled to recover through its rates
21 any assessment approved by the Review Board in respect of the Maritime
22 Link Project.

23
24 This Interim Assessment Application is made in accordance with the requirements of
25 these Regulations and Section 64 of the *Public Utilities Act*, and as noted above, is
26 consistent with the information presented by NS Power in its Fuel Stability Plan
27 Application and by NSPML in its Quarterly Reports.

28 Following commissioning and other project-related close-out activities, NSPML will file
29 its final Project capital costs with the Board. At that time the Board will be able to set
30 NSPML's capital cost assessment associated with the construction of the Project.

31
32 The Interim Assessment is not only necessary to meet the above-noted legislative
33 requirements. In advance of NSPML's final Project costs being known, as a stand-alone

¹⁷ 2013 NSUARB 154, p. 87

1 Project utility, NSPML will need to recover the Interim Assessment to be able to fund
2 operations and pay financing costs¹⁸. Without the approval of the Interim Assessment,
3 there would be no revenues to cover these costs and the Maritime Link would not be
4 available to NS Power to use for the benefit of its customers. The timely recovery of the
5 Interim Assessment, which is supported by the financial information NSPML has been
6 filing quarterly with the Board and approved monthly by Canada's Independent
7 Engineer¹⁹, will ensure the Maritime Link is immediately available to NS Power upon
8 commissioning, thereby allowing NS Power to optimize its use for Nova Scotia
9 customers. Moreover, the timely recovery of the Interim Assessment will also allow the
10 provisions of the FLG to be met for and its benefits to be preserved for NS customers.

¹⁸ NSPML Application for Approval of AFUDC Accounting Policy, February 29, 2016 NSUARB IR 006 a), page 2, lines 11 through 15; NSUARB IR 006 b), February 29, 2016, page 3, lines 10 through 13; and NSUARB IR 006, Attachment 1, ML Credit Agreement, sections 3.1 and 3.2.

¹⁹ The Independent Engineer is retained throughout the construction period and is undertaking monthly reviews, semi-annual updates and detailed annual reviews of the construction. On a monthly basis the construction draws require sign-off by the Independent Engineer. Attachment 3 to the Q4 2015 Quarterly Report is a Draw Confirmation Certificate by Independent Engineer for Canada, which is an example of the document used to provide confirmation from the Independent Engineer that the Maritime Link Project remains on schedule and on budget.

1 2.3 **NS Power’s Fuel Stability Plan**

2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27

As stated by NS Power in its Fuel Stability Plan application, “the [*Electricity Plan Implementation (2015) Act*, S.N.S. 2015, c.31 (EPIA)] encapsulates key aspects of the government’s provincial energy plan and assists the Company in providing rate stability for FAM customers during the Rate Stability Period and looking out to 2020 and beyond.”²⁰

As a component of its Fuel Stability Plan made pursuant to section 4(1)(e) of the EPIA, NS Power sought Board approval of a forecast of the amounts to be recovered in respect of the anticipated assessment against it pursuant to Section 5E of the Maritime Link Act (for the purposes of NS Power’s BCF, the “Anticipated Assessment”) and authority to incorporate those costs into customer rates through its 2017 – 2019 BCF under the Fuel Adjustment Mechanism (FAM)²¹.

Sections 4(1)(e) and 4(2) of the EPIA outline the Fuel Stability Plan requirements respecting the Maritime Link:

- 4(1) The Fuel Stability Plan must include:
 - (e) a forecast of the amounts to be recovered through Nova Scotia Power's rates in respect of the anticipated assessment against it pursuant to Section 5E of the Maritime Link Act.
 - (2) The recovery of forecast amounts in clause (1)(e) must be included in the base cost of fuel during the Rate Stability Period and is subject to subsection 6(2).

²⁰ NS Power, 2017-2019 Fuel Stability Plan Application, March 7, 2016 (M07348), page 13, lines 8 to 10.
²¹ NS Power, 2017-2019 Fuel Stability Plan Application, March 7, 2016 (M07348), page 63, lines 14 to 18.

1 Section 6(1)(a) of the EPIA further states:
2

3 6 (1) The Board shall approve the Fuel Stability Plan, subject to
4 any changes, terms or conditions or other requirements considered
5 appropriate by the Board and, without limiting the generality of the
6 foregoing, approve:
7

8 (a) a base cost of fuel under the Fuel Adjustment Mechanism for
9 each calendar year during the Rate Stability Period, including an
10 amount for the recovery of the anticipated assessment against
11 Nova Scotia Power pursuant to Section 5E of the Maritime Link
12 Act.
13

14 As noted by NS Power in its Fuel Stability Plan application in M07348, “[t]he EPIA
15 directs considerable flexibility for addressing the costs of the Maritime Link Project
16 within [NS Power’s] Fuel Stability Plan and provides that such costs can be allocated
17 among customers on any basis subject to approval of the Board”²². The EPIA also
18 permits the “early inclusion or deferral” of the Anticipated Assessment, pursuant to
19 sections 4(4) and (5) of the EPIA which state:
20

21 (4) Nova Scotia Power may include a proposal to phase in the
22 recovery of the assessment through its rates for a period not
23 exceeding five years.
24

25 (5) The phase-in may be accommodated by the early inclusion or
26 deferral in rates of a portion of Nova Scotia Power’s costs relating
27 to the Assessment or by a similar mechanism.
28

29 In its July 19, 2016 decision, for the purposes of setting NS Power’s Base Cost of Fuel,
30 the Board approved the Anticipated Assessment for the Maritime Link, inclusive of
31 depreciation as set out in NS Power’s BCF application, as \$162 million for 2018, and
32 \$164 million for 2019²³. Per the requirements of the EPIA, these Anticipated Assessment
33 amounts were smoothed and included in rates over the three-year Rate Stability Period.
34 Subject to Board approval of this Application, NS Power contemplates payments to
NSPML to commence on January 1, 2018, “when the Link goes into service and becomes

²² NS Power, 2017-2019 Fuel Stability Plan Application, Reply and Refresh (M07348), page 20, lines 9 to 13.

²³ 2016 NSUARB 129 (M07348).

1 available for use by NS Power for the benefit of its customers.”²⁴ The Board accepted
2 the Anticipated Assessment outlined by NS Power and confirmed in the Consensus
3 Agreement filed in M07348 and found it to be appropriately reflected in rates²⁵. The
4 Board noted it was “satisfied that the Consensus Agreement is in the public interest, that
5 it satisfies the requirements of the *Energy Plan Implementation (2015) Act*, and that it
6 should be approved”.²⁶ Accordingly, per the requirements of the EPIA, the Anticipated
7 Assessment amount was approved to be included in rates and applied in equal annual
8 increments over the calendar years 2017, 2018, and 2019.

9 In granting the foregoing approval, the Board noted that several matters remained
10 uncertain at the moment, such as the commencement date of the NS Block. However, the
11 Board indicated it was satisfied such matters could be dealt with in future proceedings to
12 ensure ratepayers are fairly assessed.²⁷ NSPML respectfully submits that any matters that
13 remain uncertain are best addressed at the time of NSPML’s final cost filing as part of a
14 detailed review of the entire completed Project. At such time, NSPML will provide the
15 Board with the details necessary to make a final assessment of the Project. In the
16 meantime, revenue recovery of the Interim Assessment by NSPML, effective January 1,
17 2018 when the Maritime Link is scheduled to be in service and available to optimize its
18 benefits to customers, is consistent with the EPIA, *The Maritime Link Act* and the
19 *Maritime Link Cost Recovery Process Regulations*. This Project-specific legislation and
20 regulations provide a framework for a predictable and timely regulatory review process
21 which supports the public interest benefits of cleaner, reliable energy with predictable
22 and stable fuel costs and electricity rates.

23
24 As approved by the Board, NS Power’s Anticipated Assessment of the Maritime Link
25 will be recovered in customer rates by NS Power in equal annual increments over the
26 calendar years 2017, 2018 and 2019²⁸. Under this Interim Assessment Application,

²⁴ NS Power, 2017-2019 Fuel Stability Plan Application, Reply and Refresh (M07348), page 20, lines 31, 31 and page 21, lines 1 and 2.

²⁵ 2016 NSUARB M07348 at para. 22.

²⁶ 2016 NSUARB M07348 at para. 32.0.

²⁷ 2016 NSUARB M07348 at para 23.

²⁸ 2016 NSUARB M07348 at para 4.

NSPML

1 NSPML now seeks the Board's approval to allow NS Power to commence payment to
2 NSPML of a schedule of charges for recovery of the Interim Assessment of the Maritime
3 Link of \$162 million for 2018 and \$164 million for 2019. NSPML proposes that such
4 charges be made payable on a monthly basis effective January 1, 2018 and January 1,
5 2019 respectively. NSPML also proposes to issue 12 monthly invoices each year to
6 recover these total amounts.

3.0 QUARTERLY REPORTS

NSPML's forecast of the Interim Assessment is supported by NSPML's Quarterly Reports. The most recent Quarterly Report filed by NSPML with the Board dated December 14, 2016 (December 2016 Quarterly Report) is attached to this Application as Appendix "A". All Quarterly Reports which NSPML has filed with the Board are publicly available and may be found on the Board's website. NSPML's Quarterly Reports provide the Board and stakeholders with an update on the Maritime Link Project schedule, including detailed attachments outlining the progress of the various Project decision gates and milestones, per Sections 2.1 to 2.3 and Attachments 1 and 2 of the December 2016 Quarterly Report. The Quarterly Reports also track Maritime Link capital costs, actual and forecast (2011 – 2017) as outlined in Sections 3 and 4 of the December 2016 Quarterly Report, consistent with the methodologies used in the costs forecast represented in the Maritime Link Application²⁹. Figure 1 below is from the December 2016 Quarterly Report and provides the cost summary for the Maritime Link for actual costs incurred to the end of Q3 2016 and forecast costs for the remainder of the Project's construction phase.

Figure 1 – December 2016 Updated Maritime Link Cost Summary

(000's of Canadian Dollars)	Actual Costs							Forecast		Total Project Estimate at Completion
	2011-2013	2014	2015	Q1 2016	Q2 2016	Q3 2016	Total Project to Date	Q4 2016	2017	
Emera NL Project Management Costs	44,379	42,315	24,599	6,818	8,275	4,038	130,424	8,748	39,737	178,909
Nalcor Project Support Costs	-	15,232	425	(20)	241	255	16,134	65	135	16,334
Construction and Engineering Initiatives	14,975	167,980	259,750	83,891	89,966	161,024	777,586	129,897	315,053	1,222,536
Environmental Approval	2,651	4,378	1,082	81	255	619	9,066	2,672	9,642	21,379
Submarine and related	3,359	83,797	74,439	9,946	23,534	15,115	210,191	5,804	106,823	322,817
Converters, structures, and other ancillary equipment	1,517	48,747	106,195	40,317	47,347	102,771	346,894	53,718	138,918	539,530
AC and DC Transmission	7,448	31,057	78,035	33,547	18,830	42,519	211,437	67,703	59,670	338,810
Total	59,354	225,527	284,774	90,689	98,482	165,317	924,143	138,710	354,925	1,417,779
Escalation								-	33,954	33,954
Contingency								-	125,621	125,621
Grand Total	59,354	225,527	284,774	90,689	98,482	165,317	924,143	138,710	514,500	1,577,355

²⁹ Maritime Link Project Application, January 28, 2013, Appendix 4.01 (M05419).

1
2 The Maritime Link costs are subject to the oversight of the Independent Engineer acting
3 for Canada, and the forecast remains within the amount approved by the Board. As a
4 component of the Quarterly Reports, actual AFUDC is being tracked and recorded
5 monthly, and remains within the \$230 million amount approved by the Board in respect
6 of the Project³⁰. The forecasts outlined in the Quarterly Reports confirm that the Project
7 remains on schedule for commissioning and commencement of operations scheduled for
8 Q4 2017 at a forecast capital cost of no more than \$1.577 billion which, as noted above,
9 translates to no more than \$1.555 billion cost to NS customers under the “20 For 20
10 Principle”. The Interim Assessment included in this Application is based on the forecast
11 costs included in the Quarterly Reports.

12
13 Once NSPML files its final costs with the Board, a final assessment of Maritime Link
14 Project costs can be established. At that time, differences in the Interim Assessment
15 payable to NSPML will be trued up so that NS Power and customers pay no more and no
16 less than the actual approved costs to build the Maritime Link. NS Power’s recovery of
17 Project costs through the FAM provides an additional mechanism to ensure that
18 customers pay the actual costs of the Project by truing up the revenue recovery for the
19 Maritime Link, as necessary, through the annual FAM adjustment process (Annual
20 Adjustment and Balance Adjustment) and going forward when NS Power returns in
21 future to reset its BCF.

³⁰ NSPML Quarterly Report Q4 2016, December 15, 2016, s. 3.0.

1 **4.0 CONSTRUCTION OF THE MARITIME LINK AND THE SIGNIFICANCE OF**
2 **MEETING SCHEDULE**

3

4 **4.1 Procurement of Key Project Contracts**

5

6 As noted by the Board in its Decision to approve the Project, the Maritime Link is “a
7 complex and challenging undertaking” involving “a lengthy subsea cable crossing in a
8 rugged marine environment, a mix of relatively new HVdc and traditional AC
9 technologies, and a range of individual components which must be carefully integrated to
10 ensure that the electrical network continues to be fully functional and operates
11 economically in a highly reliable manner.”³¹

12

13 In order to construct the Maritime Link on time and within budget, in accordance with the
14 approval given by the Board in November 2013, NSPML has entered into all of its major
15 contracts, which total more than \$1.1 billion, with a combination of global and local
16 contractors and suppliers³². These major project contracts include the construction and
17 supply of the HVdc converter stations and cable systems including two subsea cables
18 each approximately 170 km in length, 350 km of DC and AC transmission line, and other
19 critical Maritime Link infrastructure³³.

20

21 The scheduled work of the contractors and suppliers engaged on the Project is carefully
22 aligned and integrated so that the Maritime Link can be installed, tested and
23 commissioned to meet the target date of Q4 2017. The need for careful coordination
24 among Maritime Link contractors and suppliers is further heightened in light of the
25 limited number of suppliers of HVdc technology around the world, and the demand for
26 such technology. These market demands have driven the Maritime Link Project team to
27 develop and maintain a robust and carefully-staged procurement program to best position
28 NSPML to maintain the manufacturing slots needed to ensure the timely availability of

³¹ 2013 NSUARB 154 (M05419) para 287.

³² NSPML Technical Conference, February 23, 2016.

³³ NSPML Technical Conference, February 23, 2016.

1 the required HVdc cable and converter systems and cable installation vessel availability
2 for the Maritime Link. NSPML maintains a comprehensive quality assurance and quality
3 control program involving continuous surveillance during critical activities, testing and
4 repairs, as well as visits to contractor sites across the globe; to ensure all contractor work
5 performed complies with project quality standard requirements while maintaining the
6 approved schedule.

7
8 Delays in construction of any part of the Maritime Link would lead to claims for added
9 costs from contractors working on other parts of the Maritime Link.

10
11 Given the substantial coordination and integration necessary to bring the Maritime Link
12 in on schedule, the Maritime Link project team is focused on the careful management of
13 contractor performance in order to ensure Nova Scotia customers receive the best value
14 from the Project as approved. As a key part of that effort, NSPML's Contract
15 Administration Team is focused on claims mitigation and management of change in the
16 administration of major project contracts in recognition of the need to ensure contractors
17 are meeting the obligations of their contracts on the approved schedule and within
18 budget.

19
20 In June of 2016 Nalcor announced a change to the expected completion date of the
21 Muskrat Falls Generating Station and Labrador Island Link. At that time, NSPML
22 learned that the commencement of the NS Block is now expected to occur between Q3
23 2019 and Q2 2020³⁴. NSPML considered whether it would be in the best interest of
24 customers to delay the Maritime Link construction schedule in order to align the
25 commissioning of the Maritime Link with the commencement date of the NS Block.
26 Given the substantial coordination and integration necessary to install, test and
27 commission the Project to meet the target date of Q4 2017, a decision to delay the
28 Maritime Link to coincide with the commencement of the NS Block would result in

³⁴ June 24, 2016 Press Release from Nalcor. Please refer to Appendix C of this Application for a copy of the Nalcor graphic showing anticipated dates for the Nalcor assets.

1 higher capital and financing costs to customers. Revisions to contractor scheduling and
2 integration arrangements, including additional contractor demobilization and
3 remobilization costs, and the need to re-negotiate warranties and other established terms
4 would add to the capital costs of the Project. Such a delay would increase financing costs
5 since a higher amount of capital cost would need to be financed, and all costs would need
6 to be financed for a longer period of time.

7
8 Moreover, NSPML understood that making changes mid-construction would require
9 many costly adjustments with contractors and suppliers. For example, at the time the
10 revised commencement date for the NS Block became clear, significant engineering and
11 manufacturing of long-lead components of the Project had already begun and were in
12 preparation and testing phases in many cases. Key components such as the HVdc cables
13 were well into manufacturing phases and major transformers and converter components
14 were complete manufacturing. The cable installation vessel had been booked years in
15 advance as part of the supplier selection process to ensure the current schedule could be
16 met. In all of these circumstances, any change to the construction schedule for the
17 Maritime Link would increase the overall long-term capital and financing costs of the
18 Project. Such a change would also undermine rate stability for Nova Scotia customers
19 since a delay and the consequential higher costs for the Maritime Link would mean
20 changes to the Board-approved NS Power Rate Stability Plan followed by higher levels
21 of cost recovery beginning in 2020.

22
23 Simply stated, the longer it takes to construct the Maritime Link, the more costly the
24 Project would be for customers. Delaying the commencement of the Maritime Link is
25 not a good idea for customers because delay causes higher costs.

5.0 COMPONENTS OF THE INTERIM ASSESSMENT

The components of the Interim Assessment are as set out in Figure 2 below. These are the same components as approved by the Board in the Anticipated Assessment set out in NS Power's Fuel Stability Plan Application.

Figure 2 – Breakdown of Maritime Link Interim Assessment

Description	2018 (\$ Millions)	2019 (\$ Millions)
Depreciation	51	51
Operating & Maintenance	14	18
Debt Financing Costs	46	44
Equity Financing Costs	51	51
Total Interim Assessment	162	164

The information contained in Figure 2 above compares to the estimated Revenue Requirement included in NSPML's original application for approval of the Maritime Link of \$160 million and \$165 million in 2018 and 2019, respectively³⁵. NSPML has continued to manage the Project in accordance with the Board's original approval of Maritime Link.

NSPML anticipates entering into a standard agreement and invoice between NSPML and NS Power to document the recovery of these costs for the Maritime Link by NSPML.

NSPML's Interim Assessment, as approved by the Board, will begin to be paid as soon as the Maritime Link is in service, and as noted above, the amount is supported by the cost information that NSPML has been filing in its Quarterly Reports and which is also reviewed monthly by the Independent Engineer for Canada.

Any variation between NSPML's Interim Assessment approved in this Application and the actual capital cost of the Maritime Link as determined by the UARB pursuant to NSPML's approved final cost filing will be trued up following commissioning of the

³⁵ NSPML, Maritime Link Project Application, January 28, 2013 (M05419), Ex. M-2.

1 Project and other Project-related close out activities. This variation could be attributable,
2 for example, to a variance in final costing amounts.

3
4 The individual components of the Interim Assessment as outlined in Figure 2 above are
5 further described below and remain unchanged from what was included in NS Power's
6 Fuel Stability Plan Application.

7

8 **5.1 Capital Cost Recovery Via Depreciation**

9

10 As noted above, NSPML is forecasting the total capital cost of the ML to not exceed
11 \$1.555 billion (considering the "20 For 20 Principle") plus AFUDC which is forecast not
12 to exceed \$230 million.

13

14 NSPML is forecasting that the Maritime Link will be commissioned and placed into
15 service by January 1, 2018. As a result, accounting depreciation of the Maritime Link is
16 forecast to commence at that time and is included in the Interim Assessment in each of
17 2018 and 2019.

18

19 NS Power's Accounting Policy and Procedures Manual Policy 5300 Depreciation and
20 Amortization Expense, which is followed by NSPML, requires that an asset begin to be
21 depreciated when the asset is placed in service³⁶.

³⁶ On June 1, 2016, the Board approved NSPML's Accounting Policy and Procedures Manual in matter M07254.

1 **5.2 Operating Costs**

2

3 After construction, NSPML will incur operating and maintenance costs for the Maritime
4 Link. Costs for maintenance, insurance, inspection, vegetation management, supervision
5 of assets and similar items are a necessary component of the operation of any major
6 utility asset. NSPML has forecast the operating and maintenance costs at \$14 million in
7 2018 and \$18 million in 2019. The breakdown of these costs was provided to the Board
8 during the NS Power BCF Application as UARB IR-17³⁷.

9

10 **5.3 Debt Financing Costs**

11

12 The Interim Assessment includes a Debt Financing Cost amount of approximately \$46
13 and \$44 million in each of 2018 and 2019 respectively. This cost is comprised of two
14 components:

15

- 16 i) Annual net interest of approximately \$42-44 million; and
- 17 ii) Recovery of deferred financing charges of approximately \$1.5 million.

18

19 **5.3.1 Interest Costs**

20

21 The debt financing of the Maritime Link is based on a \$1.3 billion bond offering which
22 was provided at a locked-in coupon interest rate of 3.50 percent for the full life of the
23 Maritime Link. This fixed 3.50 percent coupon interest rate is payable on a semi-annual
24 basis³⁸.

³⁷ NS Power, 2017-2019 Fuel Stability Plan Application, March 7, 2016 (M07348), NSPI (NSUARB) IR-17 b).
³⁸ NSPML Application for Approval of AFUDC Accounting Policy, February 29, 2016 NSPML (NSUARB) IR-6 a), page 2, lines 17 through 19; NSPML (NSUARB) IR-6 b), February 29, 2016, page 3, lines 10 through 13; and NSPML (NSUARB) IR-6, Attachment 1, ML Credit Agreement, section 3.1 and NSPML Technical Conference, February 23, 2016.

1 The cost of debt financing in each of 2018 and 2019 includes the coupon interest cost of
2 \$45.5 million (\$1.3 billion x 3.5 percent). When netted with interest revenues earned on
3 cash balances, including a FLG required Debt Service Reserve Account, the net interest
4 expense is forecast to be the range of \$42 to \$44 million.

5
6 This bond offering was completed using the Maritime Link Financing Trust, a special
7 purpose vehicle that was formed exclusively to receive and distribute all federally
8 guaranteed debt associated with the Maritime Link. Since all bond proceeds were
9 received upon completion of the financing in late April, 2014, the funds are invested in
10 securities approved by the Government of Canada until they are required for payment of
11 Maritime Link costs³⁹.

13 **5.3.2 Recovery of Deferred Financing Costs**

14
15 Given the structure and FLG hedging requirements of the Maritime Link Project
16 financing, there are approximately \$55 million of financing costs that have been or are
17 forecast to be incurred to the end of 2017. These costs relate to interest rate hedging,
18 banking commissions, fees of the Independent Engineer acting for Canada, legal and
19 other external service fees of both Canada and NSPML, and trustee service costs. Since
20 these fees relate to the entire Project financing, they are being deferred and will be
21 recovered in rates over the life of the Project. This Interim Assessment includes an annual
22 recovery of approximately \$1.5 million in each of 2018 and 2019. This same amount will
23 continue throughout the operating period.

³⁹ NSPML Technical Conference, February 23, 2016.

1 **5.4 Equity Financing Costs**

2

3 In the original application for approval of the ML Project, the Board approved a capital
4 structure based on an evolving debt to equity ratio (“DER”) throughout the construction
5 period of the Project until such time as the approved DER of 70:30 is reached⁴⁰. NSPML
6 determines the return on equity component of the financing of the Project based on the
7 equity invested in the Project to maintain a DER of 70:30 multiplied by the Board
8 approved 9.0 percent rate of return on equity. This equity component of the financing is
9 calculated on a monthly basis. In this way, Nova Scotia customers only pay a return on
10 the equity that has been invested in the Project. The total amount of shareholder equity
11 estimated to be invested at the end of construction is approximately \$560 million. As a
12 result, the Interim Assessment includes a Return on Equity of approximately \$51 million
13 (using the Board-approved 9.0 percent rate of Return on Equity).

⁴⁰ 2013 NSUARB 154 (M05419) at paragraph 301.

1 **6.0 BENEFITS TO CUSTOMERS FROM THE MARITIME LINK**

2
3 In the Maritime Link Decision, the Board noted that “the ML Project is not a typical
4 capital project”⁴¹.

5
6 As noted by the Board in the ML Project Decision, “the Maritime Link allows Nova
7 Scotia to add an important tool to its portfolio of assets to access Market-Priced Energy,
8 when it is economical to do so, and in amounts that are required.” [NSUARB 154, p.
9 54]⁴² With the completion of the regional energy loop created by the Maritime Link, NS
10 Power will be well-positioned to access competitive energy markets in a manner not
11 previously possible to obtain value through the import (or export) of energy via the
12 Maritime Link.

13
14 Designing and building the Maritime Link with the support of the Government of Canada
15 via a loan guarantee has significantly minimized risk and project financing costs to Nova
16 Scotia customers. The Federal Loan Guarantee will directly benefit Nova Scotia
17 customers, saving more than \$250 million (more than \$100 million on a net present value
18 basis) over the life of the Project. After commissioning, Maritime Link debt financing
19 costs (interest during operations as noted above) must be funded through rate recovery
20 rather than using debt and equity investment as was the case during construction⁴³.
21 Depreciation for accounting purposes commences upon commissioning in accordance
22 with NSPML’s Board approved accounting policies, and NSPML is also required to
23 make equal debt principal repayments of \$20 million every six months starting December
24 2020 until December 2052⁴⁴ in accordance with NSPML’s financing arrangements.

25

⁴¹2013 NSUARB 154 (M05419), page 104, at paragraph 322.

⁴² 2013 NSUARB 154 (M05419), page 54, at paragraph 161.

⁴³ As reported at NSPML’s Technical Conference on February 23, 2016, under the terms of its financing NSPML is required to pay interest on the debt and return on equity in 2018 and 2019.

⁴⁴ NSUARB IR 006, Attachment 1, ML Credit Agreement, section 2.6.

1 The timely recovery of Maritime Link Project costs is an important premise for
2 NSPML's contractual commitments and financing terms, and will preserve the cost-
3 effectiveness of the financing structure applicable to the Project to the benefit of NSP
4 customers. In light of the significant benefits received by customers from the Federal
5 Loan Guarantee, it is both equitable and consistent with the overall structure of the
6 Project that NSPML be allowed to recover revenue for the Maritime Link Interim
7 Assessment in order to meet its obligations under the Federal Loan Guarantee. As noted
8 by John Reed in the direct evidence which is attached to this Application as Appendix
9 "B", it is important for rate regulation of large-scale infrastructure projects such as the
10 Maritime Link to reflect the risks and public interest benefits of such projects. Moreover,
11 recovery of the Interim Assessment by NSPML is consistent with the Project-specific
12 legislation outlined in this Application that has effectively harmonized the ratemaking
13 treatment of the Project with the objectives of having the Project developed in a timely
14 and cost effective manner and the preservation of predictable and stable rates for
15 customers.

16
17 Based on a June 24, 2016 press release and technical briefing issued by Nalcor Energy,
18 NSPML presently anticipates that the Nova Scotia Block, being the 35 years of energy
19 and capacity, and Supplemental Energy will commence between Q3, 2019 and Q2, 2020.
20 The commissioning of the third generating unit is the latest date by which Nalcor is
21 required to commence the 35 years of NS Block delivery⁴⁵. The full schematic released
22 during the Nalcor briefing on June 24, 2016 is attached to this Application as Appendix
23 "C".

24 No later than the date that Nalcor completes and commissions the third generator at
25 Muskrat Falls, the NS Block will begin to flow and will do so for the following 35 years
26 for the benefit of electricity customers in Nova Scotia. In the meantime, NS Power, on
27 behalf of customers, will have the use of the ML to conduct economic market-priced
28 energy transactions and also secure benefits for NS customers as noted below. With both

⁴⁵ Per the Energy and Capacity Agreement, available in Appendix 2.03 of the original Maritime Link approval application M05419.

1 provinces connected electrically for the first time in history, Nova Scotia and
2 Newfoundland Labrador will have improved reliability and energy options for decades to
3 come.

4
5 The Nalcor Agreements anticipated the possibility that the Maritime Link would be
6 commissioned and available for energy transactions before the Muskrat Falls plant was
7 completed (at least before the third generating unit) and before the NS Block commences.
8 While a delay in the start of the NS Block now appears likely, there is no expectation of
9 delay in the in-service date of the Maritime Link.

10
11 NS Power has explained that Nova Scotians will benefit from the Maritime Link as soon
12 as it is commissioned and brought into service on January 1, 2018⁴⁶. In other words, as of
13 January 1, 2018, the Maritime Link will be used and useful in accordance with regulatory
14 practice in Nova Scotia and in accordance with the NSPML Accounting Policies, which
15 are the same in this regard as the NS Power Accounting Policies. In its Reply Evidence
16 and Fuel Refresh in M07348, NS Power enumerated the immediate benefits to NS Power
17 customers once the Maritime Link is available and comes into service as including the
18 following⁴⁷:

- 19
20
- 21 • ... the ECA provides for the use of the Maritime Link for energy
22 transactions before the start of the NS Block. The ECA gives the
23 option to purchase available energy from Nalcor at the Salisbury node
24 price, less transmission costs as long as Muskrat is producing Energy
25 and the Labrador Transmission Assets (LTA) and LIL have been
26 commissioned.
 - 27 • If the Maritime Link goes into service in advance of the delivery of the
28 Nova Scotia Block, the 35-year term will be extended by the amount
29 of the delay. In short, a one year delay in the delivery of the Nova
30 Scotia Block would mean that the Maritime Link would be available
31 for use by NS Power customers for 36 years, rather than 35 years,

⁴⁶ NS Power, 2017-2019 Fuel Stability Plan Application, Reply and Refresh (M07348), page 21, lines 4 to 8

⁴⁷ NS Power, 2017-2019 Fuel Stability Plan Application, Reply and Refresh (M07348), page 21, line 13 to page 24, line 3

1 including one Additional year after 2020 when NS Power’s renewable
2 energy requirements are higher and possible carbon pricing could
3 increase the value of carbon-free hydroelectricity.
4

- 5 • The Maritime Link will complete a new Atlantic electricity loop,
6 opening access to market-priced energy in new competitive electricity
7 markets. (Ontario, New York, New England, Quebec, Newfoundland
8 and Labrador and New Brunswick). As soon as the Maritime Link is in
9 service, NS Power will be connected to Newfoundland and Labrador
10 and with the construction of the Labrador Island Link and the
11 Labrador transmission assets the entire North American electricity
12 grid. This will add significant flexibility and optionality, and makes
13 additional tools available to enable NS Power to meeting its
14 environmental compliance obligations.
15
- 16 • The operation of the Maritime Link provides the opportunity for the
17 sale of excess electricity by NS Power to the Province of
18 Newfoundland. At times, following commissioning of the Maritime
19 Link but prior to the full commissioning of Muskrat Falls, NS Power
20 may have generating capacity available in excess of what is required to
21 serve its customers in Nova Scotia. In these instances, should NS
22 Power be able to produce incremental energy at a lower cost than it
23 can be produced in Newfoundland, NS Power may be able to sell
24 energy to Newfoundland to the benefit of both parties.
25
- 26 • The Maritime Link also has the benefit of increasing the diversity of
27 the supply of electricity available to NS Power. At times, prior to the
28 flow of the NS Block, there may be opportunities for NS Power to
29 purchase energy from Newfoundland and Labrador at a price less than
30 it would cost to produce using NS Power’s other options, thereby
31 reducing fuel costs for customers.
- 32 • The reliability of the NS Power system will also be enhanced when the
33 Maritime Link comes into service as noted by the Board in its
34 Maritime Link Decision.⁴⁸ Specifically, the Maritime Link will
35 provide the following reliability benefits:
36
- 37 • **Voltage support.** The ML reactive power capability operates
38 independently of real power output and can provide voltage support to
39 the system in the Eastern end of the province, much like a Statcom or
40 Static Var Compensator can be used to support system voltage.
41

⁴⁸ NSPML, Maritime Link Project, Decision, 2013 NSUARB 154 (M05419), page 133, at paragraph 443.

- 1 • **Automatic Generation Control (AGC)/Regulation.** The Maritime
2 Link can be placed on AGC to help regulate load and generation
3 fluctuations in Nova Scotia.
4
- 5 • **Reserve Sharing.** The Newfoundland and Labrador Hydro-NS Power
6 Interconnection Operators Agreement (NLH-NSPI IOA) allows for up
7 to 100 MW of reserve sharing. Access to additional reserve can help
8 the Nova Scotia Power System Operator (NSPSO) recover more
9 quickly from system contingencies and avoid potential violations of
10 the NERC Disturbance Control Standard.
11
- 12 • **Emergency Energy.** The NLH-NSPI IOA provides for access to
13 Emergency Energy which can assist the NSPSO in maintaining
14 reliability of supply in Nova Scotia during system emergencies.
15
- 16 • **Security Energy.** The NLH-NSPI IOA provides for access to Security
17 Energy which can assist the NSPSO in maintaining system security in
18 Nova Scotia during system emergencies.
19

20 In addition to the above, other reliability benefits could be obtained
21 through further collaboration such as operating the Maritime Link in
22 frequency response mode to support the Nova Scotia system during
23 system contingencies.
24

25 At the time the Maritime Link comes into service and is made available to NS Power for
26 the benefit of NS customers it will be useful, as it will be in use to provide the benefits
27 noted above, including economic value in the options it provides to customers.

28 As with most new utility assets introduced into rate base, the magnitude of the benefits of
29 the Maritime Link can be expected to increase over time. This is particularly true with
30 large capital projects which are built to serve growing needs and are not always fully
31 utilized throughout their expected life, in particular during the early years. As noted in
32 the direct evidence of John Reed set out in Appendix “B”, large capital projects often
33 involve a cost-benefit profile where project costs are “front-end loaded,” and project
34 benefits are “back-end loaded” because the optimum size of such projects rarely matches
35 the immediate need at the commencement of operation of the asset. The Maritime Link
36 Project is no different.
37

1 As stated above, Nova Scotians will benefit from the Maritime Link as soon as it is
2 commissioned and brought into service on January 1, 2018. In addition, since NS Power
3 will be using the ML Project for the benefit of Nova Scotia customers in its first two
4 years of operation, the delay in commencement of the Nova Scotia Block will be offset to
5 the extent of economic transactions that are available to NS Power. Although the timing
6 of the NS Block has shifted, it is still contractually guaranteed for a 35 year term for the
7 benefit of customers, and the two-year delay in the commencement of the benefits
8 provided by the NS Block will be accompanied by a two-year extension in the duration of
9 those benefits to a time when such energy will be valuable to customers. As Mr. Reed
10 states:

11 “The fundamental bargain that was established by what has been called
12 the “20 for 20” agreement has not changed. NS Power’s customers were
13 not “paying twice” under the original project schedule, and won’t be under
14 the revised project schedule. The benefits will be somewhat deferred and
15 elongated, but the total benefits, and the ML Project costs, should be at
16 least as favorable as they ever were.”

17
18 NSPML is managing the construction risks and scheduling applicable to the Maritime
19 Link, inherent in Projects of its size and complexity, to avoid the accumulation of
20 construction-related costs and delays that would increase the overall long-term cost of the
21 Project to Nova Scotia customers.

22 NSPML respectfully submits that commencement of the use of the Maritime Link Project
23 on January 1, 2018 and the concurrent recovery of Project costs upon it being put into
24 service are appropriate for customers and aligns with the original ML Project approval.
25 Cost recovery on these assumptions on an interim basis, and based upon the publicly
26 available financial information contained in this application and NSPML’s Quarterly
27 Reports, will allow the Board to ensure that value is maintained for the benefit of Nova
28 Scotia customers. NSPML reiterates its commitment to provide a detailed reporting of
29 the components and breakdown of the actual costs of the entire completed Project when it
30 makes application for a final costing of the entire completed Project. This will ensure the
31 final costing of the Project can be reviewed in a manner that is clear and transparent to
32 the Board and stakeholders. Regulatory mechanisms available to the Board, including

NSPML

1 the FAM processes and the NSPML Final Cost Application, will allow the Board
2 appropriate control to ensure that customers pay no more and no less than the actual
3 capital costs of the Maritime Link Project.

1 **7.0 REQUEST FOR RELIEF**

2

3 NSPML respectfully requests that the Board:

4

5 1. Issue an order pursuant to section 64 of the *Public Utilities Act* and section 8(1) of the
6 *Maritime Link Cost Recovery Process Regulations*, setting an Interim Assessment
7 against Nova Scotia Power in the amounts of \$162 million for 2018 and \$164 million
8 for 2019, as outlined herein and consistent with NS Power's BCF, on the basis that
9 NS Power will have use of the Maritime Link and approving a schedule of monthly
10 charges payable by NS Power to NSPML commencing January 1, 2018; and

11

12 2. Direct NSPML to file final Maritime Link costs for approval following
13 commissioning, once the final costs for the Project are known.

Nova Scotia Utility and Review Board

IN THE MATTER OF

*The Maritime Link Act, S.N.S 2012 c.9
and the
Maritime Link Cost Recovery Process Regulation, N.S. Reg. 189/2012*

NSPML Quarterly Report Q4 2016

December 14, 2016

Table of Contents

1.0	Introduction.....	3
2.0	Update of Project Schedule with Variance Explanation.....	4
2.1	Gates and Milestones	4
2.2	Safety.....	4
2.3	Abengoa Update.....	5
2.4	Commercial Activities.....	5
2.4.1	Land Access Agreements.....	9
2.4.2	Funding	9
2.4.3	Joint Development Agreements	9
2.5	Engineering Activities.....	10
2.6	Submarine Cables (Marine)	11
2.7	Horizontal Directional Drilling (HDD) Boreholes.....	12
2.8	Converters and Substations	12
2.9	Right of Way Clearing Contractor(s) – Transmission Lines.....	13
2.10	Construction Contractor(s) – Transmission Lines	13
2.11	Construction Contractor(s) – Site Preparation	16
2.12	Granite Canal Accommodations Operations.....	16
2.13	Grounding Sites.....	16
2.14	Independent Engineer.....	17
2.15	Technical Conference.....	17
3.0	Updated Cost Summary	18
4.0	Cost Flow	20

NSPML

1 1.0 INTRODUCTION

2

3 This is the Q4 2016 Quarterly Report for the Maritime Link as directed by the Utility
4 and Review Board (UARB) where the UARB ordered in its Supplemental Decision:

5

6 [115]....detailed reports must be filed by NSPML on a semi-
7 annual basis, on June 15 and December 15 each year. The reports
8 shall commence December 15, 2013. Updated status reports must
9 be filed quarterly.

NSPML

1 2.0 UPDATE OF PROJECT SCHEDULE WITH VARIANCE EXPLANATION

2

3 As per Enerco U-31, sections 1.1, 1.2, and 1.3, this section provides an update on the
4 project schedule, along with a variance explanation and general status updates.

5

6 Please refer to Attachment 1 for the Level 1 Project Schedule and Attachment 2 for
7 the Detailed Project Schedule.

8

9 2.1 Gates and Milestones

10

11 The Project remains scheduled for commissioning and commencement of operations
12 by the end of Q4 2017. ENL is now planning for Decision Gate 4, at which point the
13 Maritime Link will be turned over to Operations.

14

15 2.2 Safety

16

17 As previously reported, the project review of high risk activities for new upcoming
18 field activities by contractors continues to be followed. In this quarter, safety reviews
19 prior to the start of new work continued such as those activities related to the
20 assembly and erection of towers and structures, work required with the use of
21 helicopters, installation of electrical components at the grounding sites, and
22 installation of wire mesh and other elements prior to the pouring of the concrete
23 floors in the HVdc buildings. These reviews are in addition to the other safety
24 activities outlined in the Safety Plans for each site. As well, tool box safety
25 discussions with each crew and Field Level Risk Assessments (FLRAs) are standard
26 activities each morning at the various construction sites by the contractors. These
27 safety measures continue to be effective with over 2 million labour hours worked, and
28 three lost time injuries to date, with no life-altering injuries.

NSPML

2.3 Abengoa Update

In February 2015 NSPML entered into a contract with Abengoa S.A., a Spanish energy company, for the transmission line construction on the Maritime Link Project. On November 25, 2015 Abengoa S.A. filed a notice under Spanish law, which provides for pre-insolvency protection in Spain, giving the company up to 4 months to reach an agreement with creditors to avoid a full insolvency process. Following discussions with Abengoa and the Performance Bond Sureties, on June 30, 2016, NSPML issued a call on the \$38.5 million Letter of Credit that was associated with the Abengoa Transmission Line Contract. The full amount of the Letter of Credit has been collected by NSPML. Additionally, NSPML reached a settlement agreement with the Performance Bond Sureties for \$5.5 million and these funds have also been received. Collection of the funds from the Letter of Credit and Sureties has preserved value for customers. Abengoa has disputed NSPML's decisions and the dispute resolution process is being followed in accordance with the Abengoa Transmission Line Construction Contract. The replacement contractor has made significant progress to date in the recovery effort.

2.4 Commercial Activities

The key major procurement activities are presented in Table 1 with an update of the status for each initiative.

Table 1

Commercial Activity	Status in October 2016	Initiative Number	Status in December 2016
HVdc Submarine Cable Supply and Installation	The Contract was awarded to Nexans in January 2014.	E11-18	No Change.
Converter stations, switchyards and related	The Contract was awarded to ABB Inc. in June 2014.	E12-74	No Change.

NSPML

Commercial Activity	Status in October 2016	Initiative Number	Status in December 2016
structures (“converters and structures”)			
Right of Way Clearing along Transmission Lines	Contracts were awarded to Majors Logging Limited in NL and R. MacLean Forestry in NS in February 2014.	E13-88	Contract closeouts are in progress.
Transmission Structures and Grillages	The Contract was awarded to Kalpataru Power Transmission Ltd. in September 2014 for design and delivery of Structures and Grillages.	E13-85	No Change.
Site Preparation Services (Includes construction of access road upgrades)	The Contract was awarded to Joneljim Concrete Construction (1994) Ltd. for NS Site Preparation Services in September 2014. The Contracts were awarded to Marine Contractors Inc., MCI Limited Partnership for NL Site Preparation Services in September 2014.	E13-92	Contract closeouts are in progress.
Transmission Line Construction	The Contract was awarded to Abengoa S.A. in February 2015. This contractor has been replaced with E16-284 and E16-269 as reported in the previous report.	E13-95	No Change.
Transmission Line Construction – NL AC Line	The contract with PowerTel was re-assigned to NSPML from Abengoa for the completion of the two Grounding Lines and the HVac Line.	E16-284	No Change.

NSPML

Commercial Activity	Status in October 2016	Initiative Number	Status in December 2016
Transmission Line Construction - NL and NS HVdc Lines	The contract for the construction of the HVdc Transmission Lines was awarded to a joint venture of Emera Utility Services and Rokstad Power Corporation (ERJV).	E16-269	No Change.
Transmission Line Conductors	<p>The Contract for the supply of conductors was awarded to Midal Cables in March 2015.</p> <p>The contract for the supply of OPGW was awarded to Composite Power Group Inc. in June 2015.</p> <p>This is also within the scope of the E13-87 initiative.</p>	E13-87	<p>Contract close- out is in progress.</p> <p>Contract close-out is in progress.</p>
Horizontal Directional Drill (HDD) Construction Program	<p>Contract awarded to Directional Horizontal Drilling (DHD) in January 2016.</p> <p>E13-157 was divided into two contracts.</p> <p>E13-157 A was awarded to Schlumberger in March 2016 for the supply of HDD fluids. E13-157B was awarded to Baker Hughes in April 2016 for the Supply of directional drilling services, drill bits and other materials.</p> <p>E13-158 for marine intervention services was awarded in April 2016 to</p>	<p>E13-156</p> <p>E13-157</p> <p>E13-158</p>	The closeout of all HDD construction contracts are in progress.

NSPML

Commercial Activity	Status in October 2016	Initiative Number	Status in December 2016
	DOF Marine. The supply of the HDD casing (E15-238) was awarded to East Coast Tubulars Limited in October 2015.	E15-238	
Accommodations Operations	The contract for the accommodations operations services was awarded to East Coast Catering in April 2015.	E13-89	Contract continues and may be extended.

1

NSPML

2.4.1 Land Access Agreements

In NS, all UARB expropriation hearings have been successfully resolved through negotiated agreements. In NL, there are only three outstanding disputed expropriations. The process for hearing expropriation disputes rests with an arbitration panel established by the government, and NSPML has worked with the Chair of the panel and the NL Government for process and rules to enable hearings in NL. NSPML has recently been assured that hearings will soon be scheduled for the New Year. NSPML has also filed applications for dormant expropriated parcels in NL; these applications will be uncontested. Similar to NS, these applications are about fair compensation valuation; land control has been obtained for the expropriated parcels.

2.4.2 Funding

As in prior months, Funding and Drawdown Requests containing comprehensive details of costs for the upcoming month were submitted to the Collateral Agent and Government of Canada as necessary, and all requested funds were received on schedule. Please refer to Attachment 3 for the IE Draw Confirmation Certificates for the period. These draws permit payments to Material Project Participants to be paid with the proceeds of the ML Construction Loan under the payment terms of the Material Project Documents and the ML Credit Agreement.

2.4.3 Joint Development Agreements

NSPML continues to work with Nalcor and NS Power to finalize the remaining operational agreements arising from the Formal Agreements with Nalcor. Please refer to Attachment 4 for details on the status of these Agreements.

NSPML

2.5 Engineering Activities

Commissioning of the Maritime Link continues to align with the in-service target date of Q4 2017. Engineering is captured in three main categories across several Work Breakdown Structures (“WBS’s”):

- HVdc Submarine Cable Supply and Installation - cable design and manufacturing is being engineered by the supplier of the cable, Nexans, which will include performance criteria consistent with service life and reliability targets subject to approval by NSPML. In this period, Nexans engineering activities continued. The primary areas of focus are related to land based designs for the HDD sites and the terminations at the Transition sites. Procedures documentation continued related to pull-in, cable load out and laying, along with continued development for other marine operations. Other documents in progress are related to cable storage and maintenance requirements and rock impact testing procedures, cable protection analysis and assessing and selecting other third party contractors required for the 2017 installation program.
- HVdc Converters and Substations - engineering is included in the contract awarded to ABB for the supply and installation of these assets. The final designs are approximately 95 percent complete. The remaining priorities are the final designs for both the HVdc and HVac Protection and Control systems and the telecommunication systems. The Engineering team has completed much of the Factory Acceptance Testing (FAT) for many key electrical components at the manufacturing facilities in the period. Studies continued in preparation for the start of testing and energization of the Maritime Link.
- Overland Transmission - designs for the transmission and grounding lines are complete and in-field modifications resulting from the field construction activities are ongoing.

NSPML

1 **2.6 Submarine Cables (Marine)**

2

3 At Futtsu, Japan, cable manufacturing continued with Batch 1 armoring completed,
4 Batch 2 lead sheathing in progress, and Batch 3 stranding continuing.

5

6 At Halden, Norway, cable manufacturing continued with Batch 1 lead sheathing in
7 progress, Batch 2 impregnation ongoing, Batch 3 drying and impregnation in progress,
8 and Batch 4 conductor stranding complete.

9

10 The manufacturing of the land cable was completed as reported previously and it has
11 been shipped to NL and NS.

12

13 The third party inspections at the manufacturing facility in Futtsu and Halden are
14 ongoing. The quality issues previously reported have been addressed, which involved
15 fatigue analysis of the lead sheath to ensure a minimum 50 year life expectancy. The
16 progress on these long lead items has been on the project critical path, and remains
17 such with manufacturing as noted. Installation and burial vessels are contracted well in
18 advance to de-risk these critical path activities.

NSPML

2.7 Horizontal Directional Drilling (HDD) Boreholes

As outlined in the previous report, the HDD program was completed in August, on schedule and within budget.

2.8 Converters and Substations

At the Bottom Brook location, the structural steel was completed for the HVdc Converter building, with the roof cladding near completion. Pouring of the concrete floor has commenced, and preparation of wire mesh, rebar, grounding and heating and hoarding for the interior concrete floor is in progress. For the DC yard, approximately 80 percent of foundations are now installed. Major components continued to arrive.

For the new AC switch yard, all steel structures are complete. The majority of the disconnect switches and other equipment are in the process of being installed. Installation of trench boxes and running of cables advanced on site.

At the Woodbine location, the structural steel was completed for the HVdc Converter building, with the roof cladding near completion and outside panel installations started. Preparation for the concrete flooring progressed. DC yard foundations advanced with approximately 80 percent of foundations installed. For the AC switchyard, 100 percent of the AC foundations are placed. Installation of trench boxes and underground conduit for cables continued and the duct bank from the AC to DC yard is approximately 95 percent complete. Equipment continued to be delivered including the second transformer which was set on its concrete pad.



Converter building at Woodbine, NS, substation as of October, 2016

NSPML

1 A deficiency with the siding material and installation has caused a delay in the
2 permanent enclosure of the converter buildings. The contractor is taking steps to
3 temporarily enclose the building so work can continue uninterrupted while new siding
4 is being manufactured.

5
6 At Granite Canal, the contractor mobilized to site and foundation work continued
7 including the completion of the foundation for the shunt reactor.

8
9 The site at the Cape Ray Transition Compound has been transferred to the Contractor
10 and mobilization planning is in progress to commence steel erection and prepare for
11 land cable to overhead termination in 2017.

12
13 At the Point Aconi Transition Compound, the Contractor has mobilized to the site and
14 has started erosion and sedimentation control measures. Excavation for several cast in
15 place foundations and form work for footers has also commenced.

16

17 **2.9 Right of Way Clearing Contractor(s) – Transmission Lines**

18

19 Final completion of all right of way tree clearing in NL was achieved in May, 2016.

20 Final completion in NS was achieved in Q4 of 2015.

21

22 **2.10 Construction Contractor(s) – Transmission Lines**

23

24 The status of the transmission lines construction activities at the end of the period is
25 detailed in Table 2.

NSPML

1

Table 2

Transmission Line	Completion Target	Status
NL Grounding Line	September 2016	The NL grounding line is completed with the exception of the connections at each end.
NL DC Transmission Line	April 2017	Approximately 36 percent of guyed towers and 25 percent of self-supporting towers have been assembled, with 22 percent of all foundations installed and 18 percent of the self-supporting towers erected.
NL AC Transmission Line	March 2017	Approximately 74 percent of poles have been installed and 57 percent have been framed to accept conductor. Approximately 33 percent of the 159 km of line has conductor and fibre optic overhead shield wire installed.
NS Grounding Line	September 2016	NS Grounding line is complete with the exception of the connections at each end.

NSPML

<p>NS DC Transmission Line</p>	<p>April 2017</p>	<p>Approximately 81 percent of guyed towers and 30 percent of self-supporting towers have been assembled, with 62 percent of all foundations installed and 21 percent of self-supporting towers erected.</p>
--------------------------------	-------------------	--

1



HVAc Line Installation using Helicopter

NSPML

1 **2.11 Construction Contractor(s) – Site Preparation**

2

3 In NL, all site preparation work was finalized with the completion of work at Cape
4 Ray in April 2016. In NS, all site preparation work was completed in Q4 2015.

5

6 **2.12 Granite Canal Accommodations Operations**

7

8 The contract for the operations of the Granite Canal accommodations facility (E13-
9 89A) was awarded to East Coast Catering in April 2015. The camp has been in full
10 operation since July 2015.

11

12 **2.13 Grounding Sites**

13

14 The construction of the grounding site at Indian Head, NL was
15 completed in July.

16

17 The civil works at Big Lorraine in NS was completed in Q4,
18 2016. The electrical conduit and trench boxes are near
19 completion. Site cleanup and hydro seeding are in progress. Rock
20 reef installation has been completed as part of the fishery habitat
21 obligation.

22

23 The last of the sixteen contracts was awarded in October 2016,
24 with the award of the contract for the grounding site electrical
25 equipment. The electrical equipment installation was completed
26 in November in NL, and is scheduled for completion in December
27 in NS.



Grounding Wells at Indian Head

NSPML

1 2.14 Independent Engineer

2

3 The Independent Engineer (IE) team has completed several site visits and project
4 inspections, at various stages in each province. As well, IE team members have
5 witnessed the progress at each major manufacturing facility for cables, converters and
6 transformers on multiple occasions at key stages of manufacture. The IE completes
7 confidential reports for Canada and provides a debrief to NSPML for each inspection.

8

9 In October, the IE conducted site visits in NL and NS. In NL, construction sites
10 included the Grounding Line, Burgeo Highway HVac line, and Bottom Brook
11 Converter Station and Switchyard. Helicopter travel to the Granite Canal Switchyard
12 and Granite Canal HVac line was cancelled due to poor weather. In NS construction
13 sites included the Point Aconi HDD and Transition Compound sites, HVdc line,
14 Woodbine Transition Compound, Converter Station and Switchyard, Grounding Line,
15 and Big Lorraine Grounding site. Please see Attachment 5 for a copy of the IE's
16 October site visit report to the NS and NL construction sites. Please see Attachment 6
17 for a copy of the site visit to NS sites in June 2016, and Attachment 7 for a copy of the
18 site visit report to construction sites in NL which took place in August. A site visit to
19 the Nexan's manufacturing facility at Futttsu is planned in Q1, 2017. Planning is
20 underway for scheduling additional site visits in 2017. All of these visits are aligned
21 with the increase in construction and manufacturing activities this year. All site visit
22 reports will be filed with the Quarterly reports once completed.

23

24 2.15 Technical Conference

25 On November 8, 2016, NSPML held a Technical Conference to provide stakeholders
26 with an update on the Maritime Link. Please see Attachment 8 for a copy of the
27 transcript from the Technical Conference.

NSPML

3.0 UPDATED COST SUMMARY

As per Enerco U-31, section 2.1, the detail below outlines the DG3 forecasted costs.

Table 3 below provides an updated cost summary for the Maritime Link, which includes actual costs incurred as of September 30, 2016 and forecasted costs for the remainder of the Project's construction phase.

NSPML continues to track and report all costs, actual and forecast (2011-2017), consistent with the methodologies used in the cost forecast represented in the ML Project Application. Project costs include fully allocated costs for the entire Project Management Team, including contractors, employees, executives dedicated to the project, and NS Power seconded employees at affiliate mark-up rates according to the Code of Conduct for Affiliate Transactions. All costs provided are in Canadian dollars.

Actual AFUDC is being tracked and recorded monthly. AFUDC remains within the \$230 million amount estimated at the time of filing of NSPML's Application.

The project remains on target for completion in 2017 and within the approved budget of \$1.577 billion.

Table 3

(000's of Canadian Dollars)	Actual Costs						Total Project to Date	Forecast		Total Project Estimate at Completion
	2011-2013	2014	2015	Q1 2016	Q2 2016	Q3 2016		Q4 2016	2017	
Emera NL Project Management Costs	44,379	42,315	24,599	6,818	8,275	4,038	130,424	8,748	39,737	178,909
Nalcor Project Support Costs	-	15,232	425	(20)	241	255	16,134	65	135	16,334
Construction and Engineering Initiatives	14,975	167,980	259,750	83,891	89,966	161,024	777,586	129,897	315,053	1,222,536
Environmental Approval	2,651	4,378	1,082	81	255	619	9,066	2,672	9,642	21,379
Submarine and related	3,359	83,797	74,439	9,946	23,534	15,115	210,191	5,804	106,823	322,817
Converters, structures, and other ancillary equipment	1,517	48,747	106,195	40,317	47,347	102,771	346,894	53,718	138,918	539,530
AC and DC Transmission	7,448	31,057	78,035	33,547	18,830	42,519	211,437	67,703	59,670	338,810
Total	59,354	225,527	284,774	90,689	98,482	165,317	924,143	138,710	354,925	1,417,779
Escalation								-	33,954	33,954
Contingency								-	125,621	125,621
Grand Total	59,354	225,527	284,774	90,689	98,482	165,317	924,143	138,710	514,500	1,577,355

NSPML

1 Total Actual Project Costs at end of Q2, 2016 Compared to Previous Forecast

2
3 The total actual project costs for Q3 2016 were \$4.7 million more than the costs for the
4 same period forecasted in the NSPML Quarterly Report of October 15, 2016. The
5 explanations of the variances are as follows:

- 6
- 7 • ENL Project Management and Nalcor Project Support: \$0.5 million lower cost
8 incurrence due to resourcing and administration.
 - 9
 - 10 • Environmental Approval: \$0.15 million lower cost incurrence primarily due to the
11 timing of expenditures along with environmental studies and stakeholder
12 engagement costs.
 - 13
 - 14 • Submarine and related: \$0.5 million lower cost incurrence due to schedule and
15 efficiencies at the Horizontal Directional Drilling (HDD) sites at Cape Ray, NL
16 and Point Aconi, NS
 - 17
 - 18 • Converters, structures and other ancillary equipment: \$2.7 million lower cost
19 incurrence due to slower progress achieved for civil construction activities for the
20 Converter / Substations supply contract.
 - 21
 - 22 • AC and DC Transmission: \$8.5 million higher cost incurrence attributable to
23 increased progress on all transmission lines by the new transmission line
24 construction contractors.
 - 25

26 The variances do not change the forecasted in-service date of Q4 2017, and the Project
27 remains within budget. Progress to date on the Transmission Line Construction
28 remains a key focus; recovery plans are in progress and the completion of this scope of
29 work to enable Project completion by the end of 2017 remains achievable. Focus is
30 also on the civil construction of HVdc buildings where the impact of the quality of the
31 external panels (siding) is under review.

NSPML

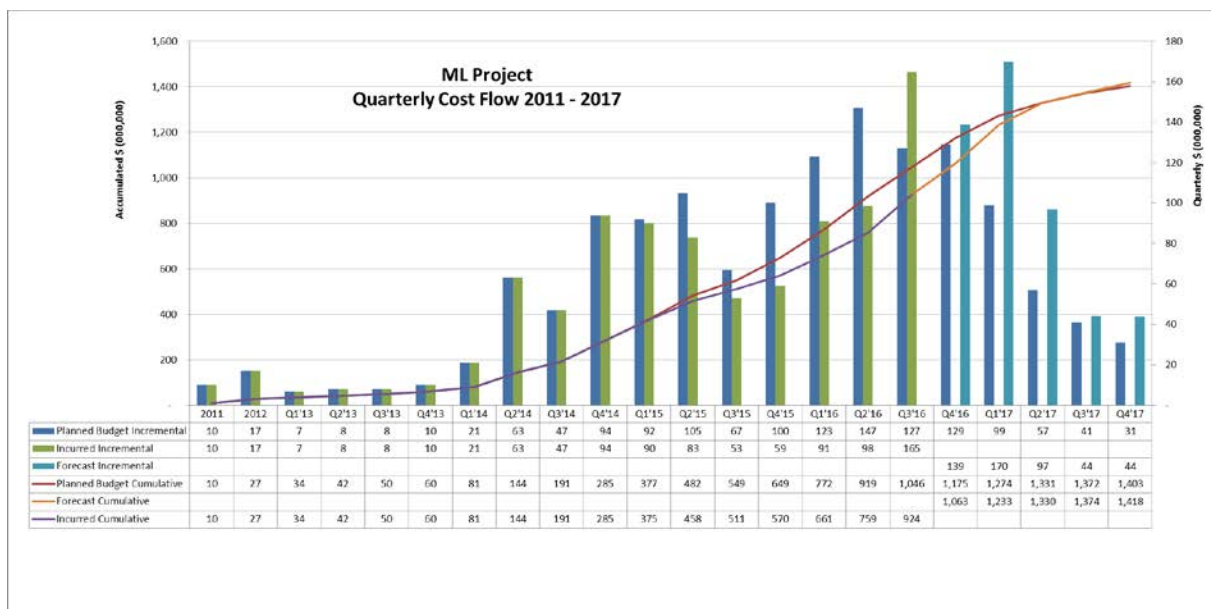
1 **4.0 COST FLOW**

2

3 As per Enerco U-31, section 2.2, please refer to Table 4 below for the cost flow until
 4 the Maritime Link is commissioned. This cost flow for the base capital spending is
 5 now forecast at \$1.418 billion from \$ 1.403 billion and a corresponding decrease in
 6 contingency and escalation has been forecasted for the remainder of the project. The
 7 total of the base capital spending, escalation, and contingency amounts remains at
 8 \$1.577 billion.

9

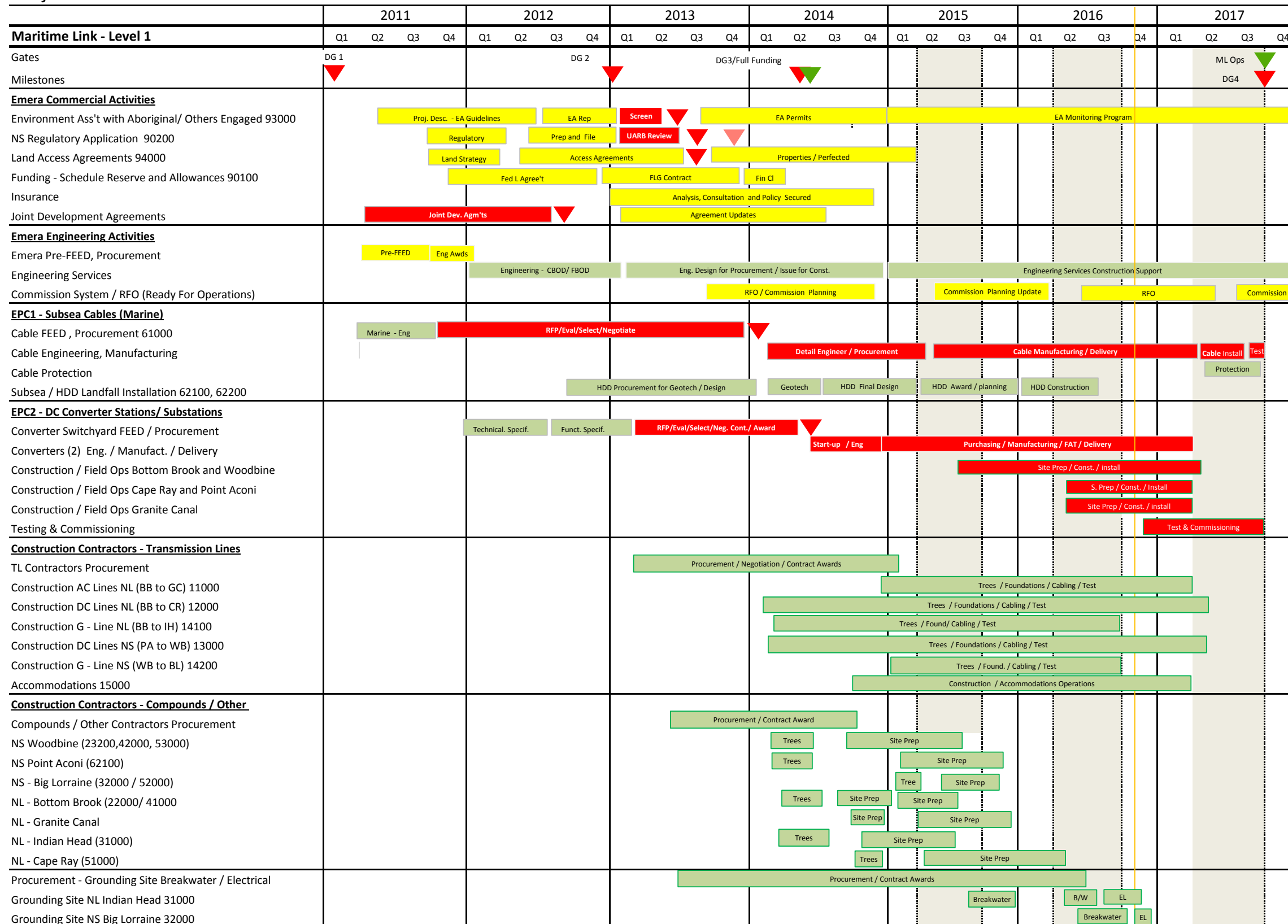
10 **Table 4**



11

Maritime Link Project Level 1 Project Schedule

Project Level 1 Schedule

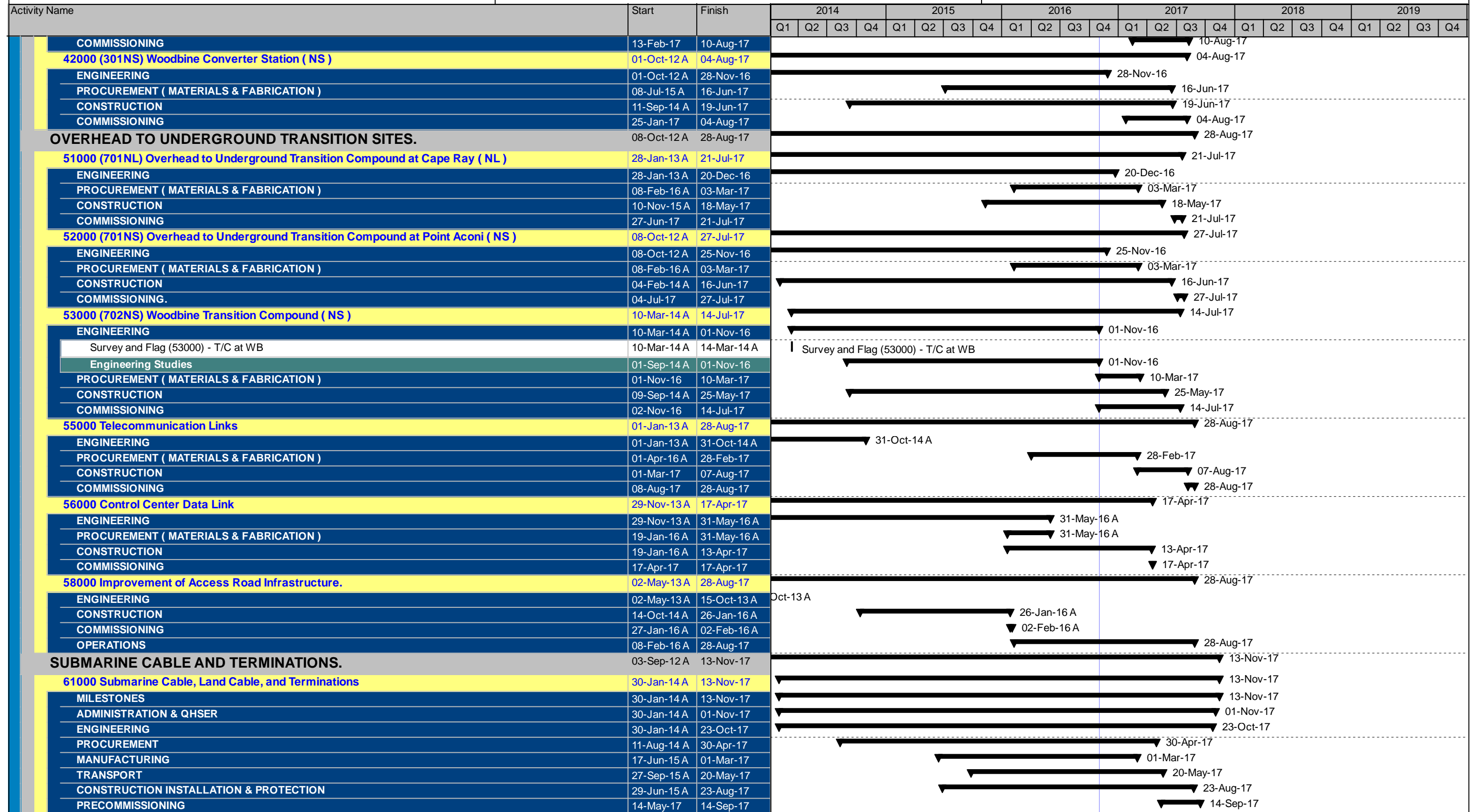


Activity Name	Start	Finish	2014				2015				2016				2017				2018				2019							
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
MLP - Schedule (DD-NOV-01-16)	01-Mar-11 A	13-Nov-17	13-Nov-17																											
GATES AND MILESTONES	01-Mar-11 A	02-Oct-17	02-Oct-17																											
Gates & Milestones.	24-Dec-12 A	29-Sep-17	29-Sep-17																											
DG2 Concept Selection		24-Dec-12 A																												
DG3 Approval to Construct		12-May-14 A	◆ DG3 Approval to Construct																											
Project Completion (Handover)		29-Sep-17																												
DG4 Approval to Operate	29-Sep-17*		◆ DG4 Approval to Operate																											
Milestones	01-Mar-11 A	02-Oct-17	02-Oct-17																											
Start MLP	01-Mar-11 A																													
Submit EA Report		10-Jan-13 A																												
Submit UARB Application		28-Jan-13 A																												
Environmental Assessment Approval		21-Jun-13 A	◆ Environmental Assessment Approval																											
UARB Approval		29-Nov-13 A	◆ UARB Approval																											
Marine Cable Contract Award (EPC1)		30-Jan-14 A	◆ Marine Cable Contract Award (EPC1)																											
Transmission Line Tree Clearing Start 12000 BB to CR	17-Feb-14 A		◆ Transmission Line Tree Clearing Start 12000 BB to CR																											
Converter Station Contract Signoff (EPC2) (E12-74)		30-Jun-14 A	◆ Converter Station Contract Signoff (EPC2) (E12-74)																											
Marine Cable Install Substantial Complete		22-Sep-17*																												
Commission Complete		29-Sep-17	◆ Commission Complete																											
First Commercial Power		02-Oct-17	◆ First Commercial Power																											
Milestones For E12-74	02-Jul-14 A	29-Sep-17	29-Sep-17																											
OVERHEAD TRANSMISSION LINE	02-Oct-12 A	28-Aug-17	28-Aug-17																											
11000 (T23001) Overhead AC Transmission Line from Granite Canal to Bottom Brook (NL)	05-Nov-12 A	30-Mar-17	30-Mar-17																											
ENGINEERING	05-Nov-12 A	30-Mar-17	30-Mar-17																											
PROCUREMENT (MATERIALS & FABRICATION).	02-Feb-15 A	01-Nov-16	01-Nov-16																											
CONSTRUCTION	02-Jul-14 A	13-Mar-17	13-Mar-17																											
COMMISSIONING	07-Feb-17	30-Mar-17	30-Mar-17																											
12000 (X20005/6) Overhead HVDC Transmission Line from Bottom Brook to Cape Ray (NL)	05-Nov-12 A	28-Apr-17	28-Apr-17																											
ENGINEERING	05-Nov-12 A	28-Apr-17	28-Apr-17																											
PROCUREMENT (MATERIALS & FABRICATION)	01-Oct-14 A	01-Nov-16	01-Nov-16																											
CONSTRUCTION	24-Feb-14 A	28-Apr-17	28-Apr-17																											
COMMISSIONING	20-Dec-16	28-Apr-17	28-Apr-17																											
13000 (X20001/2) Overhead HVDC Transmission Line from Point Aconi to Woodbine (NS)	02-Oct-12 A	28-Apr-17	28-Apr-17																											
ENGINEERING	02-Oct-12 A	30-Dec-16	30-Dec-16																											
PROCUREMENT (MATERIALS & FABRICATION)	02-Feb-15 A	01-Nov-16	01-Nov-16																											
CONSTRUCTION	17-Feb-14 A	28-Apr-17	28-Apr-17																											
COMMISSIONING	31-Mar-17	28-Apr-17	28-Apr-17																											
14100 (E00502) Grounding line from Bottom Brook to Indian Head (NL)	05-Nov-12 A	30-Sep-16 A	30-Sep-16 A																											
ENGINEERING	05-Nov-12 A	30-Sep-16 A	30-Sep-16 A																											
PROCUREMENT (MATERIALS & FABRICATION)	02-Mar-15 A	25-Nov-15 A	25-Nov-15 A																											
CONSTRUCTION	17-Mar-14 A	30-Sep-16 A	30-Sep-16 A																											
COMMISSIONING	19-Sep-16 A	30-Sep-16 A	30-Sep-16 A																											
14200 (E00501) Grounding line - Woodbine to Big Lorraine (NS)	02-Oct-12 A	30-Sep-16 A	30-Sep-16 A																											
ENGINEERING	02-Oct-12 A	30-Sep-16 A	30-Sep-16 A																											
PROCUREMENT (MATERIALS & FABRICATION)	18-Mar-15 A	22-May-15 A	22-May-15 A																											
CONSTRUCTION	23-Feb-15 A	29-Sep-16 A	29-Sep-16 A																											
COMMISSIONING	06-Sep-16 A	30-Sep-16 A	30-Sep-16 A																											
15000 Accommodations	23-Aug-13 A	28-Aug-17	28-Aug-17																											

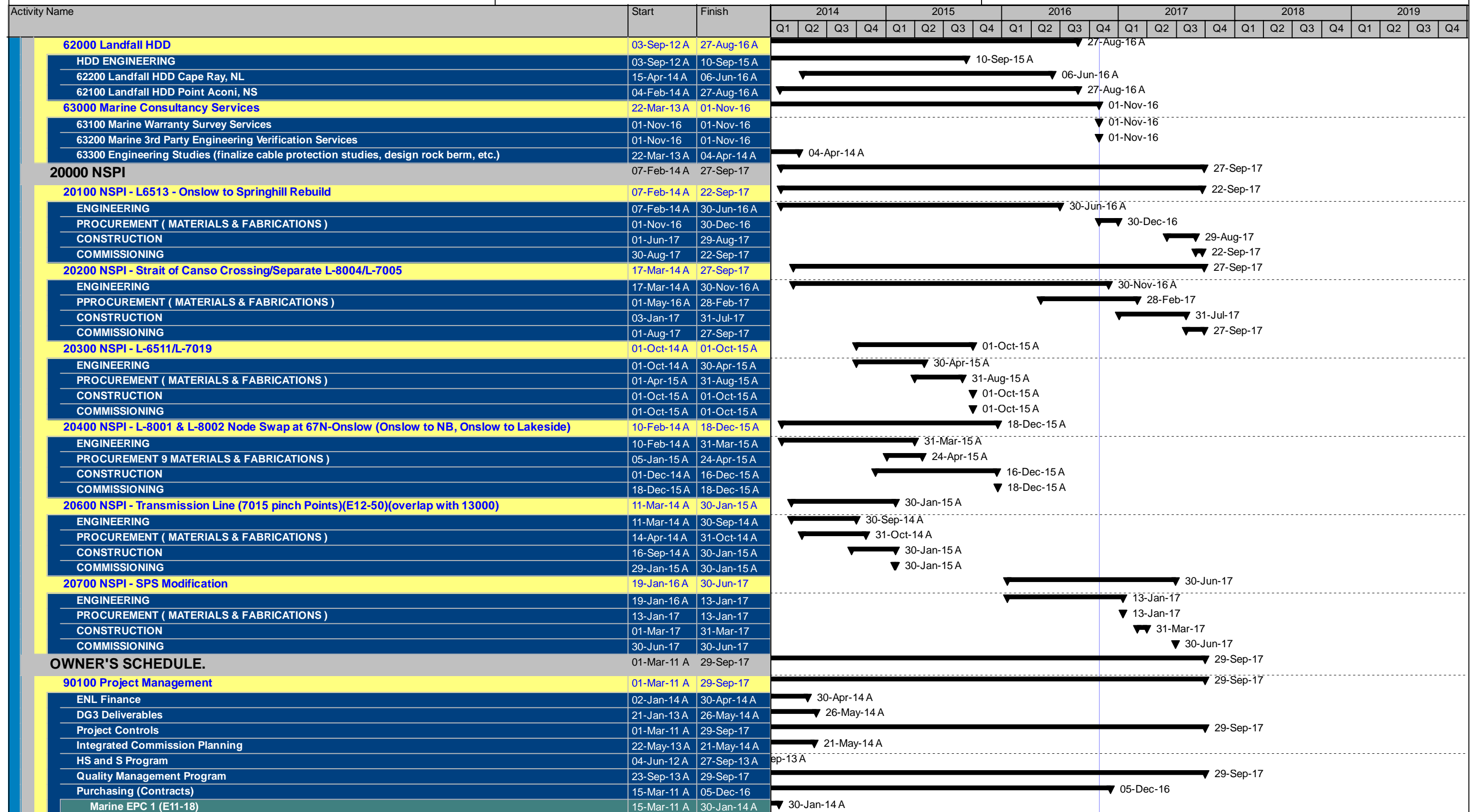
█ Remaining Work ◆ Milestone
█ Actual Work ◆ Baseline Milestone ▼ Summary

Activity Name	Start	Finish	2014				2015				2016				2017				2018				2019			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ENGINEERING	23-Aug-13 A	31-Oct-14 A	31-Oct-14 A																							
PROCUREMENT (MATERIALS & FABRICATION)	15-Sep-14 A	10-Nov-14 A	10-Nov-14 A																							
CONSTRUCTION	01-Sep-14 A	06-Jul-15 A	06-Jul-15 A																							
OPERATIONS	30-Jul-15 A	28-Aug-17	28-Aug-17																							
AC INTERCONNECTION STATIONS.	03-Dec-12 A	30-Sep-17	30-Sep-17																							
21100 (103NL) Switchyard at Granite Canal (NL)	03-Dec-12 A	28-Aug-17	28-Aug-17																							
ENGINEERING	03-Dec-12 A	15-Mar-17	15-Mar-17																							
PROCUREMENT (MATERIALS & FABRICATION)	29-Sep-14 A	03-May-17	03-May-17																							
CONSTRUCTION	01-Oct-15 A	29-May-17	29-May-17																							
COMMISSIONING	17-Feb-17	28-Aug-17	28-Aug-17																							
21200 (102NL) Modifications for P&C Communications, Ductbanks to Existing 230 kV Substation at GC	29-Sep-14 A	15-Mar-17	15-Mar-17																							
ENGINEERING	29-Sep-14 A	15-Mar-17	15-Mar-17																							
PROCUREMENT (MATERIALS & FABRICATION)	02-Dec-15 A	01-Nov-16	01-Nov-16																							
EPC2 CONSTRUCTION	01-Nov-16	23-Feb-17	23-Feb-17																							
COMMISSIONING	04-Nov-16	09-Jan-17	09-Jan-17																							
22000 (101NL) Switchyard at Bottom Brook	03-Dec-12 A	30-Sep-17	30-Sep-17																							
ENGINEERING	03-Dec-12 A	16-Mar-17	16-Mar-17																							
PROCUREMENT (MATERIALS & FABRICATION)	29-Sep-14 A	03-Apr-17	03-Apr-17																							
CONSTRUCTION	29-Sep-14 A	07-Apr-17	07-Apr-17																							
COMMISSIONING	17-Nov-16	30-Sep-17	30-Sep-17																							
22100 Generator Fuel Supply																										
23100 (301NS) Connect 345 kV Substation at Woodbine to Converter Station, (NS)	06-May-13 A	29-Aug-14 A	29-Aug-14 A																							
23200 (301NS) Extension of Substation at Woodbine (NS)	17-Feb-14 A	24-Sep-17	24-Sep-17																							
ENGINEERING	01-Aug-14 A	06-Jan-17	06-Jan-17																							
PROCUREMENT (MATERIALS & FABRICATION)	02-Sep-14 A	10-Feb-17	10-Feb-17																							
CONSTRUCTION	17-Feb-14 A	02-May-17	02-May-17																							
COMMISSIONING	05-Nov-16	24-Sep-17	24-Sep-17																							
23300 (301NS) NSPI Control Centre Modifications (NS)	03-Jan-17	29-Jun-17	29-Jun-17																							
CONSTRUCTION	03-Jan-17	15-Jun-17	15-Jun-17																							
COMMISSIONING	15-Jun-17	29-Jun-17	29-Jun-17																							
23400 (301NL) NLH Control Centre Modifications (NL)	03-Jan-17	20-Jun-17	20-Jun-17																							
CONSTRUCTION	03-Jan-17	15-Jun-17	15-Jun-17																							
COMMISSIONING	15-Jun-17	20-Jun-17	20-Jun-17																							
GROUNDING SITES ASSOCIATED WITH CONVERTER STATIONS.	06-May-13 A	23-Dec-16	23-Dec-16																							
31000 (901NL) Grounding Site NL - Indian Head (NL)	06-May-13 A	22-Nov-16	22-Nov-16																							
ENGINEERING	06-May-13 A	11-Feb-15 A	11-Feb-15 A																							
PROCUREMENT (MATERIALS & FABRICATION)	17-Aug-16 A	17-Nov-16	17-Nov-16																							
CONSTRUCTION	06-Oct-14 A	15-Nov-16	15-Nov-16																							
COMMISSIONING	09-Nov-16	22-Nov-16	22-Nov-16																							
32000 Grounding Site NS - Big Lorraine (NS)	06-May-13 A	23-Dec-16	23-Dec-16																							
ENGINEERING	06-May-13 A	31-Mar-16 A	31-Mar-16 A																							
PROCUREMENT (MATERIALS & FABRICATION)	01-Nov-16	18-Nov-16	18-Nov-16																							
CONSTRUCTION	01-Dec-14 A	16-Dec-16	16-Dec-16																							
COMMISSIONING	16-Dec-16	23-Dec-16	23-Dec-16																							
CONVERTER STATIONS.	01-Oct-12 A	10-Aug-17	10-Aug-17																							
41000 (301NL) Bottom Brook Converter Station (NL)	01-Oct-12 A	10-Aug-17	10-Aug-17																							
ENGINEERING	01-Oct-12 A	21-Dec-16	21-Dec-16																							
PROCUREMENT (MATERIALS & FABRICATION)	03-Nov-14 A	12-May-17	12-May-17																							
CONSTRUCTION	29-Sep-14 A	19-Jun-17	19-Jun-17																							

█ Remaining Work ◆ Milestone
█ Actual Work ◆ Baseline Milestone ▼ Summary



█ Remaining Work ◆ Milestone
█ Actual Work ◆ Baseline Milestone ▼ Summary



█ Remaining Work ◆ Milestone
█ Actual Work ◆ Baseline Milestone ▼ Summary

Activity Name	Start	Finish	2014				2015				2016				2017				2018				2019			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Marine	15-Jun-12 A	27-Apr-16 A	→ 27-Apr-16 A																							
Converter Stations (EPC2) E12-74	09-Oct-12 A	30-Jun-14 A	→ 30-Jun-14 A																							
Land Assets	18-Jun-12 A	10-Nov-16	→ 10-Nov-16																							
Environment	22-Jun-11 A	05-Dec-16	→ 05-Dec-16																							
Project Control Office	09-Jul-12 A	16-Jul-14 A	→ 16-Jul-14 A																							
Land Acquisition Services	29-Oct-12 A	22-Feb-13 A	→ 22-Feb-13 A																							
Risk Assessments	09-Sep-13 A	23-Jan-17	→ 23-Jan-17																							
90200 External Services	04-Jan-12 A	04-Jan-17	→ 04-Jan-17																							
Legal Services	25-Jun-12 A	30-Dec-16	→ 30-Dec-16																							
Insurance Services	03-Jul-12 A	10-Dec-14 A	→ 10-Dec-14 A																							
Regulatory (UARB) Affairs	02-Jan-13 A	24-Jun-14 A	→ 24-Jun-14 A																							
Independent Project Reviews	08-Jul-13 A	04-Jan-17	→ 04-Jan-17																							
Human Resources, Diversity and Gender Equity and Benefits Strategy	01-Aug-12 A	30-Sep-14 A	→ 30-Sep-14 A																							
CBoD/FBoD Hatch	04-Jan-12 A	22-Jan-13 A	→ 22-Jan-13 A																							
93000 Environmental	02-Apr-12 A	26-Sep-17	→ 26-Sep-17																							
EA Approval	11-Jan-13 A	09-Sep-13 A	→ 09-Sep-13 A																							
Environmental Studies	02-Apr-12 A	26-Sep-17	→ 26-Sep-17																							
Permits	14-Jan-13 A	27-Mar-17	→ 27-Mar-17																							
Environmental Protocol Documents	01-Aug-13 A	01-Nov-16	→ 01-Nov-16																							
Aboriginal Relations	11-Jun-12 A	01-Nov-16	→ 01-Nov-16																							
Other Stakeholder Relations	28-Jan-13 A	30-Dec-16	→ 30-Dec-16																							
Post EA Environmental Monitoring Program	01-Jun-13 A	18-Aug-17	→ 18-Aug-17																							
Environmental Program 14001	31-Jan-13 A	01-Nov-16	→ 01-Nov-16																							
94000 Land Acquisition	15-Jul-12 A	31-Dec-15 A	→ 31-Dec-15 A																							
90500 Other NLH System Upgrades	31-Aug-12 A	01-Sep-17	→ 01-Sep-17																							
Engineering (TL201, Bay D'Espoir, Upper Salmon)	31-Aug-12 A	14-Aug-13 A	→ 14-Aug-13 A																							
Procurement (Materials & Fabrication)	01-Nov-16	24-Feb-17	→ 24-Feb-17																							
Construction	03-Nov-16	01-Sep-17	→ 01-Sep-17																							
Commissioning	03-Nov-16	01-Sep-17	→ 01-Sep-17																							
Dynamic Commissioning (90100)	20-Jul-17	02-Oct-17	→ 02-Oct-17																							

█ Remaining Work ◆ Milestone
█ Actual Work ◆ Baseline Milestone ▼ Summary

SCHEDULE "Q"

DRAW CONFIRMATION CERTIFICATE BY INDEPENDENT ENGINEER

ML PROJECT FINANCING

This Draw Confirmation Certificate is provided by MWH Canada, Inc. (the "Independent Engineer") to The Toronto-Dominion Bank (the "Collateral Agent") in connection with the credit agreement dated February 24, 2014, between NSP Maritime Link Incorporated (the "Borrower"), Maritime Link Financing Trust (the "Lender") and the Collateral Agent (said agreement, as same may be amended, supplemented or restated from time to time, is hereinafter referred to as the "ML Credit Agreement"). Capitalized terms used in this Draw Confirmation Certificate not defined herein shall have the meanings assigned to them in Exhibit A of the ML Credit Agreement.

The Independent Engineer has (i) discussed matters believed pertinent to this Draw Confirmation Certificate with the Borrower and any relevant Material Project Participants, (ii) made such other inquiries as we have determined appropriate and (iii) reviewed:

- (a) the Construction Report dated October 20, 2016 (the "Construction Report"); and
- (b) the Borrower's funding request dated October 25, 2016 (the "Funding Request").

On the basis of the foregoing limited review procedures and on the understanding and assumption that the factual information contained in the Construction Report and Funding Request is true, correct and complete in all material respects, the Independent Engineer makes the following statements in favour of the Collateral Agent and to the best of its knowledge, information and belief, as of the date hereof that:

1. Construction of the Project is progressing in a satisfactory manner and in accordance with the terms of the applicable Material Project Documents with the following exceptions:

NO EXCEPTIONS NOTED

2. All payments to the Material Project Participants to be paid with the proceeds of the ML Construction Loan (including any payments using advances from the Working Capital Reserve Account during the period from the last Draw Confirmation Certificate to this Draw Confirmation Certificate) requested to be made pursuant to the Funding Request are allowed under the payment terms of the applicable Material Project Documents and the ML Credit Agreement as to the advance requirements of Section 7.3, with the following exceptions:

NO EXCEPTIONS NOTED

3. Assuming the Borrower exercises proper engineering and construction management throughout the remainder of the Project, we have no reason to believe that the

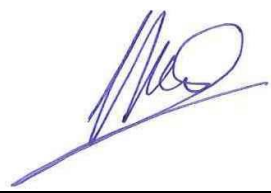
Commissioning Date will not occur prior to the Date Certain, or that the total Project Costs will exceed [\$1,577,354,028] with the following exceptions:

NO EXCEPTIONS NOTED

This Draw Confirmation Certificate is solely for the information and assistance of the Collateral Agent, the Lender and Canada in connection with the Funding Request and shall not be used, circulated or relied upon for any other purpose or by any other party.

Dated: October 27, 2016

MWH CANADA, INC.

By:  _____

Title: IE Team Leader

SCHEDULE "Q"

DRAW CONFIRMATION CERTIFICATE BY INDEPENDENT ENGINEER

ML PROJECT FINANCING

This Draw Confirmation Certificate is provided by MWH Canada, Inc. (the "Independent Engineer") to The Toronto-Dominion Bank (the "Collateral Agent") in connection with the credit agreement dated February 24, 2014, between NSP Maritime Link Incorporated (the "Borrower"), Maritime Link Financing Trust (the "Lender") and the Collateral Agent (said agreement, as same may be amended, supplemented or restated from time to time, is hereinafter referred to as the "ML Credit Agreement"). Capitalized terms used in this Draw Confirmation Certificate not defined herein shall have the meanings assigned to them in Exhibit A of the ML Credit Agreement.

The Independent Engineer has (i) discussed matters believed pertinent to this Draw Confirmation Certificate with the Borrower and any relevant Material Project Participants, (ii) made such other inquiries as we have determined appropriate and (iii) reviewed:

- (a) the Construction Report dated November 21, 2016 (the "Construction Report"); and
- (b) the Borrower's funding request dated November 22, 2016 (the "Funding Request").

On the basis of the foregoing limited review procedures and on the understanding and assumption that the factual information contained in the Construction Report and Funding Request is true, correct and complete in all material respects, the Independent Engineer makes the following statements in favour of the Collateral Agent and to the best of its knowledge, information and belief, as of the date hereof that:

1. Construction of the Project is progressing in a satisfactory manner and in accordance with the terms of the applicable Material Project Documents with the following exceptions:

NO EXCEPTIONS NOTED

2. All payments to the Material Project Participants to be paid with the proceeds of the ML Construction Loan (including any payments using advances from the Working Capital Reserve Account during the period from the last Draw Confirmation Certificate to this Draw Confirmation Certificate) requested to be made pursuant to the Funding Request are allowed under the payment terms of the applicable Material Project Documents and the ML Credit Agreement as to the advance requirements of Section 7.3, with the following exceptions:

NO EXCEPTIONS NOTED

3. Assuming the Borrower exercises proper engineering and construction management throughout the remainder of the Project, we have no reason to believe that the

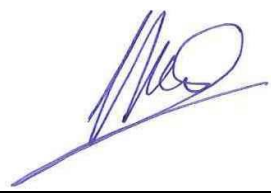
Commissioning Date will not occur prior to the Date Certain, or that the total Project Costs will exceed [\$1,577,354,028] with the following exceptions:

NO EXCEPTIONS NOTED

This Draw Confirmation Certificate is solely for the information and assistance of the Collateral Agent, the Lender and Canada in connection with the Funding Request and shall not be used, circulated or relied upon for any other purpose or by any other party.

Dated: November 24, 2016

MWH CANADA, INC.

By:  _____

Title: IE Team Leader

Operating Agreement Requirements Arising from the Formal Agreements

	Agreement	Parties	Description	Formal Agreement Source	Status
1.	Asset Interconnection Agreement (NL)	Emera, NLH	Interconnection of ML with the Island Interconnected System	ML-JDA, s. 2.1 (c)	Completed
2.	Multi-Party Pooling Agreement	Emera, NLH	NLH (SO) to have operational control of ML NLH AC Upgrades	ML-JDA, s. 2.1 (d)	Completed
3.	Transmission Operating Agreement (NL)	Emera, NLH	NLH (SO) to have operational control of ML NL HVdc Facilities	ML-JDA, s. 2.1 (e)	Completed
4.	Asset Interconnection Agreement (NS)	Emera, NSPI	Interconnection of ML with NS bulk electric transmission system	ML-JDA, s. 2.1 (f)(i)	Expect completion in Q1, 2017
5.	Transmission Operating Agreement (NS)	Emera, NSPI	NS SO to have general operational control of the ML	ML-JDA, s. 2.1 (f)(ii)	Expect completion in Q1, 2017
6.	ECA – Metering and Measuring Standards – Transmission Losses	NSPML, Nalcor	Metering and measuring standards used in the calculation of Transmission Losses	ECA, Schedule 3, s. 5	Completed
7.	Regulation Service Agreement	NSPML, Nalcor	Nalcor’s provision of the Regulation Service with respect to the Nova Scotia Block for the Initial Term	ECA, Schedule 5	Expect completion in 2017
8.	Metering and Measuring Standards – NS NTQ transmission losses	NSPML, Nalcor	Metering and measuring standards used in calculation of NS –NTQ Path Peak and Off-Peak Hour transmission losses	NSTUA, Schedule 3, s. 6	Completed
9.	NB Back-up Capacity Agreement	Bayside Power L.P,	Emera’s provision of backup Capacity to NB to Nalcor until March 31, 2021	NBTUA, s. 2.1(d)	Expect completion in 2017
10.	IOA – ML Transmission Procedures	NSPI, NLH	Rules and practices applicable to administration of transmission service over the ML	IOA, Schedule D	Completed
11.	IOA – Reserve Sharing	NSPI, NLH	Sharing of energy and reserves between the Parties to improve Reliability	IOA, Schedule A	Expect completion in 2017
12.	IOA – Description of Interconnection Facilities	NSPI, NLH	Description of Interconnection Facilities for which each Party is responsible	IOA, Schedule B	Expect completion in 2017
13.	IOA – Functional Operating relationship	NSPI, NLH	Various matters relating to operating relationship	IOA, Schedule C	Expect completion in 2017

14.	IOA – Operating Procedures	NSPI, NLH	IOC to develop “operating procedures”	IOA s.7.2 and s. 7.4(a)	Expect completion in 2017
15.	IOA – Schedule A1.0	NSPI, NLH	Parties to prepare a plan for NLH participation in Reliability Assessment Program (“RAP”)	IOA Schedule A1.0	Completed
16.	ML TSA – ML Scheduling Process	Emera and Nalcor	Scheduling process applicable to the provision of Firm Point-to-Point Transmission Service	MLTSAs, Schedule 2	Expect completion in 2017
17.	Amendments to Formal Agreements	Emera, Nalcor	Amendments to Formal Agreements required by Sanction Agreement	Sanction Agreement	Completed
18.	Energy Access Agreement	Emera, Nalcor	Commitments regarding access to market priced energy	Compliance Filing, Appendix A	Completed
19.	Balancing Service Agreement	Emera, Nalcor	Nalcor commitment to provide balancing services from generation sources in NL for 25 years.	Energy Access Agreement Term Sheet, s. 7(g) and Appendix 1	Completed
20.	Assignment of Transmission Rights under ML(E)TSA	Emera, Nalcor	Assignment of Transmission Rights	ML(E)TSA, s. 3.3 (h)	Expect completion in 2017
21.	Assignment of Energy Access Agreement	Emera, Nalcor, NSPI and NEM	Assignment/assumption of Nalcor’s rights and obligations to/by NEM	EAA s. 15.1 (a)	Expect completion in 2017
22.	Assignment of Nalcor Master Agreement (EAA Schedule 2)	Nalcor, NSPI and NEM	Assignment/assumption of Nalcor’s rights and obligations to/by NEM	Nalcor Master Agreement s. 10.5 (a)	Expect completion in 2017
23.	JOA-Joint Operating Committee (“JOC”)	Nalcor and NSPML	Establish/Operationalize JOC	JOA s.s. 3.1, 3.5	Completed
24.	NS Transmission Utilization Agreement	Nalcor and Emera	Status of Emera firm Point to Point Transmission Service	NSTUA s.s.2.2 (a)-(c)	Completed



LCP - ML PROJECT

SITE VISIT REPORT OCTOBER 25 -27, 2016

Prepared for: Natural Resources Canada and Emera

IE Point of Contact: Nik Argirov

Date: December 05, 2016

Quality Assurance Statement

Office Address	740-1185 W Georgia Street, Vancouver BC, V6E 4E6
Prepared by	Tim Little, Paul Hewitt, Hamdy Khalil & Nik Argirov
Reviewed by	Nik Argirov & Howard Lee
Approved for Issue by	Howard Lee

Disclaimer

This document contains information from MWH which may be confidential or proprietary. Any unauthorized use of the information contained herein is strictly prohibited and MWH shall not be liable for any use outside the intended and approved purpose.



This page left intentionally blank



TABLE OF CONTENTS

1. GENERAL	1
2. NEWFOUNDLAND PROJECT SITES – OCTOBER 25, 2016	2
3. NOVA SCOTIA PROJECT SITES – OCTOBER 26 - 27, 2016	11
4. TRIP CLOSURE MEETING	22
5. COMMENTS	22



This page left intentionally blank



1. GENERAL

The MWH Independent Engineer (IE) team, together with a representative of Natural Resources Canada participated in the site visit for the Maritime Link (ML) project. The site visit took place in the provinces of Newfoundland and Nova Scotia during the period extending from October 25 – 27, 2016. Emera senior management representatives, Richard Janega, President and CEO of Emera Newfoundland & Labrador and Ken Meade, Assistant Project Manager, accompanied the MWH team as listed below.

IE team:

- Nik Argirov (IE Team Lead)
- Tim Little (IE Geotechnical Subject Matter Expert (SME))
- Paul Hewitt (IE Cost & Schedule SME)
- Hamdy Khalil (IE Transmission Lines SME)

The trip itinerary was as follows:

October 24:

- Arrive and overnight in Deer Lake NL

October 25:

- Start from Deer Lake
- Bottom Brook converter station/substation HVDC and HVAC transmission lines
- Overnight in Deer Lake

October 26:

- Standby for helicopter (cancelled due to weather)
- Travel from Deer Lake NL to Sydney NS
- Overnight in Sydney

October 27:

- Sydney Maritime Link project office for a Field Level Risk Assessment (FLRA) and to pick up hard hats and safety vests & glasses
- Point Aconi landfall and transition compound site
- Cape Breton HVDC transmission line
- Woodbine converter station/substation Big Lorraine grounding site
- Depart Sydney for home bases

November 04:

- Trip closure meeting via conference call
-



2. NEWFOUNDLAND PROJECT SITES – OCTOBER 25, 2016

The Newfoundland portion of the project includes: (a) approximately 142 km of steel tower 200 kV HVDC transmission line from the existing Bottom Brook substation to Cape Ray, (b) approximately 20 kilometers of grounding line from Bottom Brook to Indian Head and (c) approximately 160 km of Wood H-Pole 230 kV HVAC transmission line from Bottom Brook to Nalcor's existing Granite Canal Hydroelectric Generating Station. The associated infrastructure includes: (i) a new converter station and substation expansion at Bottom Brook, (ii) a switchyard at Granite Canal, (iii) a transition compound, (iv) 2 km of underground cable and an onshore cable anchor at Cape Ray and (v) a marine ground at Indian Head.

Transportation to all sites was by road. The original plan to travel by helicopter along the HVAC transmission line from Bottom Brook station to Granite Falls station, was canceled due to weather conditions on October 25 and 26.

Bottom Brook converter station/substation

Active construction was in progress at the Bottom Brook site, and substantial work progress had occurred since the previous IE site visit in August 2016. The IE team was first given a safety briefing and reviewed the site FLRAs, and was then escorted around the site by an Emera construction manager.

The steel frame of the converter building was erected, including the corrugated steel sheeting (Q deck) component of the roof. Installation of insulated wall cladding had recently commenced but was halted due to surface buckling problems. A revised cladding installation procedure was proposed but had yet not been implemented at the time of the site visit. Inside the building, the southwest corner of the concrete floor slab had been placed and the other areas of the floor were at various stages of foundation preparation and installation of welded wire mesh reinforcement. Insulated tarps were being installed in the southeast corner in preparation for an upcoming concrete placement.

Outside the converter building, more than 300 precast concrete footings and 5 cast-in-place footings were installed. The footings located within about 10 m of the building outline have not yet been installed to allow access for equipment to install the building cladding. All footings are scheduled to be completed by mid-December.

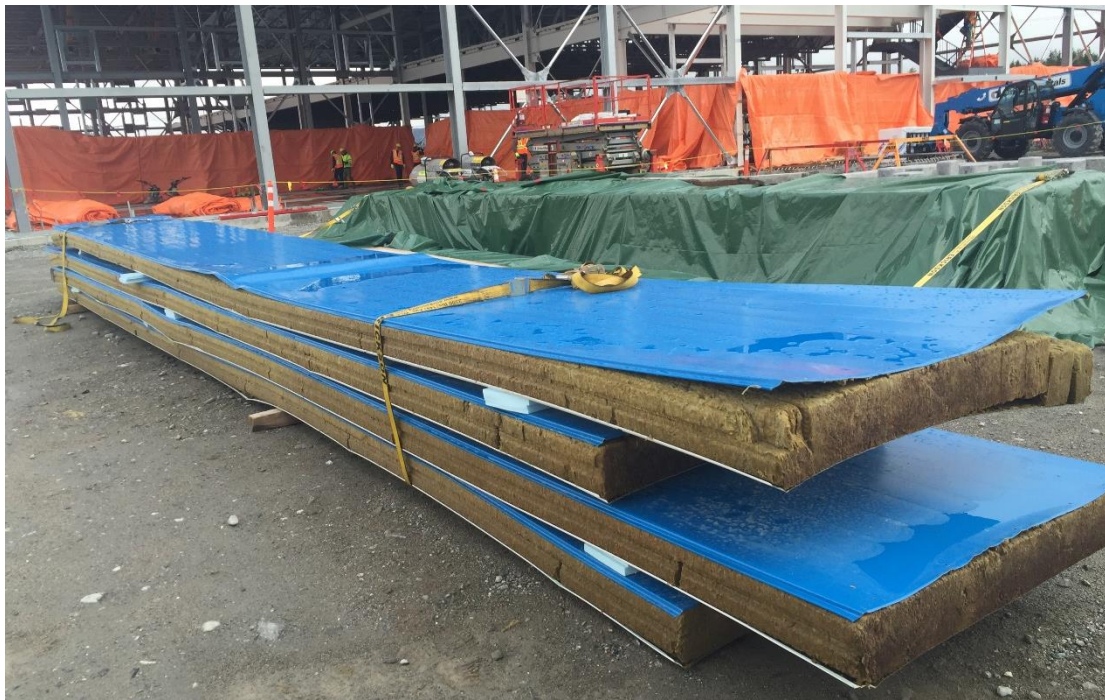
Most of the structural steel in the substation was erected and circuit breakers were installed on their footings. Cable installations were in progress.



Photo 1 - Bottom Brook –steel frame of converter building.



Photo 2 - Bottom Brook – welded wire fabric reinforcement installed in preparation for converter building concrete floor slab placement. Insulated tarps are being installed in background to maintain adequate temperature for concrete curing. Roof trusses and Q deck roof visible at top of photo.



Photos 3 & 4 - Bottom Brook – buckling of insulated wall cladding panel that occurred when initial installation was attempted.



Photo 5 - Bottom Brook – general view of completed structural steel in substation with cable duct in foreground.



Photo 6 - Bottom Brook – ABB circuit breakers installed on concrete footings.



Photo 7 - Bottom Brook – grouting the base of a recently-installed steel structure.



Photo 8 - Bottom Brook – Foundation work for lightning tower.



HVDC transmission line

The IE team visited a section of this line near Bottom Brook where steel towers are being installed by Rokstad Power. The work in this section includes construction of a temporary access road along the right-of-way.



Photo 9 - HVDC line – panorama view of HVDC right of way from site SA7. Right-of-way crosses Bottom Brook at left. Steel for tower mobilized to site at right.



Photo 10 - HVDC line – Right of way clearing

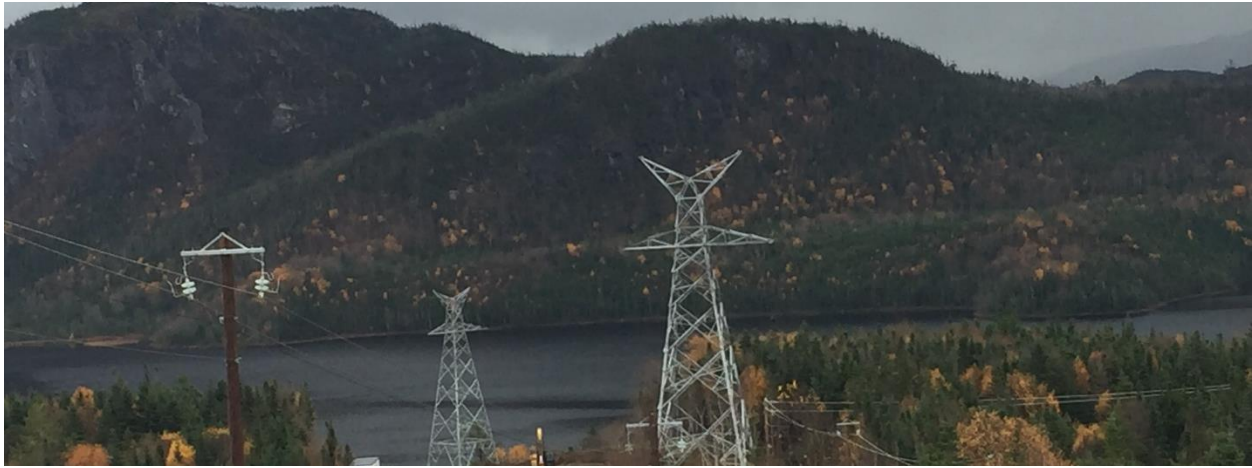


Photo 11 - HVDC line coming to the switchyard.



Photos 12 & 13 - HVDC line – steel tower footings installed on sloping ground at site SA7.



Photo 14 - HVDC – Structural members ready for tower assembly



Photo 15 - HVDC – Erected lattice structure tower



HVAC transmission line - Burgeo Highway

The IE team drove several kilometers along the Burgeo Highway to view the ongoing HVAC line installation by PowerTel. The IE team also saw the stringing and access plans for the area between STR 259 and STR 280 where access plan #'s 106, 107, and 108 were indicated. Structure numbers that are accessible from each access plan was also highlighted.



Photo 16 - Westerly view along HVAC line along Burgeo Highway, with Tower 259 at left. Line tensioning of section to Tower 280 is in progress. Existing line at right.



Photo 17 - HVAC – Easterly view looking beyond STR 259. New HVAC line at the right and existing line at left. Structure installation complete and waiting for the stringing.



3. NOVA SCOTIA PROJECT SITES – OCTOBER 26 - 27, 2016

In Nova Scotia the subsea cables will come ashore just west of the existing Point Aconi thermal generating station. The Nova Scotia portion of the project includes approximately 46 km of 200 kV HVDC transmission line from Point Aconi to the Woodbine converter station site, and 41.4 km of grounding line from Woodbine to the Big Lorraine grounding site. Associated infrastructure includes an onshore cable anchor and cable transition compound at Point Aconi, a transition compound, converter station and substation expansion at Woodbine, a marine ground at Big Lorraine, and two sections of underground cable each of about 1 km length at Point Aconi and Woodbine. Most of the Nova Scotia rights of way (ROW) for the new lines either parallel or are close to existing access roads or existing transmission rights of way.

The team started from Sydney in the morning, stopped at the local Maritime Link project office for a safety briefing and to pick up safety vests and hard hats. The team then proceeded in sequence to the following sites:

Point Aconi Landfall and Transition Compound Sites

The horizontal directional drilling was successfully completed since the previous IE site visit in June 2016 and there was no construction activity at the time of this site visit. The HDD landfall site was smoothly graded and clean.

At the transition compound site, concrete foundations were completed and there was no construction activity at the time of the site visit. The site was well graded and clean and ready for equipment installation.



Photo 18 - Point Aconi – landfall site after completion of HDD drilling.



Photo 19 - Point Aconi landfall site – temporary protective cover over HDD drill hole.



Photo 20 - View from transition compound site towards Point Aconi landfall. Underground HVDC cables will be installed along side of road.

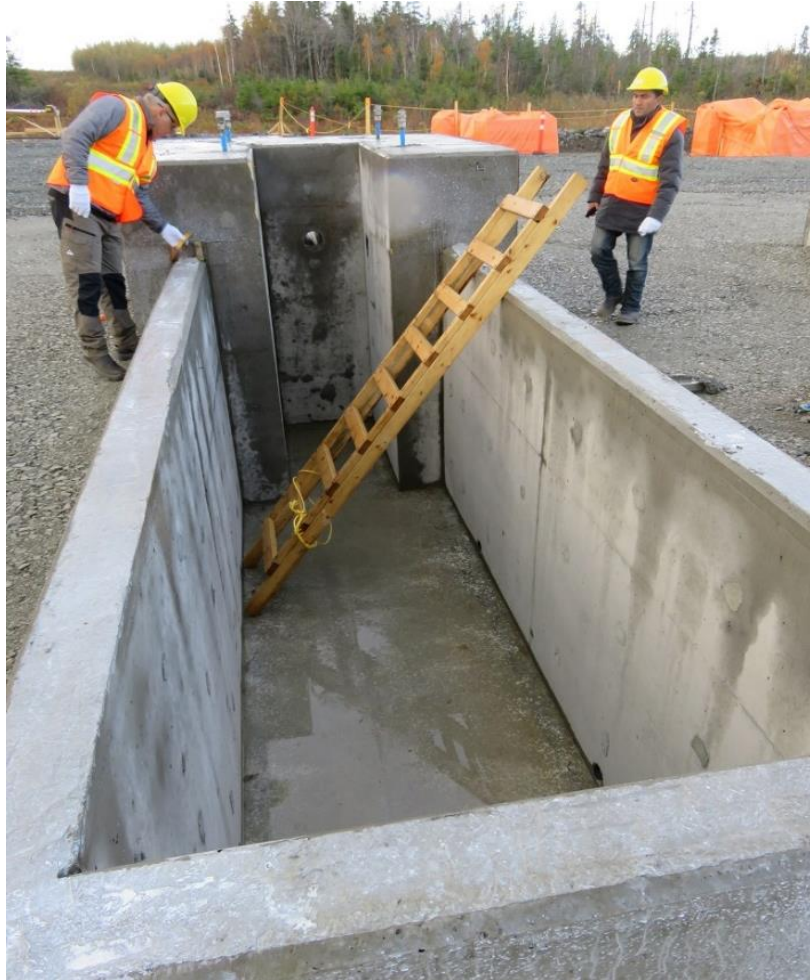


Photo 21 - Point Aconi transition compound – completed concrete vault with footing for termination structure. The HVDC land cable will transition in the vault from underground to overhead. Other concrete footings are covered by tarps in background.

Cape Breton HVDC transmission line

The IE team viewed the HVDC transmission tower construction works during the drive from Point Aconi to Woodbine, including stops to inspect works at several locations. Both freestanding and guyed towers at various stages of construction were viewed.



Photos 22, 23 & 24 - Cape Breton HVDC line – assembled guyed tower on ground ready for installation on pedestal foundation at left. Recently installed freestanding tower in centre background.



Photo 25 - Cape Breton HVDC line – typical grouted thread bar foundation anchor for guyed tower.



Photo 26 - Cape Breton HVDC line – tower erection in progress adjacent to Woodbine converter station site.



Photo 27 - Cape Breton HVDC line – tower erection in progress adjacent to Woodbine converter station site.



Woodbine converter station/substation

Although generally less advanced than Bottom Brook, active construction was in progress at the Woodbine site. Substantial work progress had occurred since the previous IE site visit in June 2016. The IE team was first given a safety briefing and reviewed the site FLRAs, and was then escorted around the site by an Emera construction manager.

Similar to Bottom Brook, the steel frame of the converter building was erected, including the corrugated steel sheeting (Q deck) component of the roof. Installation of insulated wall cladding had also recently commenced but was also halted due to the same surface buckling problem as experienced at Bottom Brook. Inside the building, foundation preparation and installation of welded wire mesh reinforcement for the concrete floor slab were in progress.

Outside the converter building, about 400 precast and cast-in-place concrete footings were installed, with a few remaining to be completed by December.

All 375 concrete foundations in the substation were installed and some steel erection and cable installations were in progress.

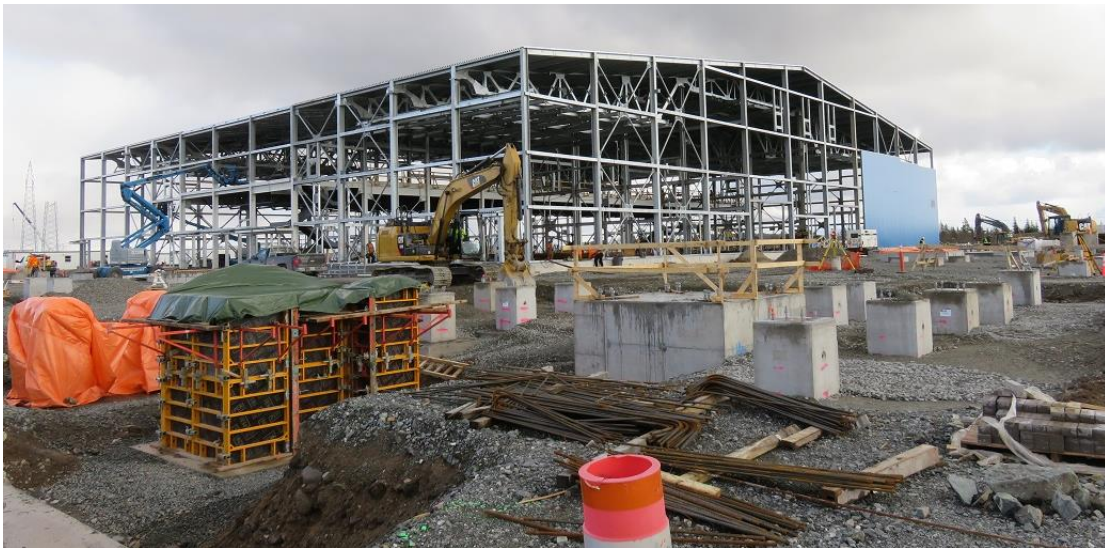


Photo 28 - Woodbine – general view of converter building steel frame, with section of wall cladding installed at right side. Both precast and cast-in-place concrete footings are shown in foreground.



Photo 29 - Woodbine – close-up view of installed wall cladding showing several surficial buckled zones. This cladding was to be removed and replaced.



Photo 30 - Woodbine – interior of converter building with concrete floor reinforcement in place in some areas.



Photo 31 - Woodbine – view along cable ducts in AC substation , with numerous precast concrete footings installed and ready for structural steel and equipment installation.



Photo 32 - Woodbine – ABB circuit breakers awaiting installation in switchyard. Spools of cable and other materials located at left side of photo.



Photo 33 - Woodbine – ABB transformer installed on cast-in-place concrete foundation, with surrounding gravel-filled oil spill containment pit.



Big Lorraine grounding site

The Big Lorraine grounding site civil works were completed since the last IE site visit in June 2016 and there was no construction activity at the time of this site visit. The grounding line installation up to the site has been completed.

The area inside the protective rock berm was smoothly graded. The IE team was informed that the caissons for the grounding wells had been installed and were temporarily buried by gravel. The ground rods and connecting electrical cables are not yet installed .



Photo 34 - Big Lorraine grounding site – panorama view inside protective rock berm. Caissons for ground rods are installed below gravel in area behind figures in centre of photo.



Photos 35 & 36 - Big Lorraine grounding site – end of the completed grounding line, awaiting completion of grounding site.



4. TRIP CLOSURE MEETING

A team trip closure conference call was held on November 4, 2016. The IE team was informed that the modified converter building cladding installation details were being implemented and the cladding was now being successfully installed. The cladding panels have been reduced in length by 50% and additional lifting points and supports are being used during installation.

5. COMMENTS

It was evident that the work on site is proceeding with good quality and safety awareness, and with the exception of the HVDC transmission line, within the baseline schedule. This line is forecasted to be completed by the contract completion date which aligns with the timing needed to support project commissioning activities.



LCP - ML PROJECT

SITE VISIT REPORT JUNE 15, 2016

Prepared for: Natural Resources Canada and Emera

IE Point of Contact: Nik Argirov

Date: August 21, 2016

Quality Assurance Statement

Office Address	740-1185 W Georgia Street, Vancouver BC, V6E 4E6
Prepared by	Tim Little, Hamdy Khalil & Nik Argirov
Reviewed by	Nik Argirov & Howard Lee
Approved for Issue by	Howard Lee

Disclaimer

This document contains information from MWH which may be confidential or proprietary. Any unauthorized use of the information contained herein is strictly prohibited and MWH shall not be liable for any use outside the intended and approved purpose.



This page left intentionally blank



TABLE OF CONTENTS

1. GENERAL	1
2. NOVA SCOTIA PROJECT SITES – JUNE 15, 2016.....	1
3. COMMENTS	18



This page left intentionally blank



1. GENERAL

The MWH Independent Engineer (IE) team, together with a representative of Natural Resources Canada participated in the site visit for the Maritime Link (ML) project in Nova Scotia on June 15, 2016. Emera senior management representative, Ken Meade, Assistant Project Manager, accompanied the MWH team as listed below.

IE team:

- Nik Argirov (IE Team Lead)
- Tim Little (IE Geotechnical Subject Matter Expert (SME))
- Paul Hewitt (IE Cost & Schedule SME)
- Hamdy Khalil (IE Transmission Lines SME)

Visits were made to the following project sites:

- Point Aconi landfall site
- Transmission Line Materials storage yards
- HVDC line from Point Aconi to Woodbine (with stops at towers 151, 144, 164)
- Woodbine Converter station and AC switchyard expansion
- Grounding line from Woodbine to Big Lorraine
- Big Lorraine grounding site

Transportation to all sites was by road. The team started at the Sydney Maritime Link project office on the morning of June 15 for a Field Level Risk Assessment (FLRA) and to pick up hard hats and safety vests & glasses. The team then visited the above-listed project sites and returned to the Sydney office at the end of the day for a trip closure meeting. Joseph Krupski of Natural Resources Canada joined the meeting via conference call. Photographs of major features were taken during the site visits to document the current status of construction; selected photos are included in this report.

The IE team noted that safety was a top priority throughout the site visits. At each project site, a representative from either Emera or the site contractor reviewed the applicable FLRA with the IE team and escorted the team around the site.

2. NOVA SCOTIA PROJECT SITES – JUNE 15, 2016

In Nova Scotia the subsea cables will come ashore just west of the existing Point Aconi thermal generating station. The Nova Scotia portion of the project includes approximately 46 km of ± 200 kV HVDC transmission line from Point Aconi to the Woodbine converter station site, and approximately 40 km of grounding line from Woodbine to the Big Lorraine grounding site. Associated infrastructure includes an onshore cable anchor and cable transition compound at Point Aconi, a transition compound, converter station and substation expansion at Woodbine, a marine ground at Big Lorraine, and two sections of underground cable each of about 1 km length at Point Aconi and Woodbine. Most of the Nova Scotia rights of way (ROW) for the new lines either parallel or are close to existing access roads or existing transmission rights of way.



The team started from Sydney in the morning, and first stopped at the local Maritime Link project office for a safety briefing and to pick up safety vests and hard hats. The team then proceeded in sequence to the following sites:

Point Aconi Landfall Site

The contractor, Direct Horizontal Drilling, was set up on site and surface casing installation was in progress. The IE team noted that the work site was very well-organized and tidy.

The initial 42-inch diameter steel casing was being installed at an angle of 16 degrees below horizontal. Casing installation is an incremental process. First a 36-inch diameter drill hole is advanced about 2 m using an auger bit, then the casing is driven to the end of the augured hole using a casing hammer. Following each incremental advance, an additional length of casing is then welded onto the top end. At the time of the site visit, the bottom of the casing was at a depth of 34.4 m, and contractor staff advised that the target depth was about 46 m. Based on drill cuttings being removed from the hole during the site visit, it appeared that the drill hole had reached the top of the sedimentary bedrock. Contractor staff advised that driving the last run of casing had been difficult, as evidenced by a split in the heavy duty casing hammer.

The IE team also viewed the stainless steel drilling string (tool) that will be used to drill the Horizontal Directional Drilling (HDD) hole and a Contractor representative explained the details of the drill bits, rods and steering mechanisms that will be used to achieve the designed hole alignment. The drilling fluid to be used was described as a "gel mud". Drill cuttings that will be recovered are to be mixed with peat moss and placed in a designated location near the landfall site.

The contractor is currently trucking water for HDD requirements to the site from a nearby authorized pond. In anticipation of higher water demand during the subsea drilling, a temporary pumping system was being installed to supplement the water supply with seawater.



Photo 1 – HDD drill rig installing surface casing at 16 degrees below horizontal.



Photo 2 - Large 42-inch diameter pipe is a steel casing. Smaller pipe inside casing is the drill rod which connects to a 36-inch diameter auger bit being used to drill the pilot hole. Drill operator is located in glass booth at right side behind drill rig.



Photo 3 - Auger drill bit used to advance drill hole ahead of casing. Photo is taken from inside of drill operator's control room.



Photo 4 - Casing hammer used to drive 42-inch casing.



Photo 5 - Crack in casing hammer resulting from driving casing against high resistance.



Photo 6 - Drill bit and following drill rod sections. Blue sections contain movable components that are used to steer the drill along its design alignment.

Transmission Construction Materials storage yards



Photo 7 - General view of yard.



Photo 8 - Guy wire for towers.



Photo 9 - Threadbar anchors for tower footings.



Photo 10 - Grillage and tower steel.



Photo 11 - Grillage footing components.



Photo 12 - Vibration Dampers containers



Photo 13 - Type 1 grillage (footing) for rock conditions.



Photo 14 - Type 2 grillage (footing) for soil conditions.



Photo 15 - DC conductor spools.

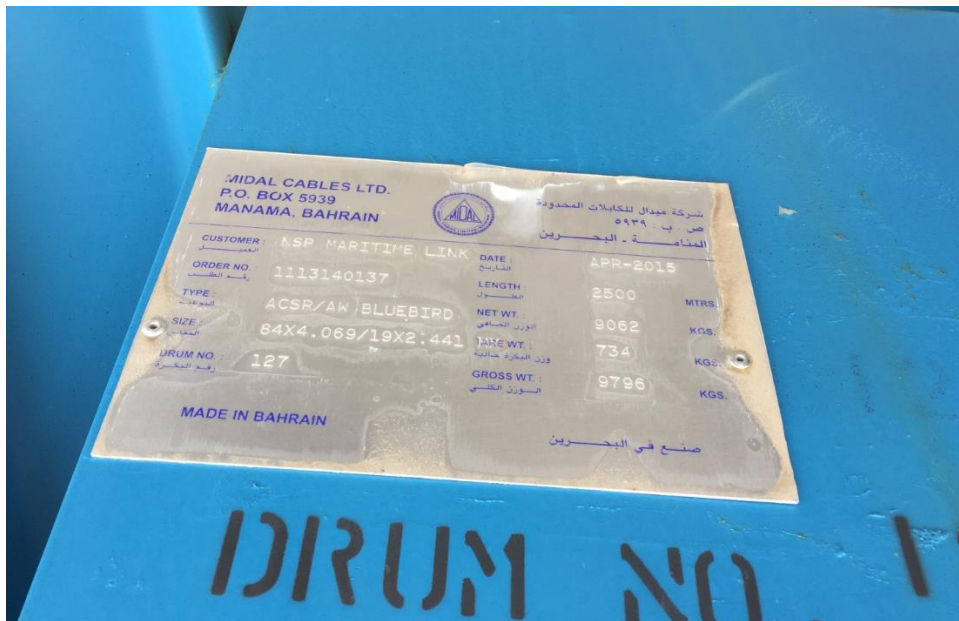


Photo 16 - ACSR Bluebird type conductor



HVDC line from Point Aconi to Woodbine

Total structures are 164; 48 Self-supporting and 116 guyed structures. Total installed structures are 3.



Photo 17 - Tower 151 (left) and adjacent tower (right).



Photo 18 - Tower 144



Photo 19 - Pin footing for tower 144.



Photo 20 - Marking to confirm the bolt torque



Photo 21 - Foundation preparation for tower 164 (last tower before Woodbine convertor station)



Photo 22 - Assembled type 2 grillages for tower 164 foundation. Rock covered slope in background is typical of permanent erosion protection along roads and ditches.

The IE team noted extensive use of shot rock for permanent erosion control on excavated soil surfaces along ditches, roads and substation areas. This cover appeared to well-installed and effective.

Also noted, the use of grillages on all soil types including rocky soil while there are no concrete foundation types.



Woodbine Converter station and AC switchyard expansion

At Woodbine, the new DC line will transition from overhead to underground where it will cross other existing overhead AC lines. IE observed significant advancement in construction progress of this site. Many of the cast in place as well as precast foundations in the AC switchyard expansion site are completed. The concrete foundations of the Converter building are completed and ready for erection of the steel frame of the building.



Photo 23 - Expansion of existing AC switchyard. Most of the concrete footings in foreground are precast.



Photo 24 - Components for new DC switchyard.



Photo 25 - Precast concrete sections for cable ducts.



Photo 26 - Converter station concrete foundation ready for the building steel structure erection.



Photo 27 - Converter station foundation.

Grounding line from Woodbine to Big Lorraine

Approximately 90% of the poles already installed with 80 poles remaining to be installed. Approximately 65% of the stringing is complete.



Photo 28 - Stringing grounding line across road near entrance to Woodbine converter station (PowerTel is contractor)



Big Lorraine Grounding Site

Since the last site visit in July 2015, the access road from the local highway to the waterfront had been constructed. Construction of the final section of access road along the waterfront to the grounding site was in progress. Overburden stripping of the alignment was almost completed, and drilling of blast holes to remove high points of bedrock to design grade had started. The IE team noted that sediment fencing and scattered straw were the primary measures for temporary erosion and sediment control and generally appeared to be effective.



Photo 29 - Rock berm for grounding element wells is to be constructed across this bay of water.



Photo 30 - Overburden stripping of access road alignment in progress.



Photo 31 - Access road alignment after stripping of overburden. Silt fences and straw bales are elements of erosion and sediment control. Light grey material in center background is piles of drill cuttings from drilling of blast holes.



Photo 32 - Access road alignment adjacent to water area where rockfill berm will be constructed.

3. COMMENTS

It was evident that the work on site is proceeding with good quality and safety awareness and with the exception of the HVDC transmission line, within the baseline schedule.



LCP - ML PROJECT

SITE VISIT REPORT AUGUST 9 -11, 2016

Prepared for: Natural Resources Canada and Emera

IE Point of Contact: Nik Argirov

Date: October 20, 2016

Quality Assurance Statement

Office Address	740-1185 W Georgia Street, Vancouver BC, V6E 4E6
Prepared by	Tim Little, Paul Hewitt, Hamdy Khalil & Nik Argirov
Reviewed by	Nik Argirov & Howard Lee
Approved for Issue by	Howard Lee

Disclaimer

This document contains information from MWH which may be confidential or proprietary. Any unauthorized use of the information contained herein is strictly prohibited and MWH shall not be liable for any use outside the intended and approved purpose.



This page left intentionally blank



TABLE OF CONTENTS

1. GENERAL	5
2. NEWFOUNDLAND PROJECT SITES – AUGUST 9 -11, 2016.....	5
3. COMMENTS.....	25



This page left intentionally blank



1. GENERAL

The MWH Independent Engineer (IE) team, together with a representative of Natural Resources Canada participated in the site visit for the Maritime Link (ML) project in Newfoundland on August 9 - 11, 2016. Emera senior management representatives, Gerry Brenan - Project Manager and Ken Meade - Assistant Project Manager, accompanied the MWH team as listed below.

IE team:

- Nik Argirov (IE Team Lead)
- Tim Little (IE Geotechnical Subject Matter Expert (SME))
- Paul Hewitt (IE Cost & Schedule SME)
- Hamdy Khalil (IE Transmission Lines SME)

Visits were made to the following sites in sequence:

August 09:

- Indian Head grounding site
- Cape Ray landfall site
- Cape Ray transition compound site

August 10:

- Bottom Brook convertor station/switchyards
- Burgeo Highway HVAC transmission line

August 11:

- Granite Canal HVAC transmission line
- Granite Canal Switchyard

2. NEWFOUNDLAND PROJECT SITES – AUGUST 9 -11, 2016

The Newfoundland portion of the project includes approximately 142 km of steel tower 200 kV HVDC transmission line from the existing Bottom Brook substation to Cape Ray, about 20 kilometres of grounding line from Bottom Brook to Indian Head and approximately 160 km of Wood H-Pole 230 kV HVAC transmission line from Bottom Brook to Nalcor's existing Granite Canal Hydroelectric Generating Station. The associated infrastructure includes a new converter station and substation expansion at Bottom Brook, a switchyard at Granite Canal, a transition compound, 2 km of underground cable and an onshore cable anchor at Cape Ray and a marine ground at Indian Head.

Transportation to all sites was by road. The team started at the Stephenville Maritime Link project office on the morning of August 09 for a Field Level Risk Assessment (FLRA) and to pick up hard hats and safety vests & glasses. The team then visited the above-listed project sites over three days and returned to Deer Lake on the late afternoon of August 11 for travel to home bases. A trip closure meeting was held via conference call on August 12, 2016 .



Indian Head Grounding Site

The Indian Head Grounding Site Civil works were completed since the last IE site visit in November 2015 and there was no construction activity at the time of this site visit. The gravel access road was smoothly finished and graded, roadside safety barriers were installed where required, road ditches were clear, and rock cuts along the end section of road were scaled and stable. The IE team was informed that the rock quarry site had been decommissioned and noted that the access road to the site was blocked with small berms of shot rock to prevent vehicle access.

Wood poles were installed along most of the site access road except for the last six(?) poles, and grounding line was strung along the initial section of access road near the highway. The pad for the grounding line terminal structure is ready for installation of equipment.

The protective rock berm constructed in water across a small bay had a uniform finished surface and all gravel surfaces and pads at the grounding site were smoothly finished and graded. The caissons for the 40 grounding wells had been installed, complete with concrete lids. The IE team was informed that the grounds were not yet installed.



Photo 1 - Indian Head Grounding Site – View towards Indian Head site along completed site access road near Hwy. 490 turnoff. Grounding lines have been strung along this section of road.



Photo 2 - Indian Head Grounding Site – View along completed site access road towards security gate and Indian Head site. Grounding lines have not yet been strung along this section of road. Showing an angle pole with a stub.



Photo 3 - Close picture for the strung grounding line – Sample tangent structure



Photo 4 - Close picture for the strung grounding line – Sample dead-end structure



Photo 5 - Indian Head Grounding Site – View looking up access road at left. Overhead lines will terminate at pad at centre right side of photo.



Photo 6 - Indian Head Grounding Site – Protective rock berm constructed in water. Construction access road in background has been decommissioned.



Photo 7 - Indian Head Grounding Site – View inside of rock berm (electro yard) showing row of 40 grounding wells awaiting installation of grounding electrodes, with adjacent cable duct.



Cape Ray Landfall Site

The horizontal directional drilling was completed earlier in the year and there was no construction activity at the time of the site visit. The HDD site was smoothly graded and clean and ready for equipment installation.



Photo 8 - Cape Ray landfall site – HDD drill pad.



Photo 9 - Cape Ray landfall site – temporary protective cover on one of the two HDD hole collars.



Cape Ray Transition Compound Site

The transition compound site was completed and there was no construction activity at the time of the site visit. The site was well graded and clean and ready for equipment installation.



Photo 10 - Cape Ray – view from HDD site looking up completed access road to the transition compound site. The HVDC line between the HDD site and the transition compound will be buried beside the road.



Photo 11 - Cape Ray transition compound – view looking across compound site towards access road.



Photo 12 - Cape Ray – view looking northerly from transition compound towards cleared DC line right-of-way, across centre of photo.



Bottom Brook Converter Station and Switchyard

Bottom Brook was a very active construction site. The IE team was first given a safety briefing and reviewed the site FLRAs, and was then escorted around the site by an Emera construction manager and an ABB project manager

The converter building will be a steel frame structure with prefabricated insulated cladding. Erection of the steel frame for one section of the building was in progress while concrete foundations and cable ducts were being completed for the adjacent section. Numerous precast and cast-in-place concrete footings for electrical switchyard equipment had either been recently installed or installation was in progress. Erection of steel switchyard structures was also in progress.

The construction site was well organized and tidy. The IE team noted attention to environmental protection and that sediment and erosion control measures were in place around the site including rock-lined ditches, silt fences and sediment ponds. The team also noted examples of good safety practices, such as barriers and flagging around excavations and active work areas, safety caps on exposed rebar ends, and an anemometer mounted on the top of a long crane boom to monitor wind conditions during steel erection.



Photo 13 - Bottom Brook – partially-erected steel frame for converter building. The concrete foundation in foreground indicates the full extent of the building when it is completed.



Photo 14 - Bottom Brook – switchyard construction in progress, with recently erected steel structures at right and other assembled structures laying on the ground awaiting erection at left.



Photo 15 - Bottom Brook – concrete placement in progress for converter transformer foundation. Note safety caps on exposed vertical rebar ends.



Photo 16 - Bottom Brook – General view of a cast-in-place concrete equipment footing in foreground, with closely-spaced precast concrete footings being installed in centre right of photo. Note the safetycaps on exposed horizontal rebar ends.



Photo 17 - Bottom Brook – Circuit breakers supplied by ABB, awaiting installation.



HVAC Transmission Line - Burgeo Highway

The IE team drove several kilometres along the Burgeo Highway to view the western end of the HVAC line. Wood poles were installed and the line had recently been strung along this section. Some of the terrain is challenging, with many poles installed on steep sidehill locations.



Photo 18 - HVAC line at crossing of Southwest Brook along Burgeo Highway, with three-pole angle structures in foreground and two-pole structures in background.

HVAC Transmission Line - Granite Canal

After an overnight stay at the Granite Canal camp, the IE team was given a safety briefing and reviewed the transmission line FLRA, then drove about 10 km along the east end of the HVAC line. The team was accompanied by the Emera safety officer and environmental monitor.

The line in this area is generally parallel to the existing gravel road and the contractor has constructed short access trails from the road to the right-of-way at regular intervals. Timber mats are used for crossing bogs and small watercourses. Line installation was progressing westerly from Granite Canal. The IE team was informed that all line installation to date has been done by land, although helicopters may be used in some of the less-accessible central portion of the HVAC corridor.



Photo 19 - HVAC line near Granite Canal – completed section of line at left, and poles with pulleys in place, ready for line stringing at right.



Photo 20 - HVAC line near Granite Canal – Pictures show rider poles used for stringing over roads



Photo 21 - HVAC line near Granite Canal – typical wood pole foundation in boggy ground; pole is installed inside a vertical section of corrugated metal pipe (culvert) which is then backfilled with crushed rock.



Photo 22 - HVAC line near Granite Canal – typical wood pole tangent structure (to the right) and dead-end structure to the left



Photo 23 - HVAC line near Granite Canal – Picture on the left shows the pole tag (80-1 or 80 feet Class 1) and the picture on the right shows typical structure number tag.



Photo 24 - HVAC line near Granite Canal – Picture on the left shows some of the materials (grounding rods and armor rods) and the picture on the right shows the vibration dampers.



Photo 25 - HVAC line near Granite Canal – End of stringing section applying grounds.



Photo 26 - HVAC line access near Granite Canal – access trail through area of small trees at left, and bog crossing with timber mats at right.



Photo 27 - HVAC line near Granite Canal – typical crossing of small watercourse using timber mats.



Granite Canal Switchyard

Installation of equipment footings and foundations was in progress at the time of the site visit. The IE team was first given a safety briefing and reviewed the site FLRA with an Emera construction manager and an ABB safety manager, then toured the site with the construction manager.

The IE team observed the installation of a large precast footing on the compacted and leveled sub-base. The team was informed that the contractor was readily achieving the maximum allowable alignment tolerance of 2 mm. Concrete for cast-in-place foundations must be hauled about 4 hours by road, which is a significant travel time. The team was informed that the contractor has been meeting the required target concrete properties.



Photo 28 - Granite Canal Switchyard – two precast concrete footings being delivered from St. John's.



Photo 29 - Granite Canal Switchyard – mobile crane placing precast concrete footing on prepared sub-base.



Photo 30 - Granite Canal Switchyard – compacting rockfill around recently-installed precast concrete footings.



Photo 31 - Granite Canal Switchyard – Construction of formwork for concrete foundation for shunt reactor equipment.



Photo 32 - HVAC line dead-end terminal structure adjacent to the Granite Canal switchyard. One side strung and the other side will be connected to the gantry structure in the switchyard.



Photo 33 - Granite Canal Switchyard – Dead-end terminal structure adjacent to switchyard.

3. COMMENTS

It was evident that the work on site is proceeding with good quality and safety awareness and with the exception of the HVDC transmission line, within the baseline schedule.

NOVA SCOTIA POWER MARITIME LINK

TECHNICAL CONFERENCE

DATE HEARD: Tuesday, November 8th, 2016

LOCATION: Halifax, Nova Scotia

PRESENTERS: Ms. Mary Ellen Greenough, NSPML

MR. Rene Gallant, NSPML

Mr. Rick (Richard) Janega, NSPML

Mr. Brian Rendell, NSPML

ATTENDEES: Mr. Richard Janega

NSP Maritime Link Inc.

Mr. Rene Gallant

NSP Maritime Link Inc.

Ms. Mary Ellen Greenough

NSP Maritime Link Inc.

Mr. Brian Rendell

NSP Maritime Link Inc.

Mr. Jeff Myrick

NSP Maritime Link Inc.

ATTENDEES:

Ms. Shellie Woolham

NSP Maritime Link Inc.

Ms. Virginia Crawford

Ms. Meaghan Haynes

Ms. Cinnamon Crewdson

Mr. Ezra van Gelder

NSP Maritime Link Inc.

Ms. Nicole Godbout

Nova Scotia Power Inc.

Mr. Bill Mahody

Consumer Advocate (CA)

Ms. Michelle Miller

Nova Scotia Environment

Ms. Nancy Rubin

Industrial Group

Mr. Stephen McGrath

Nova Scotia Department of Justice

Ms. Kim Himmelman

Nova Scotia Department of Energy

Mr. Steven Pronko

Ms. Jocelyn Fraser (Via Telephone)

Nova Scotia Utility and Review Board

Ms. Melissa MacAdam

Small Business Advocate (SBA)

Mr. John Athas (Via Telephone)

Daymark Energy Advisors on behalf of the
Small Business Advocate

Mr. Peter Craig

Department of Energy

Ms. Chrissy Campbell (Via Telephone)

Nova Scotia Environment

Ms. Sasha Irving

Nova Scotia Power Inc.

Recorded by:

Drake Recording Services Limited

1592 Oxford Street

Halifax, NS B3H 3Z4

Per: Cathy Kelly, Commissioner of Oaths

I N D E X O F P R O C E E D I N G S

PAGE NO.

MS. MARY ELLEN GREENOUGH - SAFETY MOMENT.....9

MR. RENE GALLANT - TRANSMISSION LINE UPDATE.....11

MR. RICHARD JANEGA - CONSTRUCTION UPDATE.....40

MR RENE GALLANT - CABLE LAY SCOPE OF WORK.....64

MR. BRIAN RENDELL - FINANCIAL UPDATE.....81

MS. MARY ELLEN GREENOUGH - REGULATORY PLANNING UPDATE...88

Tuesday, November 8, 2016 - 1:03 p.m.

6

1 (CONFERENCE OPENS)

2 MS. GREENOUGH: Well, good afternoon,
3 folks. I'm going to kick off our Maritime Link Technical
4 Conference, and so pleased that you could all join us this
5 afternoon. I'm Mary Ellen Greenough with NSP Maritime
6 Link and we're hoping that this live update will provide
7 you with a more detailed understanding of the project,
8 where it currently stands and the steps we're taking to
9 bring it in on time and on budget. And we'll hopefully
10 give you a very good chance to ask any questions that you
11 might have about the project at this time.

12 So, to start with a few housekeeping
13 matters. First of all, for those of you using wi-fi here
14 in the room, you can go to the network identified as
15 Windsor and the wi-fi code is internet. So, let me know
16 if you have any questions. It is a tricky one.

17 So, I'll also mention that washrooms are
18 through the doors in the back to your left. If you carry
19 down the hallway to the left, they're on the left side.
20 And to exit the hotel in the event of an emergency, we
21 actually have exits on either side of us. You'll notice
22 down the hall to the left there is an exit sign that takes
23 you down to the street level and, of course, to the right
24 we have our lobby, if you're closer there to be able to
25 get out.

1 I'd also ask that you please put your
2 phones on mute while the conference is in session and for
3 those of you on the phone lines, if you could apply the
4 mute function that would be helpful, as well. And we'll
5 give you a chance to check your messages at the break.

6 And so, you'll probably note as well that
7 we've got our transcribers in the back of the room and so
8 we want to, of course, transcribe this event in the
9 interest of openness and transparency and for those of you
10 speaking, so that we understand who you are, please do
11 identify yourselves whenever you're asking a question.

12 So, I'd like to move on to introductions.
13 So, to start with folks in the room, Shellie, perhaps
14 we'll go around the table and start with you.

15 **MS. WOOLHAM:** Sure, I'm Shellie Woolham
16 with NSPML.

17 **MR. GALLANT:** Rene Gallant, NSPML.

18 **MR. RENDELL:** Brian Rendell with NSPML, as
19 well.

20 **MS. HIMMELMAN:** Kim Himmelman, Nova Scotia
21 Department of Energy.

22 **MR. CRAIG:** Peter Craig with Department of
23 Energy.

24 **MR. JANEGA:** Rick Janega with NSPML.

25 **MR. MCGRATH:** Steve McGrath, Nova Scotia

1 Department of Justice.

2 **MR. PRONKO:** Steve Pronko with the UARB.

3 **MR. MAHODY:** Bill Mahody with the Consumer
4 Advocate.

5 **MS. RUBIN:** Nancy Rubin with the Industrial
6 Group.

7 **MS. MACADAM:** Melissa MacAdam with the
8 Small Business Advocate.

9 **MS. GREENOUGH:** okay. Thank you, and now
10 we'll move to the phone lines.

11 **MR. ATHAS:** John Athas with Daymark Energy
12 Advisors on behalf of the Small Business Advocate.

13 **MS. GREENOUGH:** Hi John.

14 **MR. ATHAS:** Hi.

15 **MS. CAMPBELL:** Chrissy Campbell, Nova
16 Scotia Environment.

17 **MS. GREENOUGH:** Hi Chrissy. Okay.

18 **MS. FRASER:** Jocelyn Fraser with the UARB.

19 **MS. GREENOUGH:** Hi Jocelyn. That's it?

20 Okay. Well, thanks very much folks. So, I'd like to now
21 move to our plan for the afternoon. And so, I have an
22 agenda up here where, of course, we have kicked off with
23 lunch and I'm in the midst of my overview.

24 As we always do at NSPML, we're going to be
25 moving to a Safety Moment which I will give.

1 From there, we're going to move onto a
2 Transmission Line Construction Update where Rene Gallant is
3 going to share with us our experiences on the transmission
4 line scope of work and our transition from an original
5 service provider who went into default to the service
6 providers that we use today.

7 Moving from there, Rick Janega will give us
8 a full construction update on the project and I believe
9 Rene will also be jumping in to provide a bit of detail on
10 the cable lay scope of work and the procedures that'll be
11 undertaken there.

12 Then we'll have a 15-minute break after
13 which Brian Rendell is going to share a financial update
14 on the project and share how we're maintaining budget on
15 the project.

16 And from there, I'm going to walk us
17 through a regulatory planning update and explain the
18 processes that we're going to undertake with you over the
19 coming months.

20 So, I'm going to turn it over to Rene. Oh,
21 I am not going to turn it over to Rene.

22 **MS. MARY ELLEN GREENOUGH - SAFETY MOMENT:**

23 **MS. GREENOUGH:** My apologies. So, I'm
24 going to move into a Safety Moment and so, for today's
25 Safety Moment, as they say on Game of Thrones, "Winter is

MS. MARY ELLEN GREENOUGH - SAFETY MOMENT

10

1 coming." And so, I wanted to give you a bit of an update
2 on winterizing your car so that we're ready for the cold
3 weather months to come.

4 So, here are a few tips for winterizing
5 your vehicle. First of all it's important to have your
6 battery and charging system checked for optimum
7 performance. Cold weather is hard on batteries.

8 This one I wasn't aware of: You need to
9 clean, flush and put a new antifreeze in your cooling
10 system, and as a general rule of thumb, this should be
11 done every two years. So, that's good information.

12 You also need to make sure your heaters,
13 defrosters and wipers work properly, so consider winter
14 wiper blades and use cold-weather washer fluid. As a
15 general rule, wiper blades should be replaced every six
16 months. So that's a good reminder.

17 Also, be diligent about changing the oil
18 and filter at recommended intervals as dirty oil can spell
19 trouble in the winter. So, consider changing to winter
20 weight oil.

21 And if you're due for a tune-up, it's
22 important to consider having that done before winter sets
23 in. Winter can magnify existing problems such as pings,
24 hard starts, sluggish performance or rough idling.

25 Another good piece of advice is to take

MS. MARY ELLEN GREENOUGH – SAFETY MOMENT

11

1 advantage of the change in season to have your brakes
2 checked.

3 So, those are all good tips, I think, as we
4 get ready for the winter season and with that, I will turn
5 it over to Rene for a Transmission Line Update. You're
6 going to get another mike. Yeah.

7 **MR. GALLANT:** You want me to speak? Oh, I
8 can hear myself now, it's working.

9 Okay. So, we've had one more person join
10 the table and when she walked in the room a lot of
11 people's eyes lit up the way mine did when I saw her back
12 at Nova Scotia Power for the first time. Nicole, do you
13 want to introduce yourself?

14 **MS. GODBOUT:** Good afternoon. Nicole
15 Godbout with Nova Scotia Power and, yes, I am back.

16 **MR. RENE GALLANT – TRANSMISSION LINE UPDATE:**

17 **MR. GALLANT:** Welcome back. Okay. So, we
18 want to reiterate Mary Ellen's welcome and thanks for
19 taking a little time out of your schedule to join us today
20 so, we can provide an update in the project. It's part of
21 our ongoing effort to try to be transparent.

22 In addition to filing our quarterly reports
23 with the UARB and that kind of thing that is required
24 under the order that approved the Maritime Link a number
25 of years ago we've been working away and trying to make

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

12

1 sure that in between we are coming out to see you
2 individually and having one-on-one discussions about where
3 we are and that we're also having these more open and
4 public technical conferences so we can share with you some
5 of the details of what's happening on the project. And of
6 course that's all in the goal that when we are in front of
7 a process you understand where we are and how we got here.
8 Then, if you have questions they're informed by some
9 things that have happened along the way and we're down to
10 some of the final details when we get this project
11 finished and we deliver it to Nova Scotia Power and their
12 customers -- all of you -- at the end of next year.

13 So, it's a project that for a major project
14 I think we've managed to keep on track pretty well, but
15 not without challenges as you would expect. And so, we
16 try to let you understand not just the good things that
17 we're doing, keeping the project on schedule and on
18 budget, but some of the more difficult challenges that we
19 have faced as we've tried to do that.

20 And so, I get to start off today by talking
21 about one of the biggest challenges, I think, that we've
22 had to face along the way which is what happened with our
23 transmission line construction contractor.

24 So, this first slide -- so if you're on the
25 phone -- we're not on WebEx, right? So, if you're on the

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

13

1 phone and you have their slide decks up I'm in the
2 transmission line construction contract. Just turn to the
3 first page with wording on it.

4 So, let's simply outline the scope of work
5 -- just to remind everyone -- in addition to the submarine
6 cable between Newfoundland and Cape Breton and in addition
7 to the converter stations and all the associated
8 facilities that have to be built on either side of that
9 cable, we have to connect each end of that cable to the
10 system in each province and that's our transmission line
11 construction. The overland or overhead construction
12 portion.

13 So, we have HV, High Voltage DC line in
14 Nova Scotia. We also have one in Newfoundland. We have a
15 grounding line in Nova Scotia. We also have one in
16 Newfoundland and we HV -- AC upgrades happening in
17 Newfoundland. So, those five components are what we think
18 of as the transmission line construction.

19 So, after a competitive solicitation in
20 accordance with our usual processes, we awarded a contract
21 in February 2015 to a Spanish Company by the name of
22 Abengoa S.A. The parent company is -- was the
23 counterparty. The parent company is out of Spain, out of
24 Madrid, Spain. And it did include a bid from our
25 affiliate Emera Utilities Services. So we both complied

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

14

1 with the affiliate code of conduct throughout that whole
2 process and awarded it to Abengoa S.A. And part of that
3 contract or what began -- what followed from that contract
4 was Abengoa entering into a sub-contract for three
5 portions of the transmission line; that being the two
6 grounding lines and the AC line. Those would be built by
7 PowerTel Utility Construction. So, a local -- a national
8 but local company.

9 So, that's the original way we thought that
10 this work would get done. So, Abengoa was going to hire
11 subcontractors and do work itself to get the DC lines
12 built and it was -- it had hired PowerTel to get the AC
13 and the grounding lines built.

14 So, just a little graphical representation.
15 I'll just whip through this in a way. So, on the phone
16 I'm on the first map which just basically shows all of
17 these lines. This is basically the whole project, so you
18 can see here in Newfoundland, these are the AC lines being
19 constructed. This is the grounding line. So, it's just
20 basically coming from a converter station to a grounding
21 area on the coast. It's basically a reliability, safety
22 component of the project design. It's used infrequently
23 but needs to be there to ensure the proper use of the
24 system.

25 And then this is the DC line in

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

17

1 PowerTel now working directly for us is doing the
2 grounding line and the grounding line is actually
3 finished. That's complete.

4 Then over to Nova Scotia we have the HVdc
5 lines, a little shorter than it is in Newfoundland.
6 Originally done by Abengoa, now being constructed by Emera
7 Utility Services and they're well underway as well. And
8 then we have the last piece the grounding line. Again,
9 PowerTel did finish that. It's done now and they did that
10 under their subcontract which we took assignment of, so
11 they finished directly for us.

12 So, that's essentially the work and who we
13 thought would do it but who is actually doing it now.

14 So, let's just take you back in time.
15 November 25th, 2015, Abengoa S.A., the parent company -- I
16 keep calling them the parent company. I'll give you a
17 little context for that. So, Abengoa S.A. is the
18 counterparty with us. They assigned the work to a
19 subsidiary of theirs called Abengoa Transmission and
20 Infrastructure. We call it Abengoa T&I which is a company
21 based out of Phoenix in the U.S. and their North American
22 CEO was the CEO of that company, that subsidiary, and he
23 and his team of people that we dealt with, they were the
24 ones actually doing the construction work. So, they were
25 our direct contacts on the file.

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

18

1 So, on November 25th in Spain, Abengoa, a
2 global energy company which had transmission assets,
3 bioethanol fuel, construction projects, all over the
4 world, both in transmission and in generation, solar and
5 otherwise, applied for court protection in the Spanish
6 courts. And it's not a typo on the screen. They actually
7 call it 5bis, b-i-s. And it's a Spanish term. Spanish
8 insolvency lawyers would recognize it. It basically means
9 pre-insolvency protection. Unlike in Canada or in the
10 United States, it's not quite insolvency. They have
11 something that's just before that. So, the stages in
12 Spain are pre-insolvency, if you can't survive that, you
13 go insolvent and then you go bankrupt. Here it would be
14 insolvency or bankruptcy as a first step.

15 And all it means is the level of protection
16 they get. So, they basically got protection from any
17 creditor taking action to enforce any of their credit or
18 their debt or their security against Abengoa S.A. And
19 interestingly, they really protected only their Spanish
20 subsidiaries. They didn't protect North American
21 subsidiaries. And it was quite a while before they took
22 action to protect U.S. subsidiaries and they had a couple
23 in the U.S. building certain specific projects.

24 They never did protect Abengoa T&I. They
25 let it alone. They let it continue to operate. So -- and

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

19

1 it's still not subject to any bankruptcy or insolvency
2 orders in any country, Abengoa T&I.

3 So, it gave them four months to establish a
4 recovery plan. And if they didn't get it done in four
5 months with the support of their creditors at 75 percent
6 then they would have to go into bankruptcy and basically
7 the company would be liquidated.

8 So, I think I've made all the points here
9 other than that. So, no actions in Canada were brought in
10 any insolvency or bankruptcy court.

11 So, November 25th, here we are. We get
12 word that this has happened to our counterparty and we
13 knew immediately that we had some obligations to our
14 customers to ensure that this did not cause a significant
15 disruption in the Maritime Link project and construction.

16 So, we took a number of other immediate
17 actions which we're going to talk about in a moment but we
18 knew immediately from what we had seen on the ground that
19 Abengoa and Abengoa T&I had been having cash flow
20 problems. And so, when you're having cash flow problems
21 as an operating company, it doesn't get better when your
22 parent declares for insolvency protection. It gets worse.
23 So, Abengoa S.A. had been providing some cash flow
24 financing to Abengoa T&I to ensure that the work was
25 getting done. We, subsequently, learned, you know, it was

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

20

1 not as much as we thought or not as good as we thought.
2 They were not advancing the construction as we had
3 expected. We had been tracking them and we had seen signs
4 of it but of course when you got into it you realized it
5 was even more so than we had thought that they were not
6 advancing things.

7 So, we knew immediately cash flow would be
8 the issue for Abengoa T&I. They wouldn't be able to get
9 any from their parent company and so their only source of
10 cash flow would be the contract with NSPML. So, I'll come
11 back to that point in a moment.

12 This slide is intended to tell you the --
13 this is the slide for those on the phone called "Strategic
14 Imperatives." These are the principles that we adopted
15 right away. I would say within a week of hearing the pre-
16 insolvency. We wrote -- sat down as a team and said,
17 "What are the most important things we have to do in this
18 situation?" And we documented them and we said, "This is
19 what we would honour all the way through until we're done
20 with this process."

21 And so, just to talk about some of them.
22 So, first of all, we knew we couldn't rely on Abengoa,
23 obviously, for information. We had to independently
24 monitor them. So that was done in a variety of ways
25 through our law firms, but primarily through Emera's

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

21

1 credit and risk group who independently evaluate credit-
2 worthiness of counterparties of all varieties and who have
3 access to information from independent, international
4 bodies that can give us this information.

5 So, we were regularly getting updates
6 whenever anything happened about Abengoa from that group.
7 And, of course, our legal counsel and other advisors would
8 provide us with information when it came to their
9 knowledge.

10 The next point is the "Protection of Our
11 Performance Security." That's the performance bond and
12 the letter of credit were key objectives to us. So, we
13 had signed a good contract with Abengoa. It provided real
14 value. It was the lowest cost contract in the original
15 solicitation and we're an open session, so I can't tell
16 you the numbers. You'll get access to them in the
17 confidential information in due course during the
18 regulatory process. But, I can tell you it was
19 significantly below the next bidder. Tens of millions of
20 dollars below.

21 We had stress-tested that contract and
22 their bid. We knew all the details of it and we were --
23 and we knew that it could get done for that amount and we
24 were wanting that contract to be available for the benefit
25 of our customers. And two important components of that

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

22

1 contract were performance security, a performance bond and
2 a letter of credit, which were there for exactly this
3 reason. If something went wrong and they were not able to
4 complete or they went into default, we'd have the
5 financial support to be able to get the work done and get
6 it done on time and to our quality and in a safe way. And
7 the performance security was -- the letter of credit was
8 valued at over \$38 million, the performance bond was
9 valued at over \$90 million.

10 So, we also said that we would try to keep
11 the original contract value for customers as a priority,
12 so you would naturally expect in this situation
13 contractors to come and say, you know, "We're going to
14 need more money. We can't do it for what we thought we
15 did." And we were determined to resist those advances and
16 ensure that we got value for customers. Especially
17 compared to what we knew the next option would be in terms
18 of cost.

19 We hired the best talent that we could on
20 external legal insolvency and sureties matters. We had
21 legal counsel, Osler's in Toronto, we have Skadden in
22 Washington. We had counsel in Madrid. We had counsel in
23 New York. Obviously, local counsel. And we made sure
24 that we understood what our rights are, what the processes
25 were and how we could protect our customers.

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

23

1 We established regular communications with
2 all stakeholders. So, right upfront we said, "If at the
3 end of the day something happens, we have to make a
4 decision or a change and we're going to need approval
5 whether it's from Nalcor or from Canada because of our
6 financing arrangements with credit agreement and the loan
7 guarantee or UARB, anybody who is going to have to approve
8 what we do, as we're making these decisions, they need to
9 know about what's happening long before we go and ask them
10 for their support and approval." So we set up a regular
11 communication with all of those entities.

12 Yes?

13 **MS. RUBIN:** How did that work?

14 **MR. GALLANT:** Depends on the decision. So,
15 we ended up replacing the contractor. In that case Nalcor
16 and Canada have approval rights to replace the contractor
17 under their contracts with us. Of course, our Board of
18 directors ultimately has the internal approval, but that
19 would be all we'd need as of significant approvals, but in
20 that scenario that's who we'd need.

21 And the UARB, of course, wouldn't have
22 approval in an "as you go" kind of sense. We wouldn't
23 expect we'd have to go to them to get an approval along
24 the way. That's not how the UARB oversees us. But we did
25 keep Mr. Outhouse regularly informed of what was

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

24

1 happening.

2 We also knew that we had to have regular
3 contact with the performance bond sureties because if this
4 went badly we'd have to call in the performance bond and
5 everyone told us, "If you have to call in a performance
6 bond, you are going to be in a fight." That performance
7 bond sureties are in the business of setting premiums and
8 recovering those premiums for the insurance and then not
9 paying it out. Similar to regular insurance companies but
10 sort of at another whole other level of that kind of
11 approach. And so, right from the beginning we said to the
12 performance sureties, "You better be ready because you're
13 going to have to step in if this goes badly." And on a
14 weekly basis, sometimes more often, we were on the phone
15 with them to tell them what we were seeing and make sure
16 they understood that they were in jeopardy here.

17 You don't have to do that with a letter of
18 credit because a letter of credit, it's issued by a bank,
19 it's available on demand. If there's a default and if
20 you're certain there's a default you can swear, basically,
21 an affidavit that there's a default. You're claiming your
22 money. It comes to you a few days later and then there
23 could be a fight over that later, but at the time they
24 can't resist that call on the letter of credit, and the
25 performance sureties absolutely can and do resist calls on

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

25

1 their security.

2 **MS. RUBIN:** Who is the -- who issued the
3 performance bond?

4 **MR. GALLANT:** The performance bond was
5 Liberty Mutual Insurance Company and was -- two companies
6 had the coverage and Zurich Insurance. Zurich Insurance.
7 The letter of credit was held by HSBC.

8 So, we -- so, at this point, actually, we
9 presented to the sureties and others with approval
10 authority to promote and protect the interest of our
11 customers. So, this is simply a way of saying we will not
12 take any steps to jeopardize the project or our customers
13 on our own. That we will require support of those who
14 could be affected by it.

15 So, if we were going to do something to
16 manage the contract in a different way, we wanted the
17 sureties to sign off, so that later on if it went bad and
18 we had to make a call on the performance bond they
19 wouldn't be able to say, "Oh, you did something that we
20 didn't agree with so, you're on your own." We wanted to
21 make sure that didn't happen. So we were very conscious
22 right from the beginning of that.

23 The strategic plan is established for the
24 NL team to manage the work in the event of a complete
25 insolvency or similar action. So, this is basically

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

26

1 contingency planning. We knew right away we had to
2 independently have a plan because at any moment the whole
3 house of cards could have come down and we had to be ready
4 to step in and hire new contractors and deal with the mess
5 and get the construction back going up.

6 There'd be no interference with Abengoa.
7 So, the other thing is, in all of this, the contract is
8 still in place. They have a right to perform their scope
9 of work and if they're performing, we can't just interfere
10 and say, "We don't like the fact that you're insolvent."
11 So, we had to make sure that they were performing to the
12 extent that they could and we had to watch carefully so
13 that when they weren't performing we were able to call the
14 default.

15 But in between we couldn't intervene and
16 start directing their work, otherwise we would become,
17 basically, in their shoes and that would also give
18 defences to the sureties if we have to call on the
19 performance bond later, so that was important to the
20 business.

21 And then finally, it's -- this is a big
22 problem. The project progression has to continue. We may
23 have to have additional focus on this and some other
24 issues that would happen as it came along, but we reminded
25 ourselves the project's going to get done. There's a lot

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

27

1 of other things that have to keep going. We can't
2 distract ourselves completely with this. So, we had to
3 build a focused team and make sure everybody else
4 understood they might have to continue to pick up a little
5 bit extra but they had to keep the rest of the work going.

6 So, those are our strategic principles. I
7 spent some time on them because I just wanted you to
8 understand as you hear the rest of what happened that we
9 checked in on these every time we took a step to make sure
10 we were aligned.

11 I'll try to sort of get through the rest of
12 the deck. I know I'm sort of eating up time here.

13 I lived and breathed this basically since
14 November 25th so I kind of get caught up sometimes in
15 telling the story, so you'll forgive me if I go on at
16 length.

17 So, what happened? Well, between November
18 25th and February we kept meeting with Abengoa. We
19 definitely were pushing them to get their work done. They
20 were resisting getting work moving on the construction
21 site because they didn't want to build up any more
22 accounts payable obligations. So, it was this constant
23 back and forth with them to keep the project going. And
24 we were saying to them, "If -- there needs to be a
25 solution for your cash flow that can be within the current

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

28

1 terms of the contract or some amendment that doesn't cost
2 customers but perhaps changes the way the payments flow.
3 Maybe there's a solution we could help you with and keep
4 this project on track."

5 And so we were in constant contact with
6 them. Meetings in Halifax and New York and all over the
7 place trying to get a solution and eventually we got one -
8 we thought. On February 12th we signed a term sheet
9 between Abengoa, NSPML and PowerTel and it imposed a
10 recovery plan. To get them back on a schedule that would
11 have them meet the key substantial completion dates. And
12 it had enforceable productivity targets. A schedule that
13 said, "This week you're going to get this much work done
14 and this month you're going to get this much work done,"
15 and all the way through to the end all of the work that
16 they had to get done with triggers that if they didn't
17 meet that work they would be in default.

18 It required a contract cost adjustment.
19 They had fallen behind to the extent that between PowerTel
20 and Abengoa, they made a case that it would cost more
21 money to recover under this plan. Our position was -- so
22 our position was it might be valid to cost a little bit
23 more money but it's really Abengoa's fault. They should
24 be paying. If they had the financial capacity, they would
25 be paying. And so what the contract said was that:

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

29

1 you can change the price but it has to be clear that it's
2 because of your activities that the price has been
3 changed.

4 And at the new price it was still a very
5 beneficial contract for customers compared to our next
6 best alternative. And so we entered into the term sheet
7 and the default provisions of that term sheet reinforced
8 that Abengoa was responsible for these defaults to date
9 and would continue to be responsible for them if there was
10 a default in future.

11 So, what happened? Very first month,
12 March. March came and went, Abengoa continued to fail to
13 perform despite the changes to how we would deal with
14 them. One of the things that we set up in this term sheet
15 is we set up a -- this was to help with their cash flow --
16 a project account agreement and we set up an independent
17 account run by a trustee. When we owed Abengoa money, we
18 put money into that account and the trustee would pay
19 directly its suppliers. So, what that meant is that the
20 suppliers would be assured that they would get paid. The
21 money wouldn't go into Abengoa and then have some
22 insolvency event happen and then end up going to Spain or
23 the creditors of Abengoa. And it also relieved the
24 pressure on them to come up with cash to pay their
25 suppliers if they didn't have it yet because it would be

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

30

1 in the project account.

2 So, first month they missed their targets.

3 And so we enforced our contract and we sent them a letter

4 saying:

5 "You've missed your targets so we're compelling you to

6 provide a recovery plan."

7 The term sheet provided a certain number of

8 days to do that and they provided it in a timely way and

9 we saw it and, you know, our initial reaction was, "This

10 is completely inadequate. They're not going to recover if

11 this is their plan." But we didn't act on our first

12 instinct. We spent a couple of days at the table with

13 them working through all of it. Trying to help. Trying

14 to understand, trying to help them with ideas. Asking

15 them for more information. Doing our own internal

16 analysis. And at three weeks later, or so, two weeks

17 later, we concluded there's no way that they can get this

18 done and they were in default in the first month.

19 And so we called them on the defaults. We

20 called on the performance bond. And we said, "We are

21 running out of time to get this done on time and so this

22 needs to be fixed and it's not going to be fixed by

23 Abengoa. At least not alone."

24 So, we called on the performance bond --

25 sureties. Remember, we had been keeping them in touch.

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

31

1 Every week we were having meetings with them. They knew
2 what it looked like. They knew what was coming. And so
3 when we made our claim their initial reaction was what we
4 expected, reluctant and resistant. But they did agree to
5 meet with us in the middle of May. So, a couple of weeks
6 later.

7 As soon as we could convince them to meet,
8 frankly -- remember, these sureties, these insurance
9 companies, they had claims that they had underwritten to
10 Abengoa for other projects all over the world. Abengoa --
11 I should have said this at the beginning -- the Abengoa
12 insolvency was an almost nine billion euro of debt. They
13 owed nine billion euros when they went insolvent.

14 So, these insurance companies, our little
15 claim was almost -- well, I shouldn't probably be
16 subjective about it. I don't what they really thought, I
17 suppose, but we knew the other claims they were dealing
18 with were in hundreds of millions of dollars in North
19 America alone, let alone the other ones outside of North
20 America.

21 So, our little claim, we expected them to
22 deal with efficiently and promptly. And they agreed that
23 they needed to. They agreed although it was, I think, not
24 ever really supported by Abengoa, the sureties said to us,
25 you know, "We need to take steps to replace Abengoa." So

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

32

1 they were prepared to do that.

2 Abengoa said that they were prepared to
3 support that in this meeting and so the sureties had a
4 consultant called Vertex Engineering and everyone agreed
5 that Vertex would issue a competitive solicitation to find
6 a replacement contractor. We had an obligation to, and we
7 did share with them, information from the first bidding so
8 they naturally went to the bidders in the first round of
9 bids and they started the process.

10 We stayed very close to that. They needed
11 us, first of all, to understand what scope of work to put
12 in the bid, but we also knew that Vertex wasn't working
13 for us. They were working for a company that wanted to
14 pay us as little as possible. They wanted to get the cost
15 down, so they might be not be as concerned as we were with
16 quality, timeliness of completion, all of that.

17 So, we stayed very close to Vertex and we
18 were right to do so because Vertex did a lot of things in
19 that competitive solicitation that were designed to get
20 the price down without regard to whether we got the actual
21 product that we contracted for from Abengoa and so we had
22 to hold them accountable many times and get them back on
23 track.

24 At the end of the day, we went through that
25 process and only one bid out of three was able to meet our

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

33

1 requirements. The requirements being quality and safety,
2 of course, but schedule being the primary piece. So, only
3 one bid actually bid for the scheduled completion date
4 that we required under our overall project schedule that
5 was approved by the Board. The other contractors' bids
6 were for a later date which would have been so late that
7 we would not have been able to complete the project in
8 2017.

9 And so, after a lot of to and froing with
10 all of the parties, on June 30th we finally decided we'd
11 had enough, that we were running out of time to meet that
12 date and we called on the letter of credit. We ordered
13 Abengoa to stop all work. They had already voluntarily
14 stopped in Newfoundland. They were still doing a little
15 bit of work here and there in Nova Scotia. We called on
16 the letter of credit and we said we're going to move and
17 we're going to -- we want to have a payment out of the
18 performance bond. We're going to appoint a replacement
19 contractor and we're going to move on without you.

20 And so we did that and early in July we
21 received \$38.5 million from the letter of credit and then
22 shortly after that we finalized a settlement with the [--]
23 bond sureties of \$5.5 million, so we had \$44 million to
24 contribute to the difference in cost between the old
25 contract and the new contract, reflecting of course that

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

34

1 some work had been done and some bills had been incurred
2 and some payments had already been made.

3 And our assessment is -- remains that -- I
4 should probably just move on for a second before I come
5 back to that point.

6 So, we appointed EUS/Rokstad as the
7 replacement contractor for this work. We followed the
8 code of conduct in addition to the solicitation being done
9 independently -- that didn't prevent us from understanding
10 that we had to keep completely arm's length and document
11 everything dealing with the fact that there was an
12 affiliate involved in the bid.

13 The EUS bid is unlike the first one which
14 was just EUS. In the meantime they had gone out just as a
15 regular part of their business and made this agreement
16 with Rokstad power to try to do work together. And so
17 that's how they bid. They bid as a joint venture and the
18 way it actually worked practically is EUS is doing the
19 Nova Scotia work which is about 25 percent of the project
20 work and Rokstad is doing the Newfoundland work.

21 So, they got started under a limited notice
22 to proceed. So we made the decision in July. They got
23 started immediately and then we formalized -- we finalized
24 the agreement. We went through the government's
25 approvals. It was approved by Nalcor, approved by Canada,

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

35

1 approved by our Board of Directors and officially the
2 contract was in place in September.

3 **MS. RUBIN:** Rene?

4 **MR. GALLANT:** Yeah.

5 **MS. RUBIN:** You said you called on the
6 letter of credit and then you settle the bond for
7 contribution of \$5.5, applied that towards the
8 differential. Was there still a net difference?

9 **MR. GALLANT:** So, I should tell you before
10 I answer that question, Nancy, that since we're in public
11 session, I'll go to the next slide. I will answer your
12 question. I'll go to the next slide to explain because
13 it's not done yet.

14 The story's not over. At the end of
15 August, Abengoa finally issued a formal notice of dispute
16 objecting to everything we had done. Objecting that they
17 were in default. Objecting that they had done anything
18 wrong. Objecting to the amount that we say was in issue.
19 Objecting to our call on their security. And took the
20 position that we should repay them all of this money.

21 See, the letter of credit is secured by
22 some kind of security that they gave in favour of the
23 bank. So we call on the letter of credit. The bank calls
24 on their security and so the \$38.5 million actually comes
25 from Abengoa. So, now they want us to pay it back.

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

36

1 **MS. RUBIN:** Is that ongoing?

2 **MR. GALLANT:** Yes, there's no time bar to
3 that particular claim so it's under their contract. We
4 have a dispute resolution process. And so we're in it.
5 We had a meeting. Rick and I and our legal counsel met
6 with the CEO of Abengoa T&I who was the designate of the
7 Abengoa S.A. CEO and his counsel and we went back and
8 forth on the positions and claims. Of course it was
9 without prejudice and of course it was confidential.

10 I can tell you we were talking about
11 numbers not about whether there was a default or not. I
12 think anyone that would have gone through this, anyone
13 that looks at this will realize there's a default and the
14 discussion is really about what's the cost of the default.

15 But officially they have not said that
16 formally. Formally they're saying it wasn't a valid call
17 of default.

18 So, to answer your question, have we
19 covered everything? Our position with Abengoa today is
20 they still owe us money. Their position is we owe them
21 money. And so we'll go through the arbitration process,
22 perhaps. We're still leaving out hope that there could be
23 continued discussions and a resolution on agreeable terms.
24 I think there should be. I believe that the Abengoa S.A.
25 -- the Abengoa T&I CEO would prefer that, but I also

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

37

1 believe that someone in Spain is going to call the shots
2 for his position that he's taking, so we'll see how that
3 plays out. So that the resolution is uncertain.

4 So, that would be the end of my
5 presentation. I guess, you know, just to summarize, I
6 didn't tell you all of this to tell you, "Look we've done
7 a great job protecting our customers." But I did --
8 eventually you're going to get to a process, we're going
9 to file our final costs and you're going to see all this
10 and I do want you to understand the rigor that we applied
11 to this. And we think we made good decisions along the
12 way. We hope you'll agree eventually when you get to dig
13 into the details, but we thought better for you to hear
14 about this while it's still pretty fresh than, you know,
15 whenever it's going to be at some point in the future and
16 start to dig through it and not, you know, have any of it
17 be familiar to you.

18 This project is a very difficult project to
19 complete on time and on budget and we have challenges
20 every day. Rick probably hasn't had a good night's sleep
21 in a number of years and won't for another 18 months or
22 two years. But this is the way we approach these
23 challenges. We try to set our strategic principles and we
24 face issues. We try to stay true to those principles with
25 the customer always firmly in mind and we never stop

MR. RENE GALLANT - TRANSMISSION LINE UPDATE

38

1 looking for solutions that will keep the project on track
2 both schedule- and budget-wise.

3 **MS. RUBIN:** Is the arbitration process
4 governed by Canadian laws or Spanish?

5 **MR. GALLANT:** It's -- so the arbitration
6 has to take place in Halifax and it's under the
7 international -- what's the -- ICC rules. So, it's under
8 ICC rules. So international -- what does it stand for? --
9 International Chamber of Commerce Rules.

10 So, we'll be represented by Osler's in that
11 process and Ezra is going to become intimately familiar
12 with Abengoa. So, there'll be no Spanish legal system
13 role in that process. And that would be the same with all
14 of our contracts, Nancy. They all have local governing
15 law obligations and forum obligations.

16 **MR. MAHODY:** Rene, in the event that your
17 position, that arbitration is successful, is there some
18 additional security that you can realize against to get
19 recovery?

20 **MR. GALLANT:** No. But Abengoa S.A.
21 currently has, today, before the Spanish courts approval
22 of their restructuring plan which has 86 per cent support
23 of their creditors, so they would be an operating, fully
24 financially functioning entity with global assets. Not
25 other assets in Canada.

1 **MS. RUBIN:** Is the project subject to any
2 liens or anything as the result of Abengoa's defaults?

3 **MR. GALLANT:** No, there are no liens on the
4 project at all. There was one lien placed during the
5 course of this which was a matter of default. We issued a
6 notice to Abengoa that they were in default by allowing a
7 lien to be placed. We ended up dealing with that directly
8 ourselves and setting off that cost against an invoice
9 that was outstanding to them.

10 And, you know, when a lien is placed in
11 Nova Scotia it's placed on easement lands and lands --
12 which means lands of landowners, like our Cape Bretoners
13 -- and so we were not prepared to let that stand so we
14 dealt with it immediately with the help of one of our
15 counsel at Cox & Palmer.

16 So, we're in public session. I've shared
17 with you as much detail as I can today. Obviously, you'll
18 get a chance in confidential session, at some point,
19 before this over, to get more details and if you have any
20 questions, you know, one-on-one later on, I'm happy to
21 take them. But that's the story of how we replaced
22 Abengoa with EUS and Rokstad. That probably took too
23 long. Okay.

24 **MS. GREENOUGH:** Yes, thanks very much.
25 Rick, you're next.

MR. RICK JANEGA - CONSTRUCTION UPDATE

40

1 **MR. RICK JANEGA - CONSTRUCTION UPDATE:**

2 **MR. JANEGA:** All right. Well, good
3 afternoon everyone. We'll take you through an update
4 that'll hopefully give you some confidence and some
5 insight into the progress that we've made since February
6 when we provided the last overview of the advancements on
7 construction.

8 At the time we presented -- back in
9 February we had still been active on the engineering
10 design for both the AC and DC substations, converter
11 stations. We had just completed a testing of our first
12 set of transmission towers and the prototype activities
13 were just underway and we had a fair amount of progress on
14 the activities that the NSPML team were managing for
15 construction but for the most part the project was really
16 just getting started on some of the major construction
17 activities and, as Rene gave as an overview of Abengoa,
18 the transmission really, we, you know, by that time, we
19 had a couple of foundations in the ground on the DC and
20 had really just started on the AC transmission line.

21 So, as of today, a significant difference
22 in what's been accomplished with major contactors being
23 ABB who are responsible for the converter stations and
24 substation design, manufacturing development for Nexans on
25 the cable supply and the installation and burial

MR. RICK JANEGA - CONSTRUCTION UPDATE

41

1 protection and then on the transmission activities which
2 are now under PowerTel for the original scope they had of
3 the three lines and with ERJV, the Emera U.S. utility
4 services and Rokstad joint venture. I'll just use ERJV as
5 we go through it.

6 But now we have significant progress with
7 the project. We're over the halfway mark. We have less
8 than a year to go before we'll be in service and October
9 1st next year, we will be doing the energization, getting
10 the utilities comfortable with the operation of the
11 Maritime Link and planning to be fully in service and
12 commissioning completed by December 31st for turnover to
13 operation on January 1st, 2018.

14 We have 1.9 million hours worked on the
15 project -- person hours worked. And we're very pleased
16 with our safety to date. As everyone in this room would
17 know and all of our employees and contractors, employees
18 on the project, having any injuries are unacceptable to us
19 and the team has undertaken -- you recall back in
20 February, we talked about significant steps we've taken to
21 stand down the project. We stopped all work. That has
22 had a significant impact and reset the bar and
23 expectations on safety and now we're operating at a level
24 in the construction industry that is very commendable for
25 the project team that's trying to get the work done and

MR. RICK JANEGA - CONSTRUCTION UPDATE

42

1 the contractors that are delivering it with an all injury
2 frequency rate of less than one point zero.

3 On the environmental side the team has
4 worked very effectively with the contractors building the
5 programs, the EA commitments, the environmental protection
6 plans that allow the execution of work to proceed now to
7 the point where we, since the November incident at
8 Woodbine in 2014, we've not had another major event on any
9 of the sites and today we're probably sitting with about
10 600 people working out on the project.

11 So, very effective environmental commitment
12 from all of the contractors and the project team in making
13 sure that we protect it including that first part which
14 Rene described on the map where a big part of our plan was
15 to reduce the size of the footprint, or the new footprint
16 that we developed on the transmission line that you had
17 asked about, Nancy.

18 So, we're -- Brian will speak to the
19 financials. About 924 million committed on the project to
20 date. All of the contracts have been awarded. The last
21 of the contracts that we were dealing with was with
22 regards to the grounding site and the installation of the
23 electrical components. That has been awarded and the work
24 will be starting before the end of year.

25 For those on the phone, I'm on slide three

MR. RICK JANEGA - CONSTRUCTION UPDATE

43

1 of the "Construction Update." Just touch on the converter
2 and substations and we'll see some of the photos and we
3 have a video to show. Unfortunately for folks on the
4 phone I think it's available on the FTP site but we'll go
5 through it. We don't have any music with it but I'm sure
6 somebody will sing along.

7 Bottom Brook site, which is on the west
8 coast of Newfoundland on the map that you have in front of
9 you if you want to just follow along with each of the
10 sites.

11 It's a substation on the west coast near
12 Stephenville that we're expanding. The yard development
13 is over 70 percent complete and the converter building is
14 the same state. All of the structural steel is erected,
15 the siding is started to be applied to the building, the
16 roofing system is about halfway through, concrete and
17 grounding systems within the building which form the,
18 really, the base of the whole HVDC structure in that
19 building, they are now about halfway through pouring the
20 slab floors and the grid systems. And all of the major
21 components are either delivered or in transit. In fact,
22 the last three high voltage transformers have been
23 delivered to Corner Brook and they're awaiting transport
24 to the Bottom Brook site.

25 You'll see in the photo where we have steel

MR. RICK JANEGA - CONSTRUCTION UPDATE

44

1 in the air and the AC yard with all of that now complete.

2 On the engineering front everything is
3 behind us. That has been completed and the control system
4 has actually been finalized and tested in Sweden.
5 Completely passed all of the system interface tests that
6 we put it through.

7 So, this is a shot of the Woodbine site.
8 You can see the building partially roofed and partially
9 sided in, but all of the structural steel erected. All of
10 the foundations that you see -- the little spots you see
11 sticking out of the ground -- they're to hold pedestals to
12 mount all of the equipment. We're just about complete
13 with those, but the area closest to the building is the
14 final area that we need to install foundations and two
15 large ones in the outer area or outer perimeter of the
16 site that are going to hold lightning protection
17 facilities. They're essentially towers that will be
18 erected.

19 The next photo on slide five of the Bottom
20 Brook Converter Site. This is the AC substation so, all
21 of the civil work where the foundation bases were
22 installed. Last time we had presented to you we were just
23 starting on the excavation at the site so the foundations
24 were completed, all of the steel has been erected, as you
25 can see in the photo, there's equipment being installed.

MR. RICK JANEGA - CONSTRUCTION UPDATE

45

1 They've started pulling all of the cables. The majority
2 of it is now in place and in the background in the photo,
3 you'll see a concrete slab. That's where the control
4 building will be mounted. It is just getting ready for
5 shipping from the facility in the Quebec. It's going
6 through its final testing and once that's installed, all
7 of the cables will be pulled into the building and then
8 the telecommunications and control systems for each of the
9 breakers and switches that are in the yard will then be
10 connected in preparation for testing about spring of next
11 year.

12 So, very significant progress at that site
13 compared to where we were in February. It is nearing
14 completion once the control building goes in place and all
15 the wiring starts to be in, you're kind of in the home
16 stretch.

17 On the transmission lines and for the
18 Bottom Brook site and the Woodbine site, the main
19 difference that you'll see in the video is the AC
20 substation development at Woodbine is the lagging behind
21 the Bottom Brook development by about four weeks. So, the
22 steel work has just started to go in the air last week.
23 The video, you'll see, is about a week and a half ago, but
24 it takes about three weeks to get the steel in the air and
25 then three weeks after that to have all the equipment

MR. RICK JANEGA - CONSTRUCTION UPDATE

46

1 mounted and by the end of the year both sites will be in
2 the same state.

3 On the transmission lines Rene talked a bit
4 about that. A passionate subject, but one that's been
5 very important for us because, not only ensuring that we
6 deal with replacement contractors, but that we don't lose
7 any of the quality attributes of what we designed into the
8 project. And there have been a lot of small items being
9 dealt with on the turnover from Abengoa to the new
10 contractors, but we're making sure we know the work that
11 was left behind with Abengoa is remediated, repaired or
12 approved before ERJV build on those sites.

13 Today, we have over 500 of the foundations
14 that are completed. Back in February after several months
15 with Abengoa at it, they had a couple of dozen in the
16 ground. So, in about two months the joint venture project
17 team has advanced to get about 500 of the 3000 foundations
18 that are needed to build the DC lines.

19 The grounding lines are 100 percent
20 complete other than tying them in at both Bottom Brook,
21 Woodbine and Cape Ray, or sorry, Indian Head and Big
22 Lorraine sites. So, that's a significant accomplishment
23 for PowerTel and the first segments of the work by other
24 contractors that's been completed.

25 The AC transmission, they're about halfway

MR. RICK JANEGA - CONSTRUCTION UPDATE

47

1 complete the construction of it. So right now they're in
2 the interior section or heading to the interior section of
3 Granite Canal Route and have tackled some pretty
4 aggressive terrain as you'll see in some of the photos and
5 video.

6 This is just a photo on Slide 7 showing the
7 topping of one of the structures in Cape Breton as the
8 crews start to erect steel and put towers in the air.
9 They have a couple hundred -- or a hundred or so towers
10 assembled on the ground ready to be stood up and placed on
11 the foundations and we have about a dozen and a half
12 towers that are actually in the air now.

13 We mount the self-supporting structures
14 which are these towers which stand on their own on
15 foundations. Then in between each of those there are
16 about 20 guy structures or guy-supported towers. They're
17 assembled on the ground. They stand up about one a day of
18 those so we'll start to see stringing activities begin
19 very shortly on the DC line, and the AC line has been
20 underway stringing conductor for a couple months now.

21 This is one of the guy structures. You'd
22 be familiar if you think of self-supporting towers as the
23 pylons that you see along the side of the highway when
24 you're getting on the 102 leaving Halifax. Those towers
25 are pylon towers. These have guywires that hold them up.

MR. RICK JANEGA - CONSTRUCTION UPDATE

48

1 They sit on a centre post and the drilling and placing of
2 anchors has been progressing well.

3 On the submarine cable side, manufacturing
4 had just begun in Japan, I think in February. We're now
5 well underway of completing the land cable manufacturing.
6 That's being shipped here later this month from Halden,
7 Norway. The manufacturing of all batches are underway
8 with about halfway complete in Norway and in Japan we are
9 finishing the last of the batches will be doing the
10 joining on that cable and then finishing out the armoury.

11 The cable from Japan and Norway will be
12 loaded on two separate vessels and both of them will be
13 shipped to Nova Scotia early next year and arrival for the
14 first cable from Norway to be laid in subsea and Rene will
15 give you an overview of the marine installation next year
16 -- today for next year's activities. Not going to hold
17 out that long, are you, Rene?

18 One of the things that we have had as Rene
19 said is lots of challenges on the project. One of the
20 things that we have encountered has been a requirement for
21 us to put round-the-clock oversight in all the
22 manufacturing facilities for the cable manufacturing and
23 inspection. We've been there for the testing. We've been
24 there for each of the repairs that have been done on the
25 cable. Some areas where we had damage to paper or to lead

MR. RICK JANEGA - CONSTRUCTION UPDATE

49

1 sheets. Some of the cable we've actually scrapped and has
2 been replaced, with our expectation this is going in the
3 water for 50 years and we don't want to see it again. So,
4 we'll get it installed, buried and put in service and have
5 a high-quality product.

6 **MS. RUBIN:** Rick, what's the reference
7 there to bad batches?

8 **MR. GALLANT:** The cable -- when we selected
9 Nexans to supply the cable, one of the main reasons we
10 picked them was that you can put one of the two cables on
11 the vessel so it can lay end-to-end from Point Aconi to
12 Cape Ray without having to do a splice at sea. But we
13 still manufacture the cable in segments. So, the longest
14 segment of cable is about 86 kilometres that they could
15 manufacture. That was in Japan. The batches that they're
16 doing in Norway are different lengths but it will get us,
17 when it leaves the factory, it'll be one continuous length
18 from Cape Ray to Point Aconi. So it's just that they have
19 other orders.

20 So they manufacture parts of ours in
21 amongst parts of other cable projects they have and then
22 they splice it in the factory.

23 The factory splices are much different than
24 an MC joint. It's the reliability. There's never been a
25 failure of a factory splice for Nexans.

MR. RICK JANEGA - CONSTRUCTION UPDATE

50

1 This is just a picture in Slide 10 just
2 showing you the cable as it's being placed on the storage
3 reels at the factory and when you see the video of the
4 load-out you'll understand a bit more in detail of what's
5 done.

6 So, as the cable is manufactured, you're
7 looking on Slide 11 at a picture of the Halden facility in
8 the left-hand -- on the left-hand side you'll see a green
9 caged area. That's where the cable will be stored. When
10 they spool the cable out in Norway, they'll back the
11 vessel up to the loading facility and then unspool the
12 cable from storage onto the vessel. In the green area
13 that you see in the centre of it is where 7,000 tonnes of
14 cable will be placed and that will allow us to install the
15 cable in one run. It takes just over two weeks for them
16 to get from side to side but an important part of it for
17 our selection of Nexans was their ability to do this with
18 no subsea splice.

19 **MS. RUBIN:** Rick, what's the distance of
20 the cable again?

21 **MR. JANEGA:** Just about 170 kilometres from
22 shore to shore.

23 Slide 12 is just a picture of the completed
24 land cables that will be being shipped to province in the
25 next couple of weeks.

MR. RICK JANEGA - CONSTRUCTION UPDATE

51

1 Overview of the grounding sites. You
2 recall at this time in -- or in February we were talking
3 about just finishing, design, getting ready, mobilized,
4 awarded a contract. Yellow components are just
5 immobilized kits. They're essentially containers that the
6 HDD company brings with them.

7 This work for both Point Aconi and Cape Ray
8 is 100 percent complete. It went very well. The project
9 team and the contractor teams executed this with great
10 precision. Got us the casings installed and all of that
11 work was completed. We have, you know, personally, one
12 area of the project that I was very concerned about us
13 requiring significant contingency and the work was
14 completed without -- so, it was done within budget and
15 within schedule and working with Fisheries.

16 **MR. GALLANT:** So, Rick, maybe it would help
17 if you just describe what the horizontal directional
18 drilling really was.

19 **MR. JANEGA:** Yeah. So, in the Cape Ray and
20 Point Aconi, we've drilled two different lengths, but the
21 setup was to install two, approximately a foot in
22 diameter, casings, steel casings, out in -- from on land
23 where the equipment is set up there. In Point Aconi it
24 goes out a kilometre. In Cape Ray it goes out just about
25 a half a kilometre. There are two holes that are drilled

MR. RICK JANEGA - CONSTRUCTION UPDATE

52

1 that when we back the vessel in for the installation,
2 it'll come in. They'll spool cable out into the water and
3 drop it down into the HDD entrances. Will attach it to a
4 pulling cable, and the subsea cable will come ashore
5 without having to tear up the coastline.

6 So, the intent and the purpose of it is to
7 reduce the environmental impact in the lobster fisheries
8 zone off Nova Scotia which was a key element. And,
9 really, all of the equipment is just a large drill set --
10 Meccano set that comes together, use hydraulic pressure to
11 bore out at a very specific projectile so that the casings
12 can be pushed into the hole and the cables can then be
13 pulled in it so that they're protected from any coastal
14 damage.

15 A big part of what we're worried about on
16 both sides is ice -- packed ice and the fishery activity.

17 So, it's all completed. The holes are
18 finished, cased and sealed and ready for the cable to be
19 dragged in, in 2017.

20 The grounding sites that we developed, both
21 Indian Head and Big Lorraine, where the grounding lines
22 will terminate, this is the Indian Head site. A lot of
23 rock excavation, blasting activity and work at sea
24 including blasting at sea and Big Lorraine. All of the
25 work progressed according to schedule.

MR. RICK JANEGA - CONSTRUCTION UPDATE

1 You may recall this was one of the areas
2 that we actually decided to defer the work for a year and
3 what we had undertaken was a redesign of the grounding
4 site. Originally if you look at the photo on Slide 14,
5 just in front of one of the excavators, this area was
6 going to be a bay area. So, we were going to build a rock
7 berm, essentially, like a breakwater and have it just a
8 wet interior but we followed a design that now Nalcor had
9 implemented and we shrunk the footprint of the grounding
10 site to be able to reduce the amount of work we had to do
11 in the water and backfilled the whole area so it's safer
12 and easier to access. We were able to do that reducing
13 the cost and the execution risk of the work and both of
14 those sites are now complete other than the installation
15 of the electrical components.

16 In the photo you'll see what looks like --
17 in the photo, for those on the phone, there's a line near
18 the toe of the breakwater that just shows up as a gray
19 line. That's where the 40 wells are inserted into the
20 breakwater system and the electrodes will fit down in
21 those and that's for the purpose of balancing out the DC
22 lines when it's in normal operation and then if we have
23 one cable out of service we can operate on the grounding
24 system and not affect any of the marine habitat around it.

25 So, we have studies that we'll do once

MR. RICK JANECA - CONSTRUCTION UPDATE

54

1 we're in operation but all of the design was able to be
2 accomplished and reduced the cost and risk on that block
3 of work.

4 And the next slide, 15, is just a
5 representation of what we've been undertaking each of the
6 years. So, we're now wrapping up 2016 and we'll be able
7 to have checkmarks beside the bulk of the items that are
8 there. The commissioning, planning and the operational
9 readiness are probably the two biggest areas of work
10 activity that we have coming at us next. And then 2017,
11 obviously, will be the completion of all the construction
12 activities with our major contracts, wrap up all of the
13 other contracts to get those closed out and finalized, all
14 of the work and documentation associated with them, and
15 come to an agreement with our partners Nalcor on the
16 operating plans for the Maritime Link and Labrador Island
17 Link transmission assets.

18 Lower Churchill project update. Just to
19 give you a sense of some of what we've been keeping an eye
20 on and what Nalcor's been reporting. I know there's a lot
21 of information been in the public in the last couple of
22 months. Namely, around items that we've talked about
23 previously of the schedule implications. We now know that
24 the Labrador Island Link, they're still planning with a
25 potential to be able to get that in service in 2017, but

MR. RICK JANEGA - CONSTRUCTION UPDATE

55

1 in all likelihood the LIL will be early 2018. We know
2 they've started to raise water levels after the premier
3 reached an agreement with the aboriginals in Labrador to
4 continue to monitor and to come up with a plan that's
5 acceptable for all parties on the methylmercury. And
6 they've completed the installation of the cables but have
7 also completed the first joint and continue to work on
8 them. I believe their next update they will have the
9 cables joined and all the rock protection complete.

10 Transmission work continues with their
11 subcontractors focused on development of access on the
12 island of Newfoundland. Work had progressed very well on
13 Labrador but the bulk remained for the LIL on island. The
14 Labrador transmission assets were completed. They're
15 working on the final substation activities now in
16 Churchill and we've had a recent visit to the Soldier's
17 Pond converter site and where they have synchronous
18 condensers that will the replace the Holyrood oil-fired
19 plant and it's at a very similar state of progress to our
20 Woodbine and Bottom Brook substation and converter sites.
21 Buildings are erected, steel in the air, pulling cables
22 and preparing for work next year.

23 Our big activities, you know, knowing that
24 Nalcor have focus on trying to get the hydro site back on
25 track from the protests that that had happened over the

MR. RICK JANEGA - CONSTRUCTION UPDATE

56

1 last month. Contractors are ramping back up. Employees
2 are being brought back to work and we know they have a
3 winter plan this year that will see them either continue
4 to progress concrete or to defer that work into 2017 and
5 '18 to complete it and we're quite sure they have enough
6 headroom in their plans to be able to accommodate that.

7 So ---

8 **MR. MAHODY:** It's Bill Mahody. Just one
9 question for you in relation to that first bullet point.
10 Was consideration given from Emera Newfoundland's
11 perspective about whether the delay of the full power to
12 2020, the update that was received in June of 2016, did
13 that provide any opportunity for consideration of cost
14 savings that could have occurred on your portion of the
15 project?

16 **MR. JANEGA:** It did. Yeah, we looked at
17 the potential to actually either slow down or defer works
18 and each of the contracts that we had established, the
19 penalties or the costs and the risks associated with it,
20 as an example, on the converter sites where the
21 contractors were mobilized and where the work had
22 progressed, engineering and manufacturing had already
23 begun, actually, some components had been in the prep for
24 testing phases, we would have had significant carryover of
25 costs.

MR. RICK JANEGA - CONSTRUCTION UPDATE

57

1 So, we would have been sitting with an incurred
2 cost, you know, mid-year, that would've been in excess of,
3 probably seven -- 600 million and we would've been sitting
4 on that to stretch it out with increased costs of
5 mobilization. So we actually looked at whether we would
6 delay or defer and made a decision that it was in our best
7 interest and customers' for overall cost exposure and
8 project exposure to be -- to continue to plough through
9 with the project. And by ploughing with it, really of
10 holding the contractors accountable so we didn't lose the
11 beneficial contracts that we had in place.

12 So we did look at it and it didn't look
13 like the right decision to slow down or to stop the work.
14 It would've increased costs significantly with no benefit
15 overall.

16 And as everyone in this room would know
17 when we're finished with this we'll have the energy loop
18 complete with the Labrador Island Link completed. It will
19 connect us, not only to Muskrat Fall, when that
20 development is complete, but to the Upper Churchill and to
21 all of the Newfoundland assets allowing us to bring energy
22 into Nova Scotia by the Maritime Link.

23 Now, we have a video that we could show.
24 It's probably about ten minutes but it's a good overview
25 of the status of all the construction activities and as we

MR. RICK JANEGA - CONSTRUCTION UPDATE

58

1 go through it, if anybody has any questions or if you want
2 to stop it, by all means I'd be glad to answer those, but
3 -- well, most of the overview that provided on the project
4 update is just a chance to see some of it.

5 So, we're -- the video is started for the
6 folks on the phone.

7 That's coming out of Granite Canal site.
8 It's a smaller substation development than Woodbine or
9 Bottom Brook, but all of the civil is now complete and the
10 switch yard is being developed. The transmission lines
11 that you see, that's actually the AC line that PowerTel
12 has constructed. Now you're looking, the next shot is of
13 the AC line along South West Brook and that is fairly
14 rough terrain. You can see the slopes that they're
15 dealing with and the access roads that have been developed
16 to build the line, but stringing is complete on a good
17 portion of it. As I've said, with the AC line it's about
18 50 percent complete.

19 So, there's a shot of the Bottom Brook
20 substation. In the background you can see the AC switch
21 yard and substation developments which has progressed
22 quite well. The Bottom Brook converter station is in the
23 foreground. Now shifting to the right side with the
24 building and all of the foundations for the cooling plant
25 are -- what you see is the large pads closest to the

MR. RICK JANEGA - CONSTRUCTION UPDATE

59

1 building which allows the electronics to be cooled and
2 allows it to operate continuously.

3 We did have a problem with the siding on
4 the building as we started to install we actually had
5 deformation of it so that has caused us a few-week delay,
6 but the installation has started again and the work is
7 progressing well now.

8 This grounding line, much different
9 construction. It looks a lot like a typical distribution
10 line but the road you see on the right-hand side is one
11 that we had to build about four kilometres in off of the
12 highway outside Stephenville. You can see the 40 white
13 dots along the side are the wells for the electrodes.

14 This is construction of one of the
15 foundations that are being excavated to mount one of the
16 pylon or the self-supporting towers. Structures you see
17 sticking out of the ground are the grillages. That's a
18 completed DC tower on the photo -- or in the photo now,
19 the grounding line running down beside it. This is
20 leaving the backside of the Bottom Brook site. So, you
21 can see it coming up the hill.

22 The steel assemblies that you see on the
23 ground that are about the size of a truck are grillages,
24 so that's -- for every one of the self-supporting towers
25 there are four of those that we need to excavate, place in

MR. RICK JANEGA - CONSTRUCTION UPDATE

60

1 with precision and refill the ground so that they're below
2 frost line and then mount the tower on each of the four
3 legs that has to be within one millimetre in a thousand of
4 accuracy.

5 You can see the excavations. The size of
6 them and the terrain that they're working in and the
7 grillages that are going to be placed to support a tower
8 in that location. Not the best of terrain to be working
9 in but optimized sites.

10 The picture you just saw and you'll see few
11 others of the transmission towers, the guide structures
12 that are assembled laying on the ground, there are about a
13 100 of those, as I said, that are ready to be stood up on
14 the base and guy wires attached.

15 And again the road -- the access roads that
16 are being developed to be able to get into each of the
17 sites along the 400-odd kilometres of transmission that
18 we're building.

19 The towers that you're looking at, they're
20 about 28 metres to 36 metres in height. This is down the
21 back side of the Bottom Brook substation, as well, so
22 we've gone down the hill leaving the site and now we'll --
23 that tower actually is for a right angle and the DC line
24 will head off to the left-hand side and wrap around the
25 lights and the brook.

MR. RICK JANEGA - CONSTRUCTION UPDATE

61

1 Again, another shot of a site where we're
2 going to erect a transmission tower, but this is the Cape
3 Ray transition site. The under subsea cable will come out
4 of the HDD conduits. It will follow a trench that will be
5 excavated up along that roadway that we built through this
6 year and a transition compound will let the underground
7 cables come up and be terminated, attached to the overhead
8 structures where it will then go from Cape Ray up Woodbine
9 on overhead transmission lines. That work just started a
10 couple of weeks ago with the transition compound
11 development.

12 That's the pad as it was left after the
13 drilling was done. The two spots you see are the exits
14 where the subsea cable will come out. We'll re-excavate
15 that place. The land cables joints attaching to the
16 subsea cable and then excavate the path from there up to
17 the transmission compound that we had just seen a moment
18 ago.

19 Beautiful landscape for tourism
20 Newfoundland, as well.

21 This is the opposite side of Cabot Strait
22 where we saw the picture of the HDD equipment. It's just
23 beside Point Aconi Generating Station. Again, the two HDD
24 conduits just sticking out of the ground. The cable will
25 come out of there. We'll excavate about a half a

MR. RICK JANEGA - CONSTRUCTION UPDATE

63

1 transmission sites, towers erected.

2 This is the Woodbine site. So, similar
3 layout to Bottom Brook with the converter and the
4 converter station, the DC side separate from the AC.

5 In the background is the existing AC
6 substation at Woodbine. The site will be developed. It
7 will be about probably the amount of AC infrastructure
8 there when we're finished on the new footprint and you can
9 see the first couple of steel segments that were being
10 installed about a week and a half ago. That site will
11 develop out to the end of the gravel pad with all of the
12 foundations for the 345 KB. The AC side, the transformer
13 has been placed on site. It's just outside of the image
14 there. In the background same with the converter
15 building, the siding has started to go on the building and
16 the grounding system and the floor system is being
17 developed now.

18 You know, the biggest issue that we've
19 faced with Woodbine site has really been around getting
20 all of the foundations in place to allow us to get out of
21 the dirt, so to speak. And this is the other terminus, I
22 guess, of the project which is at the Big Lorraine
23 grounding site. And very similar design to Indian Head
24 and the same benefits were given for the change in the
25 design for the site, design and execution plan.

MR. RICK JANEGA - CONSTRUCTION UPDATE

64

1 I think that's it. Thank you.

2 **MR. MAHODY:** It's Bill Mahody. There'd
3 been a report recently that Nalcor, Mr. Marshall had an
4 intent to attempt to renegotiate some of the terms of the
5 arrangements with Emera. Is there any update you can
6 provide us in that regard?

7 **MR. JANEGA:** Yes, there is no negotiation
8 of the Maritime Link or energy agreement. There are
9 discussions that have been ongoing for an extended period
10 of time, ever since we started with the project, about the
11 excess energy. And that is something that we've been
12 trying to get an understanding from Nalcor of how much
13 they have, what their most updated plan is for domestic
14 consumption so it's all been focused on excess energy.

15 **MR. MAHODY:** Thank you.

16 **MR. RENE GALLANT - CABLE LAY SCOPE OF WORK:**

17 **MR. GALLANT:** So, we do a lot of
18 stakeholder outreach and on Wednesday of last week we were
19 in Cape Breton meeting with about 50 lobster harvesters
20 and their counsel, Ray Larkin. We're trying to work with
21 them because we're going to be laying the cable basically
22 through their fish harvesting, lobster harvesting zone
23 next summer, during lobster season. So, we need them to
24 give us an exclusion zone for safety purposes. It'll be
25 some disruption to them and there's some compensation that

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

65

1 we want -- reasonable compensation we want to pay for
2 them, so -- pay them for that disruption. So, Ray
3 represents them and he and I will work that out
4 recognizing both the interests of the lobster harvesters
5 and the customers as we do so.

6 But Wednesday, we met with them to walk
7 them through what will actually happen. What it looks
8 like. And as we were preparing for today we thought you
9 may also be interested. So, I'm going to try to run you
10 through this presentation in the next 15 or 20 minutes.
11 And you should just keep in mind this is usually done by
12 an engineer, so I'm just going to wing it. I'm just going
13 to shoot from the hip whenever I don't know. Okay, Rick?

14 No, if I don't know the answer we have
15 someone here who can tell you.

16 Okay. So, we were just reminding folks at
17 that point of the scope of work that -- we'd been through
18 this -- but really we're focused now on the subsea and as
19 Rick explained, we have no splicing. It'll be laid in one
20 piece and it'll start in the spring and will be done by
21 September of next year.

22 So, there are several specific items that
23 we have to do, activities. We have to clear the route.
24 Then we lay the cable down. We pull it in to those HDD
25 openings that Rick showed you. I've actually got some

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

1 good photos of that. Transpooling refers to, we lay one
2 cable and then we have to go back and the same vessel will
3 load the second cable on to the vessel from land and then
4 it -- the second will get laid. So that interim step is
5 called transpooling.

6 Then we trench the cables. Some of this is
7 in parallel. Berming refers to putting rock over top to
8 make sure that it is protected so we try to have at least
9 two metres of protection in certain areas of the cable
10 laying. We'll talk a little bit about that and then after
11 it's all done, we'll do a video survey to make sure that
12 everything worked the way we thought, because the most
13 important thing is once it's in and it's quality cable
14 that it's actually protected from any potential damage.

15 So, Rick told you about the cable being
16 manufactured. There's a couple of nice images here of
17 what it actually looks like and how it's done.

18 So, they start with -- for us, it's copper
19 conductor, then they cover it with this conductor screen.
20 It gets insulated a couple of different ways, taped and
21 then a lead sheathing gets installed over top. And each
22 one of these phases is done subsequently in the
23 manufacturing process.

24 Then the polyethylene jacket and then this
25 tensile armour which when I learned about it I thought was

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

67

1 pretty interesting and there's some engineering reason
2 which I can't explain to you why they go in different
3 directions but it's really important and keeps it strong.

4 **UNIDENTIFIED VOICE:** (Not on mike).

5 **MR. GALLANT:** Thank you. You can ask an IR
6 if you need to know more. At some point you'll get to
7 ask.

8 Then it's covered in this polypropylene and
9 you'll see there are markings here just in this image and
10 the markings are identifiable to the cable engineers to
11 understand which part of the cable they're looking at if
12 they ever have to check it after it's installed.

13 This is what it looks like from a sort of a
14 face on and this is actually the width of our cable, 9.8
15 centimetres. So, this is a graphical representation of
16 our actual cable and the core of the cable is 3.7
17 centimetres.

18 I think this one might have been in Rick's
19 deck. But this basically is our cable. It's the first 60
20 kilometres of the cable that customers in Nova Scotia will
21 be relying on.

22 When we laid a cable it'll start -- this
23 represents what the seabed -- seafloor looks like in terms
24 of the depth of the water. So, if this was the top of the
25 water. This is how deep it will be at each kilometre.

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

68

1 So, up here we say, "Landfall Nova Scotia
2 to landfall Cape Ray," but actually this represents Cape
3 Ray on the left-hand side of the chart and it's Point
4 Aconi on the right-hand side of the chart. So, the water
5 depth falls very quickly off the Newfoundland coast but
6 off the Nova Scotia coast, off Point Aconi, it's a very
7 gradual rise.

8 So, when you're laying a cable in these
9 kind of circumstances, at some depths it's very unlikely
10 that there would ever be any interference with it. You
11 wouldn't drop anchor, you wouldn't be dragging, you
12 wouldn't be fishing at these depths, so you can leave the
13 cable on the seabed floor, but -- so on this edge you need
14 to protect the cable. It needs to be buried or covered in
15 rocks to make sure that any activity in that part of the
16 water doesn't interfere with or potentially cause damage
17 to the cable. So we'll talk more about that.

18 So, our path for our cable, which was
19 approved in the environmental assessment process, does not
20 cross any active cables but it does cross existing
21 abandoned cables. And so we need to make sure the route
22 is cleared. So, the very first stage of cable laying is
23 to clear the route.

24 We know that there's an abandoned
25 communication cable that crosses -- I'll show you a map in

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

69

1 a moment -- that crosses the cable in a couple of
2 sections. So in April we'll go through with a grapnel
3 facility and we'll cut that cable and remove it. So that
4 it doesn't interfere with the cable laying and if there's
5 anything else that has been -- found its way to the bottom
6 along our cable route, since we first did our survey, we
7 will find that and remove that as well, but there'd be no
8 other cables.

9 So, as you can see in this image, this just
10 shows the path of the cable and this is -- this green
11 cable is the communication cable and you can see it
12 crosses our path here and it crosses down here. So we
13 will cut it in those locations so that we can lay our
14 cable without any issues and that cable is abandoned and
15 the owner of that cable knows that this is what we're
16 going to do.

17 And we'll go down there -- our contractor
18 will go down there and do a visual inspection on a
19 remotely operated vehicle to ensure there's nothing else
20 down there that we need to be aware of or to avoid.

21 So, as Rick explained, about 170
22 kilometres, we have about a 10 centimetre cable it gets --
23 both of them get laid one after another, coming off of a
24 single turntable. I've got some good images of that to
25 show you.

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

1 The vessel goes fairly slowly across as it
2 lays the cable and it's quite a significant cable and it's
3 always monitored and the most important thing is the
4 tension of the cable and you'll see why when you see the
5 up close images.

6 And as we assured the lobster harvesters,
7 laying the cable on the ground really does nothing to the
8 bottom. There's no -- nothing is done. It's simply laid
9 right on the bottom.

10 Just keep going here. So, we'll start in
11 Newfoundland. We will have to keep them a certain -- when
12 we lay the second cable it has to be a certain distance
13 away from the first cable for engineering reasons and I'll
14 show you some of that data as well. And it ensures that
15 if you ever have to go down and fix one cable you're not
16 going to put at risk the other cable because it's too
17 close.

18 So, this is the vessel that's going to be
19 laying the cable. You can see it's a significant size
20 vessel and, you know, it's interesting the question that
21 you asked Bill about, you know, should we be -- should we
22 have delayed the work part way through of the construction
23 of the project when we learned that the Nova Scotia block
24 would be delayed. Right from the beginning of the
25 project, the schedule has been critical to us because the

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

71

1 pieces have to fit together like a puzzle and missing on
2 one can cause a big problem on others.

3 So, the very first thing, and I remember it
4 when I came on Board, was the importance of booking the
5 vessel. Because these vessels are in demand and used all
6 over the world and very, very expensive and you have to
7 book your slot.

8 So, the very first contract, actually,
9 major contract, that we finalized -- Mary Ellen negotiated
10 this with our team -- was the cable -- was for the cable
11 construction and installation and involving the vessel.
12 So the Nexans contract -- their contract because of the
13 significance of getting a vessel like this and having the
14 window to install it in weather that ensures there's not
15 going to be any problem.

16 So, you can't sort of say, "Can we do it
17 six months later," because you have to book this thing
18 three to four years in advance.

19 So, this turntable right in the middle,
20 literally a turntable, is where the -- our cable will be
21 when it's being laid.

22 So, you've seen this image from Rick's
23 presentation. On Slide 15 there's a little video. Maybe
24 we'll play it. So, these videos are pretty short. Much
25 shorter than the flyover ones. So, I'll show you. That's

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

72

1 my fault. I shouldn't stand over here.

2 Are we back on? This is a promotional
3 video by Nexans, of course, but it does explain how the
4 cable loading and installation actually happens.

5 So, these cables are being manufactured one
6 in Japan and one in Norway. So they'll be separately
7 transported and they'll both arrive in late winter,
8 February-March timeframe. Sixty people on this vessel
9 when it's operating and laying the cable and, no, we can't
10 take other people onto the vessel. None of us can get
11 onto the vessel. We don't take, sort of, observers or
12 volunteers or anything like that. Although many of us
13 have asked if we could be on for at least part of the
14 installation and it's not possible.

15 So, you can imagine 7,000 tonnes of cable,
16 170 kilometres of cable going through this system. And
17 the weight of this cable as it's being let off the back of
18 the ship and loaded into the water. See how it works.
19 This ensures that there are no kinks in the cable, that
20 it's laid straight and, more importantly, that the weight
21 of the cable coming off the back of the ship is
22 controlled, so that it doesn't stretch or break.

23 And then the remotely operated vehicles on
24 the seafloor to make sure that it's put in the proper
25 place and avoids any obstacles.

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

73

1 **UNIDENTIFIED PERSON:** (Not on mike).

2 **MR. GALLANT:** Yes. Yeah, they'll have an
3 eye on that, yeah. And we -- when we did the horizontal
4 directional drilling on both sides they have video of that
5 as well, so it's fascinating to see some of that.

6 Okay. I think that's it for that one.

7 So, as you said, video and -- this is an
8 image from a video of an actual cable being laid.

9 So, I was telling you they have to be kept
10 a certain distance apart from each other to ensure that
11 the cables are properly connected. We also are trying to
12 avoid obstacles or hard bottoms, so sometimes it's a
13 little wider distance than you might expect, but -- so
14 this would be the furthest apart the cables would be --
15 sorry, this one would be furthest apart the cables would
16 be and that's because of the condition on the seafloor at
17 that point.

18 And so that's our pull-in in Cape Ray. The
19 actual bust-through on the HDD where the cable would go.

20 So when we get to -- so we'll start at that
21 first one. We'll start here and then when it's finally
22 across the 170 kilometres, we get to the end in Point
23 Aconi and it has to be floated out onto the surface on
24 buoys to make sure it can be properly connected to the
25 tap-in at Point Aconi under the -- on the subsea floor.

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

1 And so there's a number of, probably half a
2 dozen, of these sort of small vessels that ensure that the
3 buoyed cable rolls out properly and we need probably a
4 couple of kilometres of safety distance at this stage from
5 the boat which is what we're talking about with the
6 lobster harvesters, why we need that, and it's because the
7 way the cable comes out is it sort of takes up a huge
8 amount of space as it floats out. You're floating out to
9 probably a kilometer and a half of cable at this stage and
10 laying on the top and then gently bringing it down.

11 So, then once the cable is laid we trench
12 it and so there's a remotely operated vehicle called a
13 Capjet that goes across the cable. It uses water to
14 trench a hole in the ground and as it goes, the cable
15 gently falls into it. You'll see some video of it but it
16 basically billows out the sand and lets the cable fall
17 down and then the sand falls in over top and the ideal
18 depth that we want is two metres and if ever can't get
19 that, that when you use the rocks to cover it up to the 2
20 metres. And that, Nancy, as you pointed out, we'll be
21 monitoring that by video making sure that goes well.
22 That's mentioning the rock. We've estimated less than
23 eight percent of cable length will need to be covered by
24 rock. It's in our interest, your interest as customers,
25 that we minimize the amount of rock berming because of

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

75

1 cost. If we don't use it, then we won't pay for it. So,
2 we'll try to trench as much of this as we can

3 And this kind of shows what we're
4 expecting. Kilometre post. So, distance from the start
5 of zero which is Cape Ray all the way over almost 170
6 kilometres to Point Aconi. And we've measured ---

7 **UNIDENTIFIED VOICE:** (Not on mike).

8 **MR. GALLANT:** Thank you. Thank you. We've
9 measured at these various posts the burial requirement
10 based upon the water depth. So, when we're up close to
11 shore and the water is not very deep, we need a deeper
12 burial and when the water is very deep, we have no burial
13 and no rock.

14 So, here's the Capjet. Is this a video? I
15 think this is a video.

16 **UNIDENTIFIED VOICE:** (Not on mike).

17 **MR. GALLANT:** Is that -- that's just a
18 picture -- a blind picture? Okay. There's another
19 picture of an actual cable being trenched.

20 This is another promotion but it does show
21 you what this is like.

22 So, the cable's on a big ship. We showed
23 you the Skagerrak. This Capjet is operated from a second
24 ship, a different ship. That comes in behind. So, that's
25 why we can start the cable trenching while Skagerrak is

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

1 loading up and starting to lay the second cable.

2 Every time I see that image I think of my
3 son playing video games. I think maybe he does have a
4 career somewhere involving science.

5 So, it goes pretty slow to make sure that
6 the trench is deep and obviously, depending what it finds
7 on the seabed it takes a little bit longer, but -- so,
8 part of our scientific studies, we've also analyzed the
9 addition of the properties of the sand, silt and clay on
10 the seabed floor. So we know how much of it is sand and
11 how much of it is clay. What we're going to face when we
12 start trenching.

13 Thank you Shellie. Yeah, so that's going
14 to be operated from the Polar King.

15 And, then, finally, the third vessel we
16 need is the rock dumping vessel. So it's this Rockpiper
17 vessel. And that's the kind of rock that gets dumped and
18 you can see that it basically forms a pyramid right over
19 it now. We would hope we'd have some depth of trenching
20 before putting rocks on it, so -- but what we're trying to
21 get is the depth on that chart I showed you earlier, up to
22 two metres close to shore.

23 So, a lot of this now is about the effect
24 on the lobster fishing grounds. You need a 500 metre
25 safety area to ensure that we can do this safely but once

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

77

1 we've done, there's no restrictions on navigation.

2 So, when there's no vessel happening we're
3 not actually putting the cable out over the water. The
4 vessels can go back and forth. As you can imagine, that's
5 pretty important to the lobster harvesters.

6 There's a graphical representation of the
7 zone we're asking and the lobsters are harvested right in
8 that zone. And as you can appreciate, you know, they're
9 quite concerned about what's going to happen to their
10 livelihood next year, so, we're having discussions with
11 them now.

12 As I've said, we've analyzed the sediment
13 across the cable lay area and so each one of these is at a
14 different point across. These ones, MG1 and 7 are the
15 ones that are in the lobster zone. This is not probably
16 very interesting to most of us but for the lobster
17 harvesters it's pretty critical to understand because the
18 extent of sand will indicate how much affect it has on
19 lobster.

20 So, if it was going to cause a big plume,
21 which it would not, they would be concerned about it.
22 This is the evidence, the scientific evidence that we
23 have, that with conditions like 85 percent sand and only
24 five percent clay we're not going to cause a lot of
25 disruption on the seabed floor as we do the trenching.

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

78

1 So, we are expecting minimal effect on the
2 lobster population. Also remember it's actually -- we
3 need a big zone, but we are actually only doing a very
4 small bit of trenching.

5 We have an environmental protection plan
6 and an emergency response plan that have been prepared by
7 Nexans and, of course, all of this has identified and
8 approved through our environmental assessment release
9 which we got a number of years ago when we told them what
10 we would be doing. And that included studying the effects
11 of the cable on lobster. So, if we were doing a study
12 before and after installation of the cable to see how
13 lobsters behave, so in summary, basically, what it's going
14 to show is we know -- we'll know the pattern of lobster
15 movement on the seabed floor in this area before the
16 cable's down. We'll put the cable in and we'll check that
17 again and we'll see what happens.

18 Folks are concerned that the lobsters will
19 want to be avoiding the cable. We're pretty confident the
20 lobsters will have no idea the cable's there with two
21 metres of depth, but we'll see if they refuse, for
22 example, to cross the cable path. Then we'll have some
23 evidence that -- of what the cable is doing but we're not
24 expecting any changes and the science will show us.

25 So, there's the schedule. Grappling and

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

79

1 surveying will be in April. We'll start, May. This is
2 all subject of course to ice and weather and progress
3 being made the way we want to, but if it goes well, by
4 September 1st everything will be completed. The two
5 cables will be pulled in by the middle of June and we'll
6 just be finishing trenching and berming through the rest
7 of the summer.

8 So, now you know about how cables will be
9 laid. So, I thought we had one more video.

10 **MR. PRONKO:** Sorry, Rene. You mentioned
11 before that you wouldn't have any monitoring -- or nobody
12 on the vessel while the cable's being laid. What type of
13 monitoring will you have available?

14 **MR. GALLANT:** Sorry, there will be monitors
15 on the vessel. Nexans appointed monitors, ENL appointed
16 monitors. I just meant that they don't get any of --
17 like, observers. Like, Rick and I don't get to go on and
18 watch what happens or -- like, some of the lobster
19 fishermen wanted to go on. Lots of people are very
20 interested. People have said, "Can I go and see how this
21 works?" And that's what I meant.

22 **MR. PRONKO:** So, you have representatives
23 on there.

24 **MR. GALLANT:** Absolutely. We'll have our
25 own representative. Nexans will have special monitors.

MR. RENE GALLANT - CABLE LAY SCOPE OF WORK

80

1 That's absolutely correct. All the spots are taken
2 though. I would've loved to have had you on Steve.

3 **MR. MAHODY:** Rene, is Nexans doing the
4 Labrador Island Link portion? Rick, do you know?

5 **MR. JANECA:** Yes, they are. Yeah, and that
6 work's just about complete.

7 **MR. GALLANT:** Other questions about any of
8 this? Lots of details here. We're pretty excited by all
9 of these details, as you can tell, but probably a good
10 time for a break and then we'll come back and we'll finish
11 up the rest of the agenda. So, we probably have coffee
12 and that kind of thing outside.

13 **MS. GREENOUGH:** Yes, and I just wanted to
14 add, before we break, we'll take about a 15 minute break,
15 but really appreciate the questions that folks have.

16 So, if there's anything you can think of
17 that may not have come up at the time of the
18 presentations, don't hesitate to approach us on the break
19 or after the conference. We'd be happy to answer any
20 questions you have. Thank you.

21 --- Upon recessing 2:54 p.m.

22 --- Upon resuming 3:13 p.m.

23 **MS. GREENOUGH:** Okay, folks, we're going to
24 reconvene now and Brian Rendell's going to walk us through
25 a cost update.

MR. BRIAN RENDELL - FINANCIAL UPDATE

81

1 **MR. BRIAN RENDELL - FINANCIAL UPDATE:**

2 **MR. RENDELL:** Thanks, Mary Ellen, and good
3 afternoon everybody. As much as you're probably wishing I
4 had some music and some dance and stuff, unfortunately, I
5 don't. They don't let the finance guy do anything too far
6 out of the norm.

7 I just have a couple of fairly succinct
8 slides to cover with you here today. And the first one is
9 one that you've seen in certain shape or forms before, but
10 just to bring everybody's memory back to where we are --
11 where we started, frankly, and where we are now.

12 You'll see the table at the top, and I'm on
13 the finance or the "Cost Update" slide for those of you on
14 the phone.

15 To refresh your memory, when we applied at
16 the -- with the UARB back in 2013, at the time Nalcor's
17 projects were estimated at 6.2 billion and that was a fixed
18 number. It remains a fixed number for this calculation.
19 We had estimated the Maritime Link to be between 1.4 and
20 1.7 billion and with the 20 for 20 mechanism, or principle
21 that we have in place, the range that we had requested
22 approval from the UARB for was 1.52 to 1.58. So the UARB
23 approved that 1.52 with a 60 million dollar variance.
24 Therefore, having a range of 1.52 to 1.58.

25 Subsequently, at our "Decision Gate 3"

MR. BRIAN RENDELL - FINANCIAL UPDATE

1 point, we estimated the project cost to be 1.577 and it's
2 that 1.577 that is compared to the 1.4 to 1.7 range. So,
3 we were pretty close to the middle of that range. When you
4 do that 20 for 20 math you come to the 1.555, so lots of
5 1.5 numbers here, but the 1.555 being the number that the
6 Nova Scotia customers would be responsible for if in fact
7 we require our full budget of 1.577 and the difference
8 there, the 22 million, according to our arrangements with
9 Nalcor, would be an amount Nalcor would then contribute
10 such that the Nova Scotia customer would pay no more than
11 1.555.

12 I made a note at the bottom here that if
13 we're so fortunate to complete the project at 1.55 or
14 lower, it would be that lower amount that Nova Scotians
15 would be responsible for paying.

16 So, that's just a bit of a memory -- a walk
17 down memory lane for us as to the basis of the original
18 cost estimate and the amounts that were included in the
19 decision that UARB provided back in 2013

20 So, the question is, of course, where are we
21 now? As you heard Rick say earlier, to the end of
22 September, which is what the second page shows, to the end
23 of Q3 of 2016, we've incurred 924 million of that total
24 amount which means that we have 653, give or take, to
25 complete, in order for us to stay on the budget of 1.577

MR. BRIAN RENDELL - FINANCIAL UPDATE

83

1 and as you heard us say many times before and I'll say
2 again, here now, we are optimistic that we will be able to
3 meet that budgeted amount. We'll be within that 1.577
4 budget which would translate to the 1.555, as I said
5 earlier for customers, no more than that.

6 Again, if we're so fortunate to be able to
7 come in with a lower number than that then that's what
8 customers will pay. As we said before, our customers won't
9 pay, certainly, any more than what we actually incur.
10 Nancy?

11 **MS. RUBIN:** How much of the contingency have
12 you eaten into with the works to be done? Or sorry, the
13 works done to date?

14 **MR. RENDELL:** That's a fair question. A
15 good question.

16 I'll go back to the first slide and one of
17 the other points I should have mentioned on that first
18 slide is included in that 1.577, in our project budget,
19 there's a total of 174 million of contingency and
20 escalation. So, those two amounts combined. To date, to
21 the end of September, we've needed less than 15 of that.
22 So, it's been about 15 million to the end of September of
23 the 174 million of that contingency.

24 And for clarity, let's just assume for today
25 that all goes perfectly well and there isn't another dollar

MR. BRIAN RENDELL - FINANCIAL UPDATE

84

1 of contingency necessary between now and conclusion, that
2 would mean that our total costs would be the 1.4, which is
3 the base cost before the escalation and contingency plus
4 that 15 million. So it would be a number starting with 1.4
5 and that would be the number that Nova Scotia customers
6 would pay.

7 So, I just want to make it clear that that
8 would be below the 1.52 figure because the all-in cost in
9 that case would, in fact, be below that.

10 So, we're working hard, really, to stay
11 within the 1.52 amount that's the lower level of that range
12 that was approved at the UARB. So, we have consumed a
13 small amount of contingency to date, nowhere near the 174,
14 obviously, and that's what we're focused, very much on now,
15 over this next year to complete the project. To stay
16 within that 174 hopefully making it as low as we possibly
17 can for the benefit of our customers.

18 So, we're quite pleased, as you heard Rick
19 say earlier. We've gotten through some fairly significant,
20 risky items of work -- scopes of work. You heard him talk
21 about the horizontal directional drilling campaign which
22 brings with it significant risk and we were able to get
23 through that with our base budget without having to use any
24 contingency associated with it.

25 Similarly, our site preparation work, our

MR. BRIAN RENDELL - FINANCIAL UPDATE

1 access clearing work, our lead engineering. There's been a
2 lot of work done to date and with all of that work behind
3 us, having a relatively small component of that contingency
4 needed to date we are feeling quite good about.

5 That said, we still have a year to go and we
6 know with the three major contracts, still very much
7 underway as Rick would've mentioned before, there still
8 remains significant risk and that's what our focus is now
9 is managing those three major scopes of work and the
10 contracts that are, obviously, supporting them.

11 So, really, the last, again that second
12 slide, really shows you what's left, 653, and so, Nancy, to
13 your point, the escalation and contingency that's
14 remaining, as you can see there, 33 or 34 million
15 approximately of escalation and 126 million, approximately,
16 of contingency, about 160 of that 174, approximately, still
17 on hand. And that's what we're protecting as best we can,
18 knowing full well that there's still some significant risk
19 remaining.

20 So, it was short and sweet. No song or
21 dance or music but, again, we're feeling very confident but
22 also realistic of what's ahead of us over the next year and
23 are trying to -- very hard and very confident we're going
24 to remain within the range that was approved back in 2013.
25 Obviously the lower end of that range the better for all of

MR. BRIAN RENDELL - FINANCIAL UPDATE

86

1 us.

2 **MR. GALLANT:** So, Brian, if I could, I'll
3 just add a couple of thoughts from my perspective.

4 So, Brian's expressed, for sure, our
5 aspiration here in terms of what we'd like to see for
6 customers, what we'd like to deliver, but as you can
7 appreciate from the presentations that Rick and I made
8 earlier, the pressure on these numbers is experienced by
9 all of us every single day as contractors are, you know,
10 doing their work and finding reasons to pursue claims and
11 try to, you know, raise their price, sometimes for
12 legitimate reasons that we're going to have to fund and
13 sometimes, in our view, not for legitimate reasons. So,
14 you know, we have a year to go. We've spent 60 percent of
15 the original budget and we have some very significant,
16 high-risk items left on the work plan before we can say
17 what the final bills really are going to look like. So,
18 that's why when we report to the UARB and what you see
19 today, we are continuing to maintain our budget at the
20 original approved amount of 1.577.

21 Any, sort of, one significant event can
22 cause us to need these funds. So, if there's a delay or a
23 problem in the next few problems with the construction of
24 the cable and we only get one cable delivered then we have
25 to figure out how to manage that problem and it probably

MR. BRIAN RENDELL - FINANCIAL UPDATE

87

1 means we have a whole year more before we can complete the
2 project, even if we can get one cable installed and
3 connected and operate the system with one cable. And that
4 would add cost.

5 So, at this stage, we are continuing to
6 forecast 1.577. As you can appreciate, our contractors
7 need to understand our belief that the budget is as fully
8 allocated and consumed and we do not have anything excess
9 in our budget to respond to their claims.

10 So, you'll see in the upcoming filing that
11 Mary Ellen is going to talk about and it -- really right
12 through until we have our final costs, remaining committed
13 to doing the project at the budget that the Board set.

14 **MR RENDELL:** Last point that I'll note is
15 the AFUDC, of course, being the other significant
16 component, 230 million was the amount that was estimated
17 and much like the 1.577 budget that we talked about, the
18 230 million, our forecast is still showing being a number
19 that we think we can achieve on behalf of customers.

20 So again, on time and on budget as you've
21 heard us say many times before and again a lot of -- a year
22 ahead of us yet but so far we're where we expected we would
23 be.

24 Happy to take any questions. Thank you.

25 **MS. MARY ELLEN GREENOUGH - REGULATORY PLANNING UPDATE:**

MS. GREENOUGH – REGULATORY PLANNING UPDATE

88

1 **MS. GREENOUGH:** Well, thanks a lot, Brian.

2 So, now I'm going to speak with you. One moment. A

3 technical difficulty there. Okay. Thanks, Shellie.

4 So, I'm happy to be here today to speak with
5 you about the process that we're going to apply to seek
6 recovery of project costs.

7 I'm going to provide a bit more detail on
8 the process that Rene would have outlined for you back in
9 February when we last met, including a bit of an update on
10 when you can expect to become involved in official
11 processes with us.

12 So, as you may recall from Rene's update,
13 there are currently two regulatory filings that are being
14 planned for NSPML. Those being an assessment filing and a
15 final cost filing. And I've just gone ahead to skip to our
16 anticipated timeline for these filings on the second page
17 of the Regulatory Process deck. Because it really does
18 represent well these two filings that we are going to be
19 engaged in over the coming months.

20 To start, under the **Maritime Link Act**, we
21 are required to apply to the UARB to set an assessment of
22 project costs before energy flows over the link. So,
23 before January 1, 2018.

24 So, in order to satisfy this requirement,
25 we're planning to make our assessment filing by December of

MS. GREENOUGH - REGULATORY PLANNING UPDATE

1 this year. Because, of course, as we've been discussing,
2 actual costs will not be known until the link is
3 commissioned and then until close-out activities complete,
4 the interim assessment is going to be based on our
5 forecasted costs for the link consistent with the reports
6 that we've been filing with the UARB each quarter.

7 So, in this regard, the assessment is
8 largely going to mirror the NSPI BCF anticipated assessment
9 filing that you would have seen last spring.

10 So, the interim assessment would be, again,
11 to summarize, based on a forecast and, as you can
12 appreciate, it will be temporary as our final cost
13 application to follow in 2018 will be put in place once the
14 project is commissioned and close-out activities are
15 complete.

16 So, once those actual costs are filed with
17 the Board, any necessary adjustments can be made to ensure
18 that customers will pay no more than the actual cost of the
19 link.

20 So, we would envision any substantive
21 questions that any of you have at that time can be
22 addressed in the final cost filing.

23 Of course, this is all subject to Board
24 direction on process but it does give you a better
25 understanding of when and where we anticipate NSPML

MS. GREENOUGH - REGULATORY PLANNING UPDATE

90

1 regulatory processes to occur.

2 So, it's really a short update for you folks
3 today and I'd be happy to entertain any questions that you
4 have about the process, but you can see that we are
5 anticipating that filing on or before December 14th, really
6 carrying the process through until sometime in April when
7 we would anticipate a potential hearing on the process.
8 And from there we will carry through the major construction
9 and commissioning of the project to complete on January 1st
10 per the approved schedule and from there, upon
11 understanding actual cost, will then make our final cost
12 filing.

13 So, it's really -- it's a short and sweet
14 message today. Rene, I'm not sure if you have anything to
15 add to that.

16 **MR. GALLANT:** Just for the lawyers who are
17 trying to plan their year, we have had a communication with
18 Bruce Outhouse about his schedule and he's indicated that
19 his understanding is there's time on that Board calendar
20 for a hearing if it's necessary on the interim assessment
21 in the week of April 3rd.

22 So, filing by mid-December would provide
23 enough process to let that happen. So, he wasn't -- you
24 know, didn't make a firm commitment to it, but he thought
25 that that would make sense:

MS. GREENOUGH – REGULATORY PLANNING UPDATE

91

1 **MR. PRONKO:** We do have that week set aside,
2 the April 3rd week.

3 **MR. GALLANT:** Thanks, Steve, that's great.

4 **MS. GREENOUGH:** Yeah, so hopefully that
5 helps with planning and if folks have no questions then I
6 believe that concludes our presentations for today.

7 **MR. PRONKO:** I'm going to throw out a
8 question, Mary Ellen.

9 **MS. GREENOUGH:** Okay.

10 **MR. PRONKO:** So, the chart that you showed
11 earlier, indicated that any substantive questions would be
12 dealt with here in the final cost application.

13 **MS. GREENOUGH:** Yes.

14 **MR. PRONKO:** Just wondering about the issue
15 of used and useful. The approval of the Maritime Link was
16 primarily based on Nova Scotia ratepayers having the
17 benefit of energy flowing from Newfoundland to Nova Scotia.
18 And with Muskrat Falls not being available for a couple of
19 years, I was wondering what you're intending to include in
20 the filing with regards to used and useful?

21 **MS. GREENOUGH:** Well, we can tell you that
22 the Link, itself, as of January 1st, 2018 will be used and
23 useful. It will be available for the use of Nova Scotia
24 customers at that time. You know, we are -- the
25 application is not linked to the availability of the Nova

MS. GREENOUGH - REGULATORY PLANNING UPDATE

92

1 Scotia block. So in that regard, we'll be representing the
2 link as being used and useful as of January 1st, 2018.

3 **MR. GALLANT:** So, I can add a couple of
4 things, Steve. So, Bruce has raised this question with us.
5 We've had a little chance to think about it. And, you
6 know, the Board has approved BCF FAM rates for Nova Scotia
7 Power that include assumptions about the Maritime Link
8 coming online and when the Nova Scotia block will start.
9 So, I think that's one of the key points.

10 Also approved an application for a major
11 project with a schedule and a budget, which, as you can see
12 from today, makes it pretty hard to deviate from when we
13 would deliver the Link. So, we think we're going to meet
14 that.

15 At that point, the Link will connect
16 Newfoundland and Nova Scotia. Energy will be able to flow
17 in either direction and it'll be up to Nova Scotia Power to
18 maximize the economic value of that asset to customers just
19 the way that it would with any of it's other assets,
20 whether transmission or generation or otherwise. The
21 formal agreements between Emera and Nalcor that were
22 approved by the UARB always contemplated that the
23 transmission lines would be connected before the Nova
24 Scotia block would flow. There are provisions in there for
25 energy being made available, the netback price is before

MS. GREENOUGH - REGULATORY PLANNING UPDATE

1 the Nova Scotia block flows, and so some of the
2 communications that are happening that Rick mentioned with
3 Nalcor now are about getting access to those economic
4 benefits and that value for customers before the Nova
5 Scotia block flows.

6 So, I think that as Mary Ellen says, there's
7 not going to be -- we'll have lots of evidence to this
8 effect but I think at the end of the day there won't be any
9 doubt that the Link will be available, energized, will be
10 used, will be useful, including under the Board's and our
11 accounting policies which provide for this exact situation
12 where you have an asset that may not be using to it's
13 maximum level but is going to be useful in the future and
14 if that counts as used and useful.

15 So, we'll have some evidence on that, both
16 our own evidence and some expert evidence, to try to, you
17 know, comfort the Board and stakeholders about the benefit
18 of having the Link on time and available. And the
19 alternative, of course, is that the Link is not being used
20 and customers don't get any value from it, which I don't
21 think any of us would really want. One of my points that
22 I've thought about with Bruce is really what's the -- what
23 is the real concern? Because used and useful is a good --
24 you know, it's kind of a catchphrase way of describing it
25 but when you look at the test for used and useful, you

MS. GREENOUGH - REGULATORY PLANNING UPDATE

1 know, nobody would say a distribution line to a new suburb
2 is not used and useful because it only serves one customer
3 when it was built to ultimately serve the whole suburb and
4 it will over time and by -- you know, and some years in the
5 future it's going to use the whole suburb. It's kind of
6 similar to that. Like every generating unit, every coal
7 plant, every distribution line starts out serving less than
8 what it was ultimately designed for.

9 So, I think the real issue is, there's so
10 much value in the Nova Scotia block that the customer --
11 the concern is that the customers, they're being asked to
12 pay for that Nova Scotia block for a couple of years before
13 it is received, are asking, you know, legitimate questions
14 about is that fair. Especially if at the end of the life
15 of the contract if the line is paid off there may still be
16 energy flowing because of the 35 years and moving by two
17 years.

18 And I think that is -- my sense of it is
19 that's the real question in people's minds. So I think we
20 have lots of things to discuss about that particular issue,
21 because, of course, in the early years customers also get
22 five years of supplementary energy that customers at the
23 end of the day don't get.

24 So, I think there are lots of points to
25 discuss about the value that's going to be available to

MS. GREENOUGH - REGULATORY PLANNING UPDATE

1 Nova Scotia customers over the life of the Maritime Link
2 and I think there's lots of evidence that it's going to be
3 used and will be useful and the Board, fortunately, because
4 of its regulatory process has lots of ways to make sure
5 that that happens including our final assessment. Making
6 sure that we did indeed deliver it on the first of January
7 2018. Including the FAM making sure Nova Scotia Power did
8 indeed use it to its maximum extent and then they can go
9 back and look at every transaction that they did or did not
10 take and see whether it was an economic decision or not for
11 customers.

12 So, that was a long answer to your question,
13 but you can see we've tried to think very deeply about
14 bringing it online and from our perspective, as the company
15 that was established to build it, we think we will, by
16 delivering it on time and on or under budget, we will have
17 met our obligation, turned it over to Nova Scotia Power who
18 is already collecting the funds in that same amount. I
19 think it's a legitimate question for customers to discuss
20 and make a decision about that but I think from our
21 perspective we need to recover the funding in order to pay
22 our bills, to operate the line, to, you know, repay our
23 lenders and our investors and that really starts once it's
24 commissioned. Like, we can't -- we don't have any other
25 source of revenue. We are a one-project company, so that's

MS. GREENOUGH - REGULATORY PLANNING UPDATE

96

1 sort of the explanation we'll give with a lot more detail
2 around it.

3 **MR. PRONKO:** Yeah, I wasn't really expecting
4 you to justify all those right now, sir. Certainly, one of
5 the concerns is going to be what portion of the costs
6 should ratepayers be responsible for in the early years and
7 I was phrasing that, this issue -- to ensure that you're
8 including something in your application, that the used and
9 useful concept will likely be addressed during the
10 proceedings?

11 **MR. GALLANT:** Yeah. So, we will and again,
12 I think -- I'm sorry to have gone on at length. I just --
13 I know it's on everybody's mind. We've had one-on-one
14 conversations with lots of stakeholders who have raised
15 these similar questions. I think Nelson raised them with
16 Mary Ellen and Nancy's asked similar questions and I just
17 wanted you to know we are very alive to the questions and
18 we're going to try to provide every answer we can in our
19 filings so that, you know, you don't have to ask again
20 later. It'll be upfront. We'll tell you everything that
21 we've thought about, about the issue and again, I really
22 think it's about equity between generations of customers
23 rather than used and useful. I don't think anyone's going
24 to doubt that the line will be operational and providing
25 some level of benefit. But, of course, not as much as if

MS. GREENOUGH - REGULATORY PLANNING UPDATE

97

1 the Nova Scotia block were flowing.

2 **MS. RUBIN:** Is this a joint application with
3 NSP?

4 **MR. GALLANT:** No.

5 **MS. RUBIN:** So, will they be available to
6 provide information from their perspective about it being
7 used and useful or is this all from NSPML's perspective?

8 **MR. GALLANT:** Do you want me to keep
9 answering Mary Ellen, or do you want to take it?

10 **MS. GREENOUGH:** Sure, feel free.

11 **MR. GALLANT:** So, it's a joint -- it's a
12 single application. When NSPI filed its BCF there were a
13 couple questions about the Maritime Link and we helped them
14 with their answers. I'm sure NSPI's going to be available
15 to do that for us if there are similar kinds of questions,
16 but I didn't expect them. I'm sure they're not expecting
17 to participate.

18 So, who -- we had this discussion with Bruce
19 before the NSPI BCF and we were thinking that that might be
20 a joint application, so we could do this all at once. He
21 urged us to make them separate. And so that's the path
22 we've walked down.

23 I didn't mean that to sound like I was
24 blaming it on Bruce. Simply pointing out that I think that
25 for awhile we've all been understanding that there are two

MS. GREENOUGH - REGULATORY PLANNING UPDATE

98

1 separate processes. Their -- by that I mean, NSPI's
2 collection of revenue from customers is separate from our
3 collection of revenue from NSPI. We believe the amount
4 should match, but the Board requires the processes to be
5 different because of the way the statutes interact.

6 **MS. GREENOUGH:** Okay. Thanks, Rene. Any
7 further questions?

8 **MR. MAHODY:** Just one more, Mary Ellen. In
9 relation to the evidence that will be filed in support of
10 your application, I take it you'll give the most up-to-date
11 and accurate view as to when the Nova Scotia block will be
12 available as part of your application for the assessment.

13 **MS. GREENOUGH:** Well, we will certainly be
14 giving the best information we have from Nalcor, and we are
15 -- we have their best information based on their technical
16 conference back in the summer. And so, that's really what
17 we're basing the understanding on now is, you know, that
18 there is currently the two-year delay with respect to the
19 block.

20 **MR. GALLANT:** If we get anything different
21 from that between now and the filing we'll include it.

22 **MS. GREENOUGH:** Most certainly.

23 **MR. GALLANT:** And anything during the
24 application we will update.

25 **MS. GREENOUGH:** Yeah.

MS. GREENOUGH - REGULATORY PLANNING UPDATE

1 **MR. GALLANT:** But it will be, as you say,
2 the best and most recent information, the most accurate
3 information we have, absolutely. Yes.

4 **MS. GREENOUGH:** Yes. Okay. Anything
5 further?

6 Okay. Well, with that I wanted to thank you
7 all for joining us this afternoon. If you have any further
8 questions following the conference, don't hesitate to reach
9 out. Really appreciate your attendance today and wish you
10 a great afternoon.

11

12 --- Hearing concludes at time 3:40 p.m.

13

14

15

16

17

18

19

20

21

22

23

24

25

CERTIFICATE OF COURT TRANSCRIBERS

I, Karen Ware, Court Transcriber, hereby certify that I have transcribed the foregoing and it is a true and accurate transcript of the **NSPML TECHNICAL CONFERENCE** taken by way of electronic recording on Tuesday, November 8, 2016.



Certified by Philomena Drake

Court Transcriber (Reg. #2006-36)

Halifax, Nova Scotia

Wednesday, November 22, 2016

NOVA SCOTIA UTILITY AND REVIEW BOARD

**EVIDENCE OF
JOHN J. REED**

December 16, 2016

Table of Contents

I. Introduction.....1

II. Background3

III. Used and Useful Principle6

IV. Applying Used and Useful in the Interim Assessment13

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**1 ***I.*****INTRODUCTION**2 **Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**3 A1. My name is John J. Reed. My business address is 293 Boston Post Road West, Suite 500,
4 Marlborough, Massachusetts 01752.5 **Q2. BY WHOM AND IN WHAT CAPACITY ARE YOU EMPLOYED?**6 A2. I am Chairman and Chief Executive Officer of Concentric Energy Advisors, Inc.
7 (“Concentric”). Concentric is a management consulting firm specializing in financial and
8 economic services to the energy industry.9 **Q3. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND AND**
10 **EXPERIENCE.**11 A3. I have more than 40 years of experience in the North American energy industry. Prior to
12 my current position with Concentric, I have served in executive positions with various
13 consulting firms and as Chief Economist with Southern California Gas Company, North
14 America’s largest gas distribution utility. I have provided expert testimony on financial
15 and economic matters on more than 150 occasions before the National Energy Board
16 (“NEB”), the Federal Energy Regulatory Commission (“FERC”), numerous provincial
17 and state utility regulatory agencies, various state and federal courts, and before
18 arbitration panels in the United States and Canada. A copy of my résumé and a listing of
19 the testimony I have sponsored in the past ten years is included as Attachment A.20 **Q4. ON WHOSE BEHALF ARE YOU SPONSORING EVIDENCE IN THIS**
21 **PROCEEDING?**22 A4. I am sponsoring evidence on behalf of NSP Maritime Link Incorporated (“NSPML” or
23 the “Company”). NSPML is a subsidiary of Emera Newfoundland & Labrador Holdings,
24 Inc., and an affiliate of Nova Scotia Power Inc. (“NS Power”). My evidence here is the
25 fourth time that I have provided testimony before the Nova Scotia Utility and Review
26 Board (“NSUARB” or the “Board”).

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B****1 Q5. WHAT IS THE PURPOSE OF YOUR EVIDENCE?**

2 A5. NSPML has asked me to provide my opinion regarding the application of the used and
3 useful ratemaking principle in respect of the cost recovery by NSPML of its forecasted
4 costs, effective January 1, 2018, for the Maritime Link Project (“ML Project”)
5 (hereinafter the “Interim Assessment”), which is consistent with the assessment for the
6 ML Project accepted by the Board in NS Power’s Fuel Stability Plan Application (“Fuel
7 Stability Plan”).¹ In NS Power’s Fuel Stability Plan hearing, a witness for the Industrial
8 Group opined that “Recovering costs of Maritime Link (ML) for power in advance of the
9 actual supply is inconsistent with the “used and useful” principle.”² As this was raised in
10 the Fuel Stability Plan Application, NSPML has asked me to address it in my Direct
11 Evidence. In addition, NSPML has also asked me to address whether the recently
12 announced delay in the Nova Scotia Block power creates a concern for intergenerational
13 equity if the ML Project is included in rates ahead of the availability of the power it was
14 designed to deliver to NS Power.

15

¹ Decision, M07348, In the Matter of a hearing into Nova Scotia Power Incorporated’s 2017-2019 Fuel Stability Plan and Base Cost of Fuel Reset under the Fuel Adjustment Mechanism as required under the Electricity Plan Implementation Act, July 19, 2016.

² Direct Evidence of Mark Drazen on behalf of the Industrial Group, 2017-2019 Fuel Stability Plan in Nova Scotia Power Inc. (M07348), May 2, 2016.

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**1 **II. BACKGROUND**2 **Q6. PLEASE SUMMARIZE YOUR UNDERSTANDING OF THE LEGISLATIVE**
3 **FOUNDATION OF THE MARITIME LINK PROJECT (“ML PROJECT”).**4 A6. The Maritime Link Act (the “Act”), which became law in May, 2012, provides the
5 legislative foundation for the development of the ML Project. The Act describes
6 Maritime Link as:7 A new high voltage direct current transmission system and related
8 components, including grounding systems, and includes (i) direct current
9 converter stations in Newfoundland and Labrador, and in Cape Breton,
10 Nova Scotia, together with the subsea cables and high voltage direct
11 current transmission lines connecting the converter stations, (ii) an
12 alternating current transmission line connecting the converter station in
13 Newfoundland and Labrador with the Newfoundland Island
14 Interconnected System, and (iii) any additional transmission infrastructure
15 required in order to interconnect with the Newfoundland Island
16 Interconnected System and the Nova Scotia Transmission System”.³
17

18 In addition, the Act states that the ML Project means:

19 [t]he design, construction, operation and maintenance of the Maritime
20 Link, together with the related transactions involving the delivery of
21 energy, the provision of transmission services over the Maritime Link and
22 the enabling of transmission service through the Province, as set out in a
23 term sheet between Emera Incorporated and Nalcor Energy dated
24 November 18, 2010.⁴25 Finally, the Act provides the basis for how the ML Project is regulated by the Governor
26 in Council and the Board (“Maritime Link Cost Recovery Process Regulations”).⁵27 **Q7. PLEASE PROVIDE A BRIEF DESCRIPTION OF THE ML PROJECT.**28 A7. As noted in the Act, the ML Project involves the design, engineering, construction,
29 commissioning, operation, and maintenance of a new 500 MW transmission line. The
30 ML Project will allow NS Power to import hydro electricity from the Muskrat Falls
31 generating station in Labrador, which is being developed by Nalcor Energy (“Nalcor”). In

³ Maritime Link Act, Chapter 9 of the Acts of 2012, as amended by 2013, c.40, Section 2B.⁴ *Ibid*, Section 2C.⁵ *Ibid*, Section 6.

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 addition, the ML Project provides flexibility and diversification to NS Power through
2 long-term energy security and reliability. The Board approved the ML Project in 2013..⁶

Q8. WHEN IS THE ML PROJECT EXPECTED TO BE OPERATIONAL?

3 **Q8. WHEN IS THE ML PROJECT EXPECTED TO BE OPERATIONAL?**
4 A8. As noted in the Company's Interim Assessment, the ML Project remains on schedule for
5 commissioning and commencement of operations January 1, 2018.⁷ In the Interim
6 Assessment, NSPML is requesting to begin recovery from NS Power of the Board-
7 approved costs for the ML Project on the date of the ML Project's commencement of
8 service. Once the ML Project is commissioned and actual costs are known, NSPML will
9 file its final costs with the Board. At that time the Board will review and true-up any
10 differences in the Interim Assessment and the final costs of the ML Project.

Q9. DID NSPML ENTER INTO A FEDERAL LOAN GUARANTEE ("FLG") FOR THE ML PROJECT?

11 **Q9. DID NSPML ENTER INTO A FEDERAL LOAN GUARANTEE ("FLG") FOR**
12 **THE ML PROJECT?**
13 A9. Yes. As discussed in the Company's Interim Assessment, NSPML was granted a FLG
14 from the Government of Canada in 2014. Debt financing is provided through the FLG
15 with the ML Project assets being pledged as security for the loan.⁸ The FLG provides
16 benefits to ratepayers because it utilizes a very low 3.5 percent coupon interest rate
17 throughout construction as well as the operating period and permits the use of a relatively
18 high proportion of debt financing.⁹ Beginning in 2018, Maritime Link debt financing
19 costs (including interest during operations as noted above) must be funded through rate
20 revenues/recovery rather than using debt and equity investment as was the case during
21 construction. Therefore, NS Power must commence payments to NSPML when the
22 Maritime Link is commissioned and made available to NS Power, beginning on January
23 1, 2018.

⁶ Decision with conditions, 2013 NSUARB 154, MO5419, July 22, 2013 and final approval November 29, 2013.

⁷ In the Matter of The Public Utilities Act, R.S.N.S. 1989, c 380, as amended and the Maritime Link Act, S.N.S 2012 c.9 and the Maritime Link Cost Recovery Process Regulations, N.S. Reg. 189/2012, NSPML Interim Cost Assessment Application, December 13, 2016, p. 3.

⁸ *Ibid*, 10.

⁹ *Ibid*, 23. In the Matter of the Maritime Link Act, S.N.S. 2012 c.9 and the Maritime Link Cost Recovery Process Regulations, N.S. Reg. 189/2012, Maritime Link Project Application, January 28, 2013, pgs. 81-82.

DIRECT EVIDENCE OF JOHN J. REED

APPENDIX B

1 **Q10. WHAT COSTS IS NSPML REQUESTING TO RECOVER IN THE INTERIM**
2 **ASSESSMENT?**

3 A10. As discussed more fully in the Interim Assessment, the costs that NSPML are requesting
4 to be recovered include, 1) depreciation; 2) operating and maintenance; 3) debt financing
5 costs; and 4) equity financing costs.¹⁰

6

¹⁰ *Ibid*, 18.

1 ***III. USED AND USEFUL PRINCIPLE***

2 **Q11. PLEASE GENERALLY EXPLAIN THE REGULATORY RATEMAKING**
 3 **PRINCIPLE OF USED AND USEFUL.**

4 A11. The used and useful principle is a ratemaking concept that relates to one element of
 5 establishing the revenue requirement of a public utility, i.e., the valuation of the rate base
 6 upon which a return will be granted. In essence, it provides that the rate base should only
 7 include those assets that are used to provide the regulated service, and that are useful (i.e.,
 8 beneficial) in the provision of that service. While simple in concept, this principle, in
 9 application, has been one of the most disputed and contentious issues in rate proceedings
 10 over its 150 years of application in North America.

11 The Nova Scotia Public Utilities Act (“Public Utilities Act”) uses the term in the
 12 conventional manner. It provides that the Board may establish the rate base of a utility by
 13 determining the “value of the whole or any portion of the property and assets of any
 14 public utility used and useful in furnishing, rendering or supplying a particular service to
 15 or for the public...”¹¹ All of the references in the Public Utilities Act to used and useful
 16 or used or useful refer to a utility’s property and assets.

17 **Q12. IS THE USED AND USEFUL PRINCIPLE FURTHER DEFINED IN THE**
 18 **PUBLIC UTILITIES ACT?**

19 A12. No, it is not. The term used and useful is used a number of times throughout the Public
 20 Utilities Act, but it does not provide any definition of the term, or even require its
 21 application. In fact, the Public Utilities Act provides the NSUARB with broad discretion
 22 to set rates for utilities services.¹² The Public Utilities Act expressly provides for a return
 23 on rate base, “as fixed and determined by the Board”,¹³ and provides wide latitude to the
 24 Board for determination of the value of utility property.¹⁴ Nothing in the Public Utilities

¹¹ Nova Scotia Public Utilities Act, section 30(1).

¹² *Ibid*, section 44.

¹³ *Ibid*, Section 45.

¹⁴ *Ibid*, Section 30.

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 Act dictates that the used and useful standard be applied, and no provision in it suggests
2 its relevance to anything other than the utility's property.

3 **Q13. HAS THE BOARD APPLIED THE USED AND USEFUL STANDARD IN PAST**
4 **DECISIONS?**

5 A13. Yes. For instance, in the case of the NS Power Port Tupper Marine Terminal ("PTMT")
6 decision in 2008, the NSUARB used its discretion in determining which PTMT costs, if
7 any, were to be put into rate base.¹⁵ NS Power requested the inclusion of the full value of
8 the PTMT. The NSUARB expressly balanced its view of "fundamental regulatory rate
9 making principles" and "public interest considerations"¹⁶ in allowing the net book value
10 of the terminal into NS Power's rates for recovery. Despite concluding that the terminal
11 had not been fully utilized, the Board nonetheless recognized the value of i) a second coal
12 terminal in proximity to NS Power's Point Tupper and Trenton generating plants; and ii)
13 a "potential benefit" to ratepayers of the ability to seek out lower coal prices in the global
14 marketplace and the consequent motivation of existing suppliers to compete more
15 aggressively on price. These factors allowed the Board to conclude that the marine
16 terminal was used and useful, and thus appropriately included in regulated rate base.¹⁷ I
17 recognize that the Board is not mandated to apply the used and useful principle, and that
18 when it has applied it, it has done so flexibly. Therefore, I also considered how other
19 jurisdictions have approached this issue, especially for large-scale, government-supported
20 infrastructure projects.

21 **Q14. IS THERE CANADIAN FEDERAL COURT PRECEDENT REGARDING THE**
22 **USED AND USEFUL STANDARD?**

23 A14. Yes. In a Federal Court decision concerning the rulings of the British Columbia Power
24 Authority on the rates for Westcoast Transmission Co., the Federal Court summarized
25 what it believed is the applicable Canadian legal principle:

¹⁵ NSUARB-NSPI-P-128.07 2008 NSUARB 74.

¹⁶ *Ibid*, paragraph 38.

¹⁷ *Ibid*, paragraphs 42 through 44.

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 The question of what items should be included in a rate base is one for the
 2 judgement of the Board. In reaching that judgement, the Board is without
 3 doubt entitled to use as a guide, if it sees fit, the test of the present use or
 4 usefulness of the items sought to be included in providing utility service.
 5 But there is no rule of law that such a test be used or followed or that it is
 6 the only principle that can be applied. Nor does it follow that the use of
 7 other principles in determining a rate base will result in tolls that are not
 8 just and reasonable.¹⁸

9 In this case, the Federal Court concluded that the Board had discretion in determining
 10 what should be included in rate base.

11 **Q15. IS THERE SIMILAR PRECEDENT FOR THE USED AND USEFUL STANDARD**
 12 **IN THE UNITED STATES?**

13 A15. Yes, there are many cases where the used and useful standard has been considered, but
 14 one in particular seems highly relevant to the Board's consideration of NSPML's Interim
 15 Assessment. Pursuant to legislation enacted in 2005 ("SB 20"), the Public Utility
 16 Commission of Texas ("PUCT") identified five areas in Texas where large wind
 17 generators committed to construct wind farms, and designated those areas as Competitive
 18 Renewable Energy Zones ("CREZ"). The PUCT then identified more than 100
 19 transmission projects needed to support the CREZ, and designated 13 transmission
 20 service providers to implement those transmission projects at an estimated cost of more
 21 than \$5 billion. CREZ projects included the construction of thousands of miles of
 22 transmission lines and dozens of substations, switches, and terminals to help meet the
 23 state's goals for integrating renewable energy resources by expanding the electric
 24 infrastructure. Many of the owners of the CREZ lines are affiliates of regulated electric
 25 companies and their transmission rates and services are regulated by the PUCT. The
 26 stand-alone companies that formed to develop the CREZ transmission assets are similar
 27 to NSPML in their structure. To facilitate the transmission development in Texas, the
 28 legislature provided for the recovery of costs at the time the certificate of public
 29 convenience and necessity was issued.

30 Texas's legislation states that:

¹⁸ *British Columbia Hydro & Power Authority v. Westcoast Transmission Co.*, [1981] F.C. 646, paragraph 55.

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 If the commission issues a certificate of convenience and necessity or,
 2 acting under Section 39.203(e), orders an electric utility or a transmission
 3 and distribution utility to construct or enlarge transmission or
 4 transmission-related facilities to facilitate meeting the goal for generating
 5 capacity from renewable energy technologies under Section 39.904(a), the
 6 commission shall find that the facilities are used and useful to the utility in
 7 providing service for purposes of this section and are prudent and
 8 includable in the rate base, regardless of the extent of the utility's actual
 9 use of the facilities.¹⁹

10 These provisions are a good example of how one state and its utility regulators have
 11 harmonized the state's desire to develop large-scale renewable energy infrastructure (both
 12 generation and transmission) with the ratemaking treatment of those projects.

13 **Q16. ARE THERE OTHER EXAMPLES WHERE GOVERNMENTS HAVE**
 14 **SUPPORTED THE DEVELOPMENT OF LARGE-SCALE UTILITY**
 15 **INFRASTRUCTURE, AND NEEDED TO HARMONIZE THE RATEMAKING**
 16 **TREATMENT OF THESE ASSETS WITH THEIR OBJECTIVES OF HAVING**
 17 **THE ASSETS DEVELOPED IN A TIMELY AND COST-EFFECTIVE MANNER?**

18 A16. Yes, there are many such examples. Three of the most well-known examples are
 19 currently in operation in Florida, Georgia, and South Carolina, where state legislatures
 20 sought to encourage the development of multi-billion dollar clean energy generation
 21 projects (such as nuclear and coal gasification), but recognized that a strict application of
 22 used and useful ratemaking principles could thwart the timely and cost-effective
 23 development of these assets. In these states, the support of the state governments has led
 24 to legislation directing the utility regulators to implement ratemaking mechanisms which
 25 do not apply a strict used and useful standard to the projects, which provide for a greater
 26 level of certainty in cost recovery, even if it is many years before an asset becomes
 27 commercially operable, and which helps keep financing costs for the projects at a
 28 reasonable level. In Georgia, this has supported Georgia Power securing a federal loan
 29 guaranty for its \$16 billion new nuclear project. In South Carolina and Florida, the
 30 ratemaking treatment of these assets has also played a major role in keeping debt costs
 31 for the utilities undertaking multi-billion dollar clean energy projects at very reasonable

¹⁹ Act of the Legislature of the State of Texas, SB20. Section 36.053 Utilities Code, subsection (d).

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 levels. As shown by these examples, it is important for rate regulation of large
 2 government-supported projects to reflect the risks and public interest benefits that these
 3 projects present.

4 **Q17. ARE THERE OTHER CASES IN WHICH REGULATORS HAVE INCLUDED**
 5 **COSTS IN RATE BASE WHERE AN ASSET HAS BECOME OPERATIONAL,**
 6 **EVEN IF OTHER RELATED FACILITIES ARE NOT FULLY OPERATIONAL?**
 7 **IF SO, WHAT ARE THOSE CASES, AND WHAT IS THEIR RELEVANCE TO**
 8 **THIS CASE?**

9 A17. Examples of such cases can be found in Ontario Energy Board (“OEB”) cases involving
 10 West Huron Energy and Toronto Hydro.²⁰ In these cases, portions of a “feeder
 11 enhancement project” were included in rate base before the balance of the project was
 12 completed, and civil work for a substation was included in rate base before the related
 13 transformer station was completed or energized.

14 In addition, the OEB has largely mirrored the policies of the U.S. FERC in establishing
 15 policies for the recovery of investments in transmission projects related to renewable
 16 energy development, including accelerated recovery prior to the assets fully entering
 17 service. These policies consider the need for and public interest benefits of the projects,
 18 the absolute and relative (to the sponsor’s overall size) cost of the projects, and the
 19 benefits (in terms of financing costs) of “early” or “alternative” cost recovery
 20 provisions.²¹

21 The FERC has also established non-standard rate base principles for some transmission
 22 investments, and that public interest issues are important to consider:

23 We will accept AEP’s proposal to include 100 percent CWIP in rate base,
 24 conditioned upon AEP fulfilling the Commission’s requirements for
 25 CWIP inclusion for these transmission facilities under the Commission’s

²⁰ Ontario Energy Board EB-2008-0248, West Coast Huron Energy Inc. April 3, 2009 *Supplemental Reply Submissions*, paragraph 9. Decision and Order, EB-2008-0248, January, 2009 at 17-18.

²¹ Ontario Energy Board EB-2009-0152; Report of the Board, *The Regulatory Treatment of Infrastructure Investment in Connection with the Rate Regulated Activities of Distributors and Transmitters in Ontario*, January 15, 2010, page 21.

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 regulations that are consistent with the Final Rule, in AEP Transco’s
2 future section 205 filing.

3 We are acting pursuant to our existing statutory authority under section
4 205 and the obligation given to the Commission under section 219 to
5 establish incentive-based rate treatments for transmission infrastructure
6 investment. In addition, we find that permitting this incentive will further
7 the goals of section 219 by providing up-front regulatory certainty, rate
8 stability and improving the cash flow of applicants, thereby, easing the
9 pressures on their finances caused by transmission development programs.
10 We recognize that our decision here goes beyond the status quo of
11 allowing inclusion of 50 percent of prudently-incurred CWIP in the rate
12 base. We do so to encourage or create an incentive to develop
13 transmission infrastructure, in furtherance of our Congressional mandate.
14 Moreover, this finding is consistent with our determination in the Final
15 Rule, allowing public utilities the option to include 100 percent of
16 prudently incurred transmission-related CWIP in rate base. We find that
17 the parties’ argument that CWIP treatment violates the used and useful
18 doctrine is not supported by Commission and court precedent. As we
19 found in Order No. 298, there are “widely-recognized exceptions and
20 departures from this [used and useful] rule, particularly when there are
21 countervailing public interest considerations.”²²

22 Similarly, the Massachusetts Department of Public Utilities has established non-standard
23 cost recovery principles for a class of new investment:

24 Typically, the Department applies a standard of “used and useful” to
25 determine whether a plant investment is appropriately included in rate
26 base, and evaluates whether the plant is in service and is providing net
27 economic benefits to ratepayers. Western Massachusetts Electric
28 Company, D.P.U. 85-270, at 60-107 (1986).

29 ***

30 However, for investments associated with advanced metering
31 functionality, the investment must still be made within the five-year
32 period, but need not be used and useful by the year for which cost
33 recovery is sought. We believe that this distinction is warranted because
34 the deployment of advanced metering functionality could require
35 significant investments that, for a variety of reasons, might not satisfy a
36 strict application of the used and useful standard for some time after the
37 investment is made. If a company can demonstrate that this is the case, the

²² 116 FERC ¶ 61,059, Order Conditionally Granting Petition for Declaratory Order and Denying Motion to Defer Consideration, July 201, 2006 at 20.

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 Department will permit recovery via the targeted cost recovery mechanism
2 if the investment qualifies as construction work in progress (“CWIP”).²³

3 **Q18. WHAT IS YOUR CONCLUSION REGARDING HOW THE USED AND USEFUL**
4 **STANDARD IS APPLIED IN UTILITY RATEMAKING?**

5 A18. The 150-year history of this principle has provided extensive support for the view that it
6 should be applied with a high degree of flexibility and discretion. This is especially true
7 where governments have provided express support for the undertaking of large energy
8 infrastructure projects, and sought to “de-risk” that development by harmonizing the
9 ratemaking treatment of these projects with the government’s desire to see them
10 developed in a timely and cost-effective manner. This harmonization has often meant
11 that the regulator has taken a very flexible approach to applying the used and useful
12 principle, including electing not to apply it at all, where the timely recovery of project
13 costs is an important premise for contractual commitments, financing terms and the
14 willingness of project sponsors to undertake the development of the project.

15

²³ DPU 12-76-B, Investigation by the Department of Public Utilities on its own Motion into Modernization of the Electric Grid, June 12, 2014, at 24.

DIRECT EVIDENCE OF JOHN J. REED

APPENDIX B

1 ***IV. APPLYING USED AND USEFUL IN THE INTERIM ASSESSMENT***2 **Q19. WILL THE ML PROJECT BE USED AND USEFUL AS OF JANUARY 1, 2018?**

3 A19. Yes, based on the current schedule it will be in service and available to provide value and
4 benefits to NS Power's customers on January 1, 2018. At that time, the ML Project will
5 provide the opportunity to deliver economic market-priced energy, and will provide
6 energy security, reliability, and flexibility benefits to NS Power. At a later date, when the
7 Muskrat Falls project is complete, the ML Project will then provide transmission access
8 to that contractually guaranteed supply of dispatchable reliable, clean energy.
9 Nonetheless, as of January 1, 2018, the ML Project will be used and useful.

10 **Q20. ARE YOU SAYING THAT THE ML PROJECT DOES NOT REQUIRE THE**
11 **CONTEMPORANEOUS COMPLETION OF THE MUSKRAT FALLS PROJECT,**
12 **AND THE AVAILABILITY OF THE NOVA SCOTIA BLOCK, IN ORDER FOR**
13 **THE ML PROJECT TO BE INCLUDED IN RATES?**

14 A20. That is correct. As noted in the NSP Reply and Refresh evidence, the Nalcor
15 Commercial Agreement anticipated the likelihood that the ML Project would be
16 commissioned and available for energy transactions before the Muskrat Falls plant was
17 completed (at least before the third generating unit) and before the NS Block
18 commences.²⁴ While there is still every reason to believe that these benefits will be
19 achieved, the sequencing of each segment of this undertaking does not suggest that the
20 ML Project should be accorded anything other than prompt and full inclusion in rates
21 when it achieves commercial operation. That is when the project will meet the
22 established standard for the commencement of depreciation, the accrual of AFUDC will
23 be terminated, and NSPML will look to rates based on the Interim Assessment to provide
24 revenues covering O&M costs, debt costs and equity costs. Given the stand-alone
25 development of the ML Project, without the approval of the Interim Assessment there

²⁴ In the Matter of the Public Utilities Act, R.S.N.S. 1989, c380, as amended and in the Matter of the Application to approve the 2017-2019 Fuel Stability Plan and Base Cost of Fuel Reset as required under the Electricity Plan Implementation (2015) Act, 2017-2019 Fuel Stability Plan, NS Power Reply Evidence and Fuel Refresh, May 27, 2016 p. 16.

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 would be no revenues to cover these costs, nor any mechanism whereby these costs could
2 be deferred or accumulated for recovery.

3 **Q21. IF THE BOARD CONCLUDES THAT SOME CONSIDERATION OF THE USED**
4 **AND USEFUL PRINCIPLE IS APPROPRIATE IN EVALUATING NSPML'S**
5 **INTERIM ASSESSMENT FOR THE ML PROJECT AT THIS TIME, WHAT**
6 **FACTORS DO YOU BELIEVE THE BOARD SHOULD BRING INTO THIS**
7 **CONSIDERATION?**

8 A21. If the Board reaches such a conclusion, I believe that its consideration should include the
9 following:

10 A. As in other government-supported, large-scale energy infrastructure projects, the
11 ratemaking treatment of the project should be harmonized with the government's
12 desire to see the project developed in a timely, efficient, and cost-effective
13 manner. For the ML Project, that means recognizing the terms of the FLG, and
14 the unique features of the multi-party commercial agreements that govern the
15 development and operation of the combined set of projects, including NS Power's
16 payment obligations thereunder.

17 B. As noted above, for the last five decades, regulators across North America have
18 seen the benefit of applying the used and useful principle in a very flexible and
19 case-specific manner, and even rejecting it entirely when circumstances, including
20 public interest considerations, warrant it.

21 C. If the Board concludes that the used and useful principle should be taken into
22 consideration, the concept of used and useful should apply to the transmission
23 project itself, not the broader undertaking of the development of Muskrat Falls or
24 other upstream or downstream activities over which NSPML has no control. If
25 that principle is applied to the transmission project as it is reasonably expected to

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 stand in 2018, it is reasonable to conclude that the ML Project will be used and
2 useful at that time.²⁵

3 **Q22. WHAT IS THE RELEVANCE OF THE CONCEPT OF INTERGENERATIONAL**
4 **EQUITY TO THE ISSUES BEFORE THE BOARD IN THIS CASE?**

5 A22. This issue is often raised in ratemaking proceedings related to large-scale, long-lived
6 construction programs. The issue the Board may wish to consider is whether a departure
7 from standard ratemaking procedures is warranted to promote greater intergenerational
8 equity.

9 **Q23. WHAT IS INTERGENERATIONAL EQUITY, AND HOW DOES IT RELATE**
10 **TO THE ESTABLISHMENT OF JUST AND REASONABLE RATES?**

11 A23. The National Energy Board has defined intergenerational equity as “A broad principle
12 that users in any period are generally required only to pay for the costs of providing them
13 with services in that period.”²⁶ In general, where projects have been determined to
14 produce benefits for customers over the life of the project, but where the benefits may
15 follow a profile that is different than the cost profile for the project, some degree of
16 intergenerational inequity can arise. If regulators determine that the degree of
17 intergenerational inequity is too great, they often look for mechanisms that can alter the
18 cost recovery profile to better match the project’s benefits. These mechanisms include
19 rate phase-in plans or levelization methodologies, shaped depreciation expenses, and the
20 use of deferral accounts. I note in this case that the government of Nova Scotia has
21 established a form of rate phase-in by providing for the inclusion of the ML Project costs
22 in the NS Power Fuel Stability Plan, which the Board has approved by allowing NS
23 Power to recover two years of costs over a three-year period.

²⁵ See Section 2.2.2 of the NS Power Reply Evidence and Fuel Refresh, May 27, 2016, for a discussion of the benefits to customers from the Project.

²⁶ NEB RH-2-2008 Reasons for Decision, p. 8.

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 **Q24. HAS ANY PARTY RAISED CONCERNS ABOUT THE INTERGENERATIONAL**
 2 **EQUITY OF APPLYING STANDARD RATEMAKING PROCEDURES TO THE**
 3 **ML PROJECT IN ANY OF THE PAST CASES BEFORE THE BOARD ON THE**
 4 **ML PROJECT?**

5 A24. I am not aware of anyone raising this issue in these terms. However, in NS Power's
 6 recent base cost of fuel proceeding, Liberty Consulting raised a similar concern regarding
 7 the effects of a delay in the availability of the Nova Scotia Block, and whether the prompt
 8 inclusion of the Interim Assessment in NS Power's rates would be appropriate:

9 NS Power has assumed that it will start paying for the Maritime Link and
 10 its associated energy on January 1, 2018, regardless of the amount of
 11 energy actually provided at that time. NS Power would have to provide
 12 replacement energy for deliveries not made due to the Muskrat Falls delay.
 13 In effect, therefore, NS Power and its customers would pay twice for that
 14 energy until deliveries over the Link commence.²⁷

15 As I will discuss later, I disagree with Liberty's characterization of these circumstances,
 16 but, the concern it raises is analogous to the issue of intergenerational equity.

17 **Q25. HOW IS INTERGENERATIONAL EQUITY MEASURED?**

18 A25. It is examined by comparing the project's cost profile to the project's customer benefits,
 19 on a year-by-year basis. In many cases, customer benefits may be difficult to measure,
 20 but they are typically thought of as the value derived from the project, either in terms of
 21 market value, or avoided costs, as well as benefits derived from improvements in
 22 environmental impacts, reliability, and flexibility.

23 In the utility industry, large capital programs almost always involve some degree of
 24 intergenerational inequity. This is because the optimum size for constructing an asset
 25 almost never matches the current need, and because the typical formula for utility cost
 26 recovery involves a declining rate base (due to straight-line depreciation), while a
 27 project's benefits typically increase over time (due to general price rises in the economy).
 28 This usually results in projects having an "economic crossover" point in time, before
 29 which costs exceed benefits, and after which benefits exceed costs. This situation is often

²⁷ NS Power 2017-2019 Fuel Stability Plan, Liberty Consulting Group. Intervenor Evidence, May 2, 2016, page 24.

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 described as the project having its costs “front-end loaded,” and its benefits “back-end
2 loaded.”

3 **Q26. DID NSPML PROVIDE EVIDENCE IN THE ORIGINAL FILING WHICH**
4 **DEMONSTRATED THE INEQUITY ACROSS THE LIFE OF THE PROJECT**
5 **AT THE TIME THE BOARD APPROVED THE ML?**

6 A26. Yes. As noted in the Board’s Decision approving the ML Project, the price of the Nova
7 Scotia Block was expected to be approximately \$125/MWh in 2017, to peak in about
8 2026, and to have a levelized price of approximately \$150/MWh over its 35-year life. In
9 contrast, the Board noted that “Market-priced Energy”, absent the renewable energy
10 standard, would have a price of about \$50/MWh in 2017, increasing to about \$90/MWh
11 in 35 years.²⁸ The record in that case also indicated that NS Power did not have a near-
12 term need for additional capacity²⁹, and that the timing of the ML Project was driven by
13 the need to meet renewable energy standards in Nova Scotia by 2020.³⁰

14 The benefits of the ML Project, however, cannot be appropriately measured against the
15 Market-priced Energy only scenario discussed in that case, since the Market-priced
16 Energy did not represent a long-term resource that would meet the renewable energy
17 standards.³¹ Further, the benefits of the ML Project are not limited to providing the Nova
18 Scotia Block power. They include the ability to deliver the Nova Scotia Block power as
19 well as an optimal component of Market-priced Energy and still meet the needs of the
20 renewable energy standards. The attractiveness of the ML Project was evaluated against
21 alternative resource portfolios that also had costs above the Market-priced Energy.

²⁸ NSUARB Decision, 2013 NSUARB 154, M05419, p. 14.

²⁹ In the Matter of the Maritime Link Act, S.N.S. 2012 c.9 and the Maritime Link Cost Recovery Process Regulations, N.S. Reg. 189/2012, Maritime Link Project Application, January 28, 2013, Appendix 6.03, p.4 and 6.

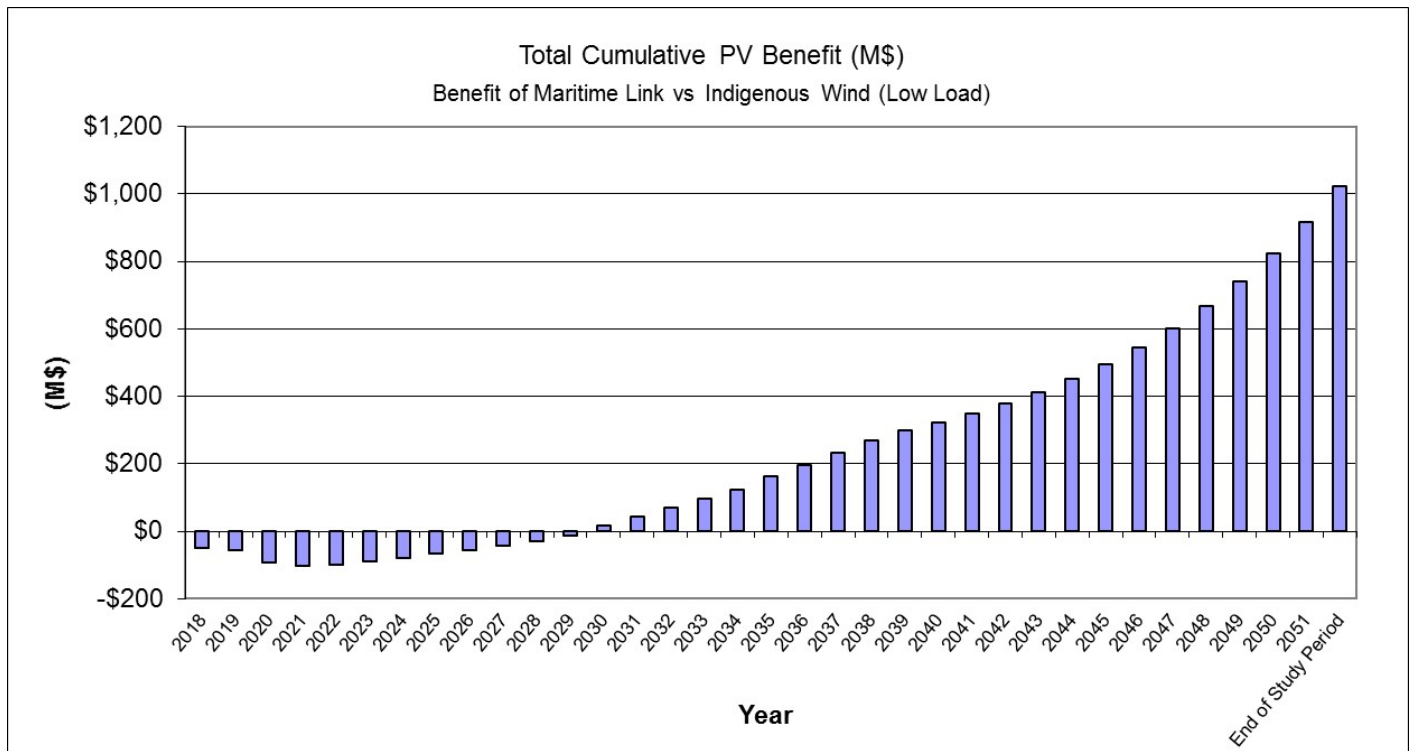
³⁰ In the Matter of the Maritime Link Act, S.N.S. 2012 c.9 and the Maritime Link Cost Recovery Process Regulations, N.S. Reg. 189/2012, Maritime Link Project Application, January 28, 2013, p. 14 and 103.

³¹ NSUARB Decision, 2013 NSUARB 154, M05419, p. 44. “Based on the Board’s review, the Other Import option suffers from one major shortfall. In the end, this option lacks a reasonably foreseeable source of imported energy.”

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 Those economics were also developed in the ML Project approval case, and were
2 presented in NSPML’s response to Synapse IR-11, in Attachment 1 at page 4 of 8. The
3 chart presented in that response is reproduced here as Figure 1, extended to include the
4 project cumulative PV benefits out to 2052. As shown in Figure 1, I extrapolated the
5 original Operating Costs and Capital Costs out for the 35-year life of the project, based
6 on achieving a cumulative PV benefit as determined by the Strategist model for the entire
7 study period. To extend Figure 1, I made the simplifying assumption that the “end
8 effects” value determined by the Strategist model had an end date of 2052, which is the
9 last year of the Nova Scotia Block under its original schedule.³² Figure 1 shows the
10 typical front-end loading profile, when comparing the ML Project to the avoided cost of
11 the Indigenous Wind portfolio, in the Low Load case. In other words, the evidence
12 presented at the time provided a perspective of the variation in benefits across the
13 lifespan of the project which the Board approved. The ML Project, like other major
14 energy infrastructure projects, contains an inherent degree of intergenerational inequity
15 for customers in the early years of the project. The data underlying Figure 1 are presented
16 in Exhibit JJR-1, attached to this testimony.

³² The total NPV cost and cumulative PV benefit matches what was noted in the Decision for the 2013 Application. Maritime Link provided a total cumulative PV benefit of \$1.02 billion over the Indigenous Wind portfolio alternative. In the Matter of the Maritime Link Act, S.N.S. 2012 c.9 and the Maritime Link Cost Recovery Process Regulations, N.S. Reg. 189/2012, Maritime Link Project Application, January 28, 2013, p. 135.

1 **Figure 1: Total Cumulative PV Benefits (M\$)**

2

3

4 **Q27. HOW DOES A TWO-YEAR DELAY IN THE AVAILABILITY OF THE NOVA**
 5 **SCOTIA BLOCK POWER AFFECT THE ML PROJECT'S DEGREE OF**
 6 **FRONT-END LOADING OF COSTS, ASSUMING THAT THE NSPML INTERIM**
 7 **ASSESSMENT IS IMPLEMENTED ON JANUARY 1, 2018?**

8 A27. I would not expect a fundamental shift in the degree of front-end loading of costs
 9 resulting from a two-year delay in the Nova Scotia Block power, when viewed over the
 10 35-year life of the ML Project. The delay does not materially change the total benefit of
 11 the ML Project. It has the effect of removing the Nova Scotia Block power from the
 12 2018 to 2019 period, which is when NS Power does not expect to need new resources and
 13 has less expensive sources of power available to it, and adds this power as a resource in
 14 the 2053 to 2054 timeframe, when NS Power expects to need this power and does not
 15 anticipate having less expensive resources available. Taken as a whole, this delay should
 16 not adversely affect NS Power's customers over the life of the project.

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 Since NS Power expects to be using the ML Project for the benefit of Nova Scotia
 2 customers in its first two years of operation, the deferral of the benefits of the Nova
 3 Scotia Block will be offset by the value of economic transactions that are achieved by NS
 4 Power.

5 **Q28. APART FROM THE INCREASE IN FRONT-END LOADING OF COSTS IN**
 6 **THE ML PROJECT, DO YOU DISAGREE WITH LIBERTY’S ASSERTION**
 7 **THAT THE APPLICATION OF STANDARD RATEMAKING PROCEDURES IN**
 8 **THESE CIRCUMSTANCES WOULD LEAD TO NS POWER’S CUSTOMERS**
 9 **“PAYING TWICE” FOR ENERGY?**

10 A28. I do not believe that this view is factually correct or that it supports a departure from
 11 standard ratemaking procedures. First, the ML Project’s costs should be included in rates
 12 when that project achieves commercial operation. As the Board has recognized, the *quid*
 13 *pro quo* for NSPML building the ML Project, and making it available to transmit
 14 Nalcor’s generation, is that NS Power will receive the Nova Scotia Block when that
 15 generation achieves commercial operation.

16 The fundamental bargain that was established by what has been called the “20 for 20”
 17 agreement has not changed. NS Power’s customers were not “paying twice” under the
 18 original project schedule, and won’t be under the revised project schedule. The benefits
 19 will be deferred and elongated, but the benefits, and the ML Project costs, should be at
 20 least as favorable as they ever were.

21 The two-year delay in the commencement of the benefits provided by the Nova Scotia
 22 Block will be accompanied by a two-year extension in the duration of those benefits. In
 23 essence, in 2053 and 2054 NS Power’s customers will be getting substantial volumes of
 24 power at little additional direct cost. The effect of the two-year extension will be to
 25 provide for the delivery of those two years of power at a time when there is expected to
 26 be a clear need for that power, and the value of that power will be significant.

27 The simplest way to visualize the equity of the “20 for 20” agreement is to conceive of it
 28 as a lump sum investment being made by NSPML for the collective value of 170 MW of

DIRECT EVIDENCE OF JOHN J. REED**APPENDIX B**

1 dispatchable renewable energy being delivered over a 35-year interval. The beginning
2 date and end date of that interval may be changing, but that does not in any way create a
3 circumstance of “paying twice” for the power, or harming NS Power’s customers, when
4 the economics are evaluated over the full life of the ML Project. When you also
5 recognize that there are relatively lower-cost means of replacing the deferred power in
6 the short-term, but not in the long-term when the deferred power will ultimately be
7 delivered, the overall effects of such a deferral can be understood.

8 **Q29. DO YOU BELIEVE THAT THE USE OF ANY LEVELIZATION OR COST**
9 **DEFERRAL MECHANISMS ARE WARRANTED FOR NSPML’S INTERIM**
10 **ASSESSMENT FOR THE ML PROJECT?**

11 A29. No, I do not. It appears from the Board’s approval of the ML Project that it was prepared
12 to accept the profile of the ML Project’s cost recovery and benefits as expected in 2013.
13 Also, the Board approved the smoothing of NS Power’s ML Project Assessment costs, as
14 included in NS Power’s Fuel Stability Plan. That was proposed as a form of rate
15 stabilization, and implemented through the base cost of fuel filing. For the reasons
16 outlined above, a two-year deferral of the delivery of the Nova Scotia Block power can
17 reasonably be expected to move these deliveries to a period when they are more needed
18 and more valuable. While this does cause a modest increase in the level of front-end cost
19 loading for the ML Project, it is not that large, and is not harmful when the ML Project is
20 viewed over its entire life.

21 My concern regarding any use of levelization or cost deferral mechanisms for NSPML’s
22 Interim Assessment also arises from the potentially significant financial effects it could
23 have on NSPML. Even if these mechanisms were applied in a manner that achieved the
24 same present value of revenues, a significant amount of cost “sculpting” could cause cash
25 flow shortfalls in the early years of the ML Project that could be detrimental to NSPML’s
26 ability to meet the repayment terms for the FLG, and to preserve the 70/30 debt/equity
27 ratio that currently underlies the ML Project. Since the FLG’s terms have already been
28 established, any shortfall in revenues would have to be made up by using more expensive
29 sources of capital to fund under collections or deferrals. That result could be harmful to

DIRECT EVIDENCE OF JOHN J. REED

APPENDIX B

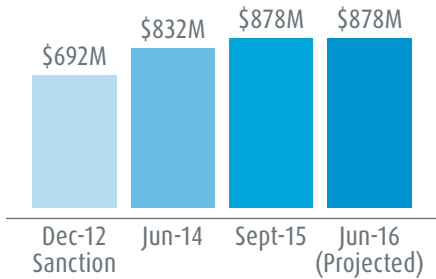
1 NS Power’s ratepayers, or to investors, or both. The Board should avoid changes to the
2 payment terms, which would undercut the ML Project’s long-term economics by
3 imposing an alternative form of short-term ratemaking in an attempt to curb the moderate
4 increase in front-end loading that arises from a two-year delay in the availability of the
5 Nova Scotia Block.

6 **Q30. DOES THIS CONCLUDE YOUR EVIDENCE?**

7 A30. Yes, it does.

MUSKRAT FALLS PROJECT UPDATE

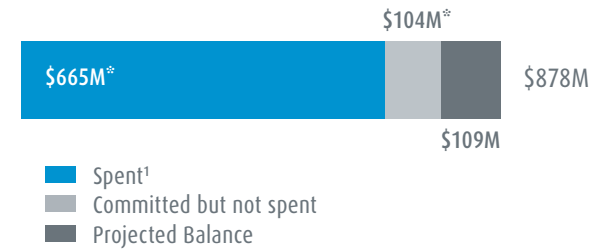
LABRADOR TRANSMISSION ASSETS (LTA)



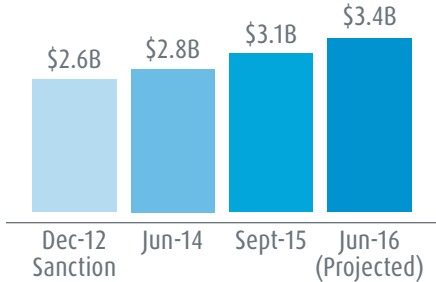
- Clearing and access 100% complete
- 100% of towers installed and wire stringing completed

PROJECTED IN-SERVICE DATE

Sanction: Q2 2017 June 2016: Q2 2018



LABRADOR-ISLAND LINK (LIL)



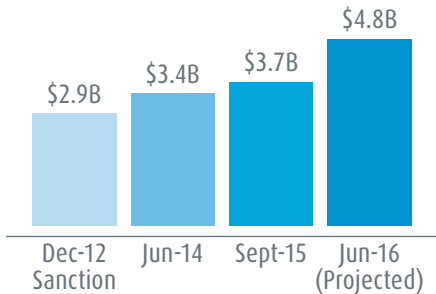
- Clearing and access 75% complete
- Switchyards and synchronous condensers 36% complete
- Strait of Belle Isle (SOBI) completion by end of 2016

PROJECTED IN-SERVICE DATE

Sanction: Q2 2017 June 2016: Q2 2018



MUSKRAT FALLS GENERATION (MF)



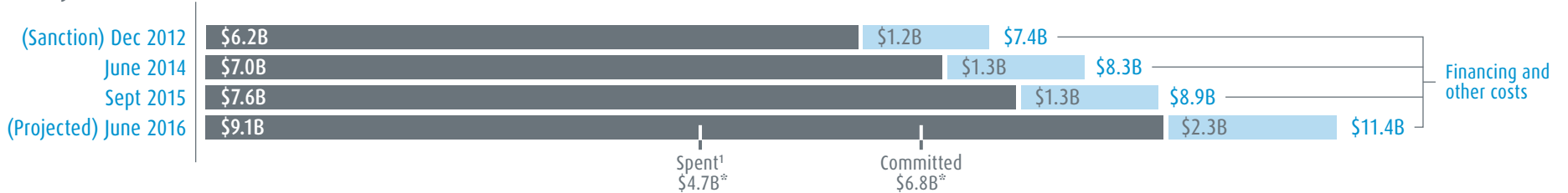
- Primary spillway structure complete
- North Spur 44% complete
- River diversion scheduled in summer 2016

PROJECTED IN-SERVICE DATE

First Power Sanction: Q4 2017 June 2016: Q3 2019
 Full Power Sanction: Q2 2018 June 2016: Q2 2020



PROJECT COSTS



¹Spent reflects incurred cost for the period *As of May 2016