

**Third Quarterly Monitoring Report on the
Integration of Power Supply Facilities to the
Island Interconnected System**

Presented to:

**The Board of Commissioners of Public Utilities
Newfoundland and Labrador**

Presented by:

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September 10, 2018

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1. Introduction

a. Interim and Longer-Term Transmission System Readiness

In preparation for achieving a smooth and effective transition from construction to operations and to ensure long-term operational effectiveness, management created a structured program, Transition to Operations (TTO), tasked with integrating the new facilities into the IIS. The (TTO) is supported by a large team of internal and external personnel possessing a wide range of experiences and backgrounds.

Over the past nine months, Liberty has been monitoring TTO progress in preparation for the turnover of assets to operations of the Labrador-Island Link (LIL). We have not addressed construction of the Muskrat Falls phase of the Lower Churchill Project (LCP). We have been addressing only those efforts planned and executed to become fully prepared to operate the facilities that connect the LCP to the Island grid, after supply resources become available.

We have also examined readiness to operate the network facilities that will, in the interim before Muskrat Falls completion, permit the import of power from the LIL and the Maritime Link (ML). A long-standing concern with and focus on the sufficiency of supply resources to serve the Island Interconnected System (IIS) led to a decision to place a special focus on readiness of those links to provide import sources of supply prior to the availability of electricity production from Muskrat Falls. The LIL will make recall power available from the LIL connection to Labrador and the ML will make available supply sources originating in or passing through Nova Scotia.

We therefore address readiness in both the interim (pre-Muskrat Falls) and longer-term (post Muskrat Falls) periods. Hydro has in the past addressed the need for support provided from LIL connections to an operating IIS and an operating ML. The focus placed on completing and getting the LIL into operation led to the establishment of a 1st power¹ date for the link of June 30, 2018. An end of second quarter 1st power date would make the LIL available to support supply needs on the IIS this coming winter. However it now appears unlikely that the LIL will reach commercial operation for the start of this winter. Supply adequacy has proved very troublesome in past winter seasons, and remains a matter of significant attention now.

As our preceding quarterly report observed, the TTO program continues to plan and measure progress using the same four work streams we described in our last quarterly report. Muskrat Falls construction continued to proceed under its own plans and schedules; progress against those construction milestones have continued to bear on and have material linkages to the TTO work streams and their schedules. For example, in many cases, TTO activity commencement depends on construction (and other) work being performed by General Electric. Our interest in construction milestones in this report focuses solely on addressing how they may influence TTO activities.

The four work streams of the TTO, each of which operate under dedicated teams, consist of:

¹ 1st power is the beginning of a list of tests and activities whose performance is necessary prior to commercial operation.

- BTPO (Building the Production Organization), which focuses on operations and maintenance strategy, organization design and staffing, training, securing needed outside resources, and the development of operations and maintenance plans, systems, strategies, and procedures for the integration of the IIS and the LCP
- RFI (Ready for Integration), which focuses on system planning inputs for design and operational requirements, development of reliability standards, support for operational readiness, and participation in testing
- RCFI (Ready for Commercial Integration), which focuses on commercial, legislative, and regulatory matters
- RFO (Ready for Operations), which has functional oversight of a variety of requirements (*e.g.*, safety and environmental) required reports, contractor deliverables, and turnovers to operations.

b. The Purpose of this Report

As our last quarterly report described, the Board of Commissioners of Public Utilities (the Board) asked The Liberty Consulting Group (Liberty) to examine and assess progress in accomplishing a smooth and successful transition to operations. Such a transition is central to IIS adequacy and reliability, both before and after generation begins at Muskrat Falls. We have continued to examine plans, schedules, and status of activities in the first three of the four TTO work streams. We have not examined LCP construction status or progress. Nalcor has embedded the team responsible for the RFO work stream into the LCP organization responsible for construction. We therefore have excluded its work as well from our review.

This report sets forth the results of our third quarterly review of efforts under the BTPO, RFI, and RCFI work streams. We address how well TTO work has proceeded in support of the integration of and reliable operation of the assets at the planned in-service dates.

Our work in reviewing progress over the past quarter sought answers to a series of basic questions:

- Do the BTPO, RFI, and RCFI work stream plans and schedules present a sufficiently comprehensive, well-defined, logically sequenced and tied set of activities to support the TTO?
- What progress was made in the last quarter relative to the schedules for these three work streams?
- Can management provide meaningful answers to questions about the status of scheduled activities?
- Has management identified actions that, if executed, can succeed in meeting the schedule established last fall for these three work streams?
- What specific measures, actions, and results should form the focus of our next quarter's monitoring efforts?
- What lessons learned from our past quarter's monitoring efforts will enhance future ones?

2. Overall Perspectives from Management

As it did in the context of our last quarterly report, management prepared a detailed presentation describing its views of TTO progress. This presentation also addressed specifically an extensive list of topic areas and issues we provided following our review of a report on TTO schedule activities. We found the report informative and responsive to our topics and issues. Within the limits of what one can glean from a review of the TTO work stream scheduling and reporting (we discuss those limits below), we found the presentation and management's responses to our detailed questions useful in our assessment of schedule status and potential jeopardy to key milestone dates. We continue to acknowledge management's support for our efforts.

- We learned that several key milestones were achieved during the second quarter including:
 - 1st power transfer on June 11, 2018 (45MW)
 - Muskrat Falls AC Switchyard was successfully energized April 2nd
 - Muskrat Falls Converter Station successful energization on May 10th
 - Soldiers Pond Converter Station successful energization on May 16th
 - HVdc Transmission Lines turn over to Operations
- The fourth of four completion gaps (development of an asset management program) identified in the Liberty fourth quarter 2017 report saw substantial advancement by the end of the second quarter
- TTO program outcomes exceeded second quarter baseline expectations in each of the three months
- TTO deliverables to enable LIL First Power were met and remaining deliverables to enable asset turnover for commercial operations were, according to statements by management, on track to meet current project schedules. However, Liberty observed that Management did not express confidence that this date would be met.
- Recruiting progressed, with 44 of 59 positions in Transmission, 5 of 27 in Generation, 31 of 43 in Engineering, and 5 of 15 in Support Services secured and onboard as of the end of June.
- General Electric support services contract negotiations were concluded and a contract was signed

3. Summary of Liberty's Conclusions

Some time ago, Nalcor changed its plans for completing work on the LIL to enable first operation of a single pole. A key milestone in support of this initiative was achieving LIL "1st power." The goal of this change was to permit the use this coming winter season of what will eventually become a bipole power transmission path. Successful completion of this plan will provide access to recall power from Labrador, through initial, single-pole operation.

During the second quarter, management's main focus was completing the necessary activities in support of achieving LIL "1st power." Management succeeded in achieving this critical milestone on June 11, 2018. The focus then shifted to the dynamic commissioning phase of the project in preparation for trial operations and commercial operation, then targeted for late Fall 2018.

Substantial work on construction and other bulk TTO activities remains. We observed substantial progress against schedule in the last quarter. However, even as measured by management, progress has not recaptured all time lost in the previous quarters. We do not agree with management's observation that remaining deliverables to enable asset turnover for commercial operations remained on track to meet current project schedules. After our August meetings with them management advised that the commercial operation date was delayed to January 1, 2019. Our report dated August 30, 2018 on Power Supply Adequacy for Winter 2018-19 provides further details on the implications of this delay.

In the past, two main factors have constrained the timely completion of TTO activities.

- Completion of tasks dependent upon General Electric
- A lag in filling internal positions

We did not see any evidence to suggest an encouraging level of improvement in General Electric's performance. General Electric continues to miss deadlines affecting the work of the transition team, for example, late delivery of operator training, delays in equipment turnovers and associated documentation and identification of spare parts. We observed these continued delays in the completion of construction-related activities have created an environment making schedule slips expected and tolerated, contributing at times to a lack of a sense of urgency. We did not find sufficient focus on: (a) the critical path and (b) milestones in general. Securing greater focus and more timely performance from General Electric will continue as the greatest challenge facing management in coming months.

Management has made progress in 2018 to address internal resource shortages, ramping up hiring of internal resources and increasing reliance on specialty contractors for on-going start-up and operational support. Total secured staffing increased from 43 percent in the first quarter to 69 percent by the end of the second quarter. The pace of transition work has clearly accelerated over the past several months. Management's knowledge and engagement has also improved. Sufficient schedule time remains for the TTO team to execute its plan in support of a smooth transition to operations, but doing so will require continued and sustained improvement in the pace of getting both bulk and critical activities completed.

Our work addressing the April-June quarter of this year, also identified a number of other issues, which we discuss in the following paragraphs.

Spares Parts Identification and Warehousing--We previously recommended that management identify all spares and parts necessary for storage at the converter stations, and develop a plan seeking to eliminate the distant, temporary location, to avoid exposure to winter seasons. Based on the most recent schedule update and additional discussion provided at our August 10 review meeting, some progress has been made on spare parts identification. Significant gaps, however, remain in identifying parts for the converter stations. Management requires additional focus here to avoid potential reliability issues following LIL turnover to operations. We discussed storage locations with management, who plan to complete a risk assessment to identify the appropriate

geographic location for storage of all material. That assessment will consider both cost and reliability.

Recall Power and Other Commercial Arrangements-- Nalcor advised that the Power Supply Power Purchase and Optimization Agreement (PSPPOA), has been renamed the Extra Provincial Marketing Agreement. Management has delayed its filing with the Board to later in the year. This agreement will govern sharing of economic benefits from combined operation of regulated and non-regulated assets. Mitigation efforts to take agreement execution off critical path include applying for approval of interim arrangements while details for a longer term agreement are developed for final Board approval. The delay does not appear critical.

Our last report identified a requirement for establishing a Point to Point Transmission Service Agreement (TSA) from Labrador to the Island for imports. Upon further review, Management now reports that this delivery point is no longer business critical to deliver off-Island power purchases. The already established Network Integration TSAs support imports.

BTPO Support Contracts and Training-- As of June 30th, Management had put into effect three of the four key services support agreements (ATCO, Growler, General Electric). The one remaining agreement is with NLH, and covers support at the Soldiers Pond AC switchyard, HVdc cable transition compounds and telecommunications. It remains under negotiation, with expected completion in the third quarter. An existing work task authorization under the TTO budget now covers all NLH support services requirements.

Progress in completing operator training remains a significant concern. As of June 30th, only seven of the twenty identified General Electric Operator training courses in the TTO work plan had been run. Rescheduling of those remaining courses leaves their completion dates just prior to turnovers of the assets the training addresses. Delivery of the courses remains dependent on General Electric. However, Management has turned to outside resources for support of training development and execution as well.

Emergency Preparedness – We found solid progress as of June 30th in developing required emergency preparedness plans. Management has completed development of an interim overhead transmission line (OHTL) emergency response and restoration strategy, assembled a team, and initiated work to perform mock trials prior to winter 2018. Note that this response plan will still require at least two weeks to restore the LIL to service.

Technical Studies—Management provided an update at the August 10 monitoring meeting on the Stage IV High Power Studies. It has scheduled completion of this work for the fourth quarter. As studies are completed, they will be made available to the Board for review. We observed no significant concerns with the delay.

4. Program Schedule Structure and Second Quarter Performance

Summary

Shortcomings in TTO activity schedules and in the ability to use them to monitor performance and status effectively led us to adopt a “work around” approach to support our monitoring work back in September 2017. That approach involved use of an “official” baseline schedule established at that time. Our work has included reports from management on progress against that schedule, continuing through the present. Management then considered that schedule comprehensive in laying out the detailed work activities going forward. Management made a surprisingly large number of changes to this schedule in the last quarter of 2017. Those changes included activity additions that we viewed as sound enhancements in schedule detail which prompted us to make some additional adjustments to the baseline in early 2018. These changes did not produce schedule extensions for any activities.

The schedule has now stabilized somewhat, but issues we observed earlier remain:

- Limited linking among schedule activities
- Continuing use of long duration activities
- Reliance on subjective, percent complete information to assess progress.

April – June 2018 Milestone Changes

The foundation for the baseline integration schedule used by TTO comes from several key milestones extracted from the LCP construction schedule. These milestones provide a framework for the planning, scheduling, and tracking of TTO activities designed to prepare fully for operations. TTO schedule milestones identify linkages between construction and integration activities. Milestone dates tracked in the transition schedule represent the earliest date that the transition team can be ready. The TTO schedule milestones may differ with milestone dates released to the public or those contained in the construction schedule. Nalcor categorizes the TTO schedule milestone dates as “stretch targets.”

The chart below shows that nominally reported milestone progress since the September 2017 baseline has continually fallen short of planned levels. However, during the second quarter, a number of key milestones were achieved, although significantly later than originally planned. Most notably was achievement on June 11, 2018 of LIL Pole 1 First Power. In the past, Management listed two main factors contributing to the delays in achieving milestones: (a) General Electric’s late completion of construction activities and turnover of critical documentation, and (b) internal resource shortages. We continue to see General Electric’s performance as a major schedule threat. Continued delays in the completion of construction related activities have created an environment that appears to make schedule slips expected and tolerated.

Overall, we did not see sufficient focus on the critical path and the intermediate milestones, evidenced, for example, by the exclusion in the TTO schedule of several important milestones, such as LIL Pole 1 In-Service date. Going forward, improved integration of the construction milestones into the TTO schedule and an increased focus by the transition team on critical path activities will be essential, if they are to be successful in placing the LIL Pole 1 in service by the current forecast of January 1, 2019.

We did find good progress in addressing internal resource shortages, with the ramping up of hiring internal resources and increased reliance on specialty contractors ATCO and Growler for on-going start-up and operational support.

0	Baseline	2017	2018	2019	2020
Maritime Link					
Granite Canal Switchyard - Substantial Completion	09/07/2017	08/04/2017 Actual			
Bottom Brook Switchyard-Substantial Completion	09/18/2017	07/13/2017 Actual			
Maritime Link 1 st Power	10/30/2017	12/16/17 Actual			
Labrador Transmission Assets					
Churchill Falls Switchyard (New) - Ready to Energize	10/31/2017		02/14/18 Actual		
Muskrat Falls Switchyard – Ready to Energize	11/28/2017		04/02/18 Actual		
LTA Ready for Power Transmission	01/01/2018		04/27/18 Actual		
Labrador Island Link Assets					
HVdc Transmission Line Construction Complete	10/27/2017	10/30/17 Actual			
SP Switchyard & Converter Station – Ready for Operation	01/16/2018		05/16/18 Actual		
Muskrat Falls Converter Station – Ready for Energization	01/16/2018		05/10/18 Actual		
SP Synchronous Condensers- Ready for Operations	03/06/2018		10/22/18		
LITL 1 st Power Transfer Labrador to Newfoundland (Pole 1)	05/01/2018		06/11/18 Actual		
LITL 1 st Power Transfer Labrador to Newfoundland (Pole 2)	10/30/2018			02/18/19	
Muskrat Falls					
Power House Unit 1- Ready for Operation	04/17/2019			07/18/19	
Power House Unit 2 ready for Operation	07/09/2019			07/09/19	
MFG First Power	07/30/2019			06/24/19	
Power House Unit 3- Ready for Operation	10/16/2019			10/16/19	
Power House Unit 4- Ready for Operation	01/22/2020				01/22/20
MFG Full Power	01/22/2020				01/22/20

April – June Activity Slippage

Completion of planned activities for the second quarter continued to lag. The table below shows 59 activities scheduled for completion in the second quarter of calendar 2018, with (18) actually completed. Despite this gap, the transition team did make considerable progress in completing activities delayed from prior quarters.

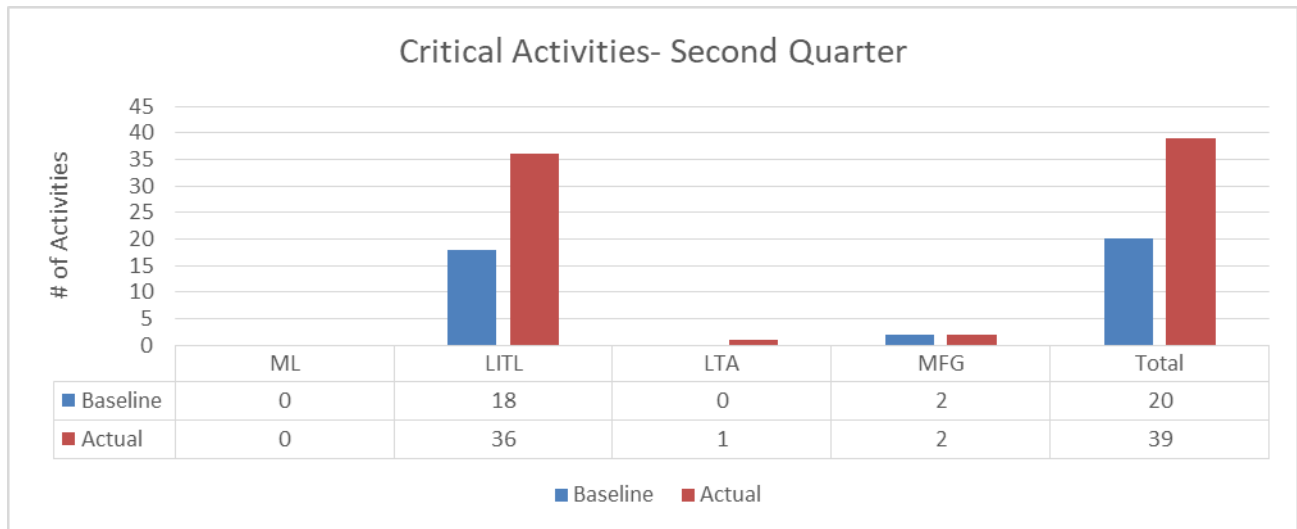
Second Quarter 2018-Performance Summary			
Baseline Activities Scheduled	Baseline Activities Scheduled and Completed	Unscheduled Activities Completed	Total Activities Completed
59	18	89	107

The preceding table’s activities slated for completion in the second quarter fall into two categories:

- Critical activities - - those having an impact on critical path milestones

- Bulk activities - - those just requiring completion by the end of the project.

Differentiating between the two better serves an assessment of quarterly schedule performance. At this phase of the project, a focus on critical activities best illuminates schedule status. The chart below summarizes second-quarter progress on activities shown as critical to completion per schedules.



The baseline schedule called for the completion of 20 critical activities in the second quarter of 2018. Nalcor did complete a total of 39 critical activities in the quarter. However, 27 of them had been scheduled for completion by the end of the preceding quarter (March 31, 2018). Management also completed another 10 not originally included in the baseline plan. Thus, management secured the completion of less than 10 percent (2 of 20) of the critical activities targeted for completion in the second quarter of 2018. LITL activities targeted but not finished in the second quarter consisted mostly of Critical Activities not required for LIL 1st Power. Management moved completion of these back to the third quarter. Completing them by this new date should not result in any impact on LIL Pole 1 in-service date.

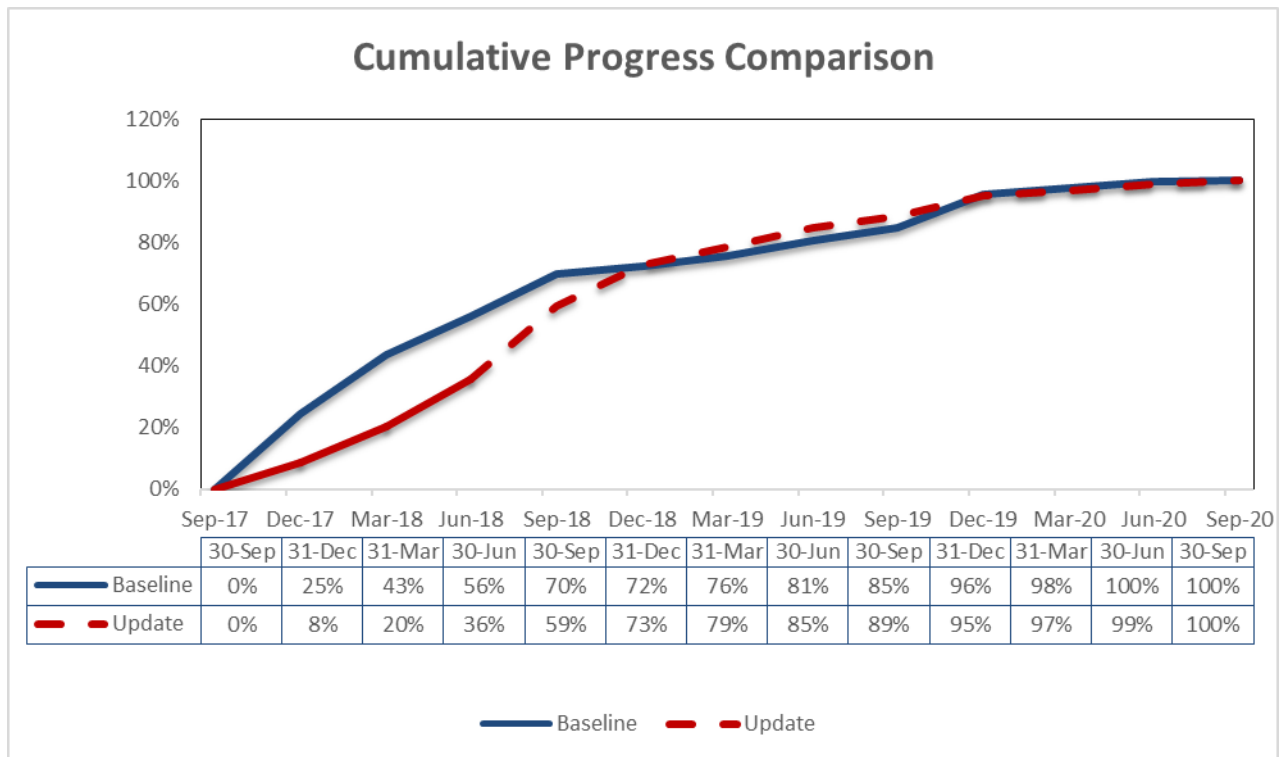
The Completion “S-Curve”

We reported last quarter on progress against a cumulative percent-complete “S-curve” as a metric for assessing delay. We found this approach necessary, given the gaps in schedule construction and reporting described earlier. Percent complete as we measured it equals cumulative number of activities scheduled for completion divided by total outstanding activities. Our curve for the last quarter, incorporating all planned activities, confirmed a lack of progress at rates commensurate with the activities called for by the September 2017 baseline. The curve showed completion of only 20 percent of total outstanding activities versus targeted completion of 43 percent.

We observed in our report for the last quarter that the pace of progress would have to pick up substantially in 2018 for a return to conformity with the expectations of the baseline. The next chart shows that progress did accelerate during the second quarter, but continued to lag by the S-Curve measure through the first six months of 2018. In the second quarter, progress advanced by

16 percent, as compared to 12 percent in the first quarter. Overall progress improved to 36 percent, but still fell significantly short of the baseline target of 56 percent.

Management cited two primary constraints driving low completion rates: (a) setbacks in completing baseline activities resulting from late staffing additions, and (b) delays in completing General Electric work activities. We found the improvement we saw in the second quarter generally encouraging, because the pace of completing transition work continues to accelerate. The additional resources brought on board appear to have made a real difference. Despite being behind currently with reference to the baseline plan, the schedule suggests that sufficient time remains for the team to get back on schedule, without affecting its objective of achieving a smooth transition to operations. The continued schedule recovery needed to do so however, will require a continued focus on: (a) completion of activities affecting critical path activities, and (b) sustained improvement in the completion of bulk work activities.



Summary of Progress by Teams

The three teams whose work streams we examined made the following overall progress in the quarter just ended,

- The RFI team made progress in a number of areas. Examples include identification of Phase II NERC reliability standards for voluntary adoption, completion of additional operational studies for Stage III LIL at low power, and completion of grid energization procedures (GEP’s) for Soldiers Pond (SOP) and MF converter stations (monopole). However, management delayed completion of Stage IV (high power) operational studies

from the third to the fourth quarter, due to additional work related to Stage III and Grid Energization Procedures (GEP's) for SOP and MF converters (bipole) and to completion reforecast for the SOP Sync Plant.

- The BTPO team has made additional progress in hiring staff in the first quarter. The current plan calls for 90 positions to be filled in 2018. As of the end of June, 53 of the 90 were on-board, with 24 in various stages of acquisition, leaving 13 not materially advanced.
- The BTPO team completed the maintenance program for high frequency PM's for stations (SOP, CF, MF) and secured execution of the General Electric support services contract

The BTPO team's development of asset management plans, delivery of employee training, in particular operator training slated for delivery by General Electric, and inventory related activities continue to lag into the third and fourth quarter of 2018. The RFCI has made progress on the Extra Provincial Marketing Agreement but it now appears this document will not be submitted to the Board for approval until the third quarter.

5. Management's Ability to Answer Questions

The schedule and the supplemental information continued to support a high-level evaluation of overall performance during the past quarter. Team leads and support personnel for each of the TTO work streams pertinent to our review continued to show knowledge and confidence about their areas of responsibility. Management continued to provide significant information in its presentation to us, and generally offered clear responses to our questions.

However, we were not satisfied with Management's responses to our questions related to impacts related to completion of General Electric's work in support of the LIL Pole 1's in-service date. Management lacked confidence in General Electric's ability to meet the vendor's commitments for delivery and testing of operating software, acceptance testing, and training of operating personnel. We emphasized to management the critical importance of the LIL for this winter, and expressed our concern that a greater sense of urgency and level of management attention would be necessary to avoid further slippage of this significant milestone.

6. Other Issues

a. LIL Pole 1 InService Date

Our August 30, 2018 report on Power Supply Adequacy for Winter of 2018-2019 discusses our reasons for concluding that the LIL will not likely reach a state warranting a declaration of commercial operation by the start of this winter. Moreover, even if it does, we believe it very likely that it will not operate fully reliably in its early months - - *i.e.*, the remainder of the coming winter season. Please refer to that report for additional information.

b. Spare Parts Identification and Storage Locations

Our last quarter report recommended that management identify all spares and parts necessary for storage at the converter stations, and provide for locating them there, and develop a plan seeking to eliminate the distant, temporary location as soon as feasible, to avoid exposure to winter seasons following the one coming. The most recent schedule update and additional discussion at our

August 10 review meeting addressed these issues. We found that management has made progress on spare parts identification for the terminal stations and the transmission lines, but significant gaps remain in identifying parts for the converter stations. Additional focus will be required in this area to avoid potential reliability issues once the LIL is turned over to operations. Regarding storage locations, management reports that a risk assessment will be completed to identify the appropriate geographic location for storage of all material, considering both cost and reliability.

c. Recall Power and Other Commercial Arrangements

Our last quarter's report highlighted two outstanding commercial issues requiring completion:

- Establishing the delivery point for delivery of off-Island power to displace Holyrood in October
- Delay to the third quarter of 2018 in presenting the PSPPOA.

Previous plans identified resolution of CF(L)Co participation in the Multi-Party Pooling Agreement as material to determination of the Labrador delivery point to establish a Point to Point TSA from Labrador to the Island for imports. Upon further review, management has concluded that this delivery point no longer remains business critical for delivery of off-Island power purchases in October 2018. Imports are being facilitated by the already established Network Integration TSA.

The PSPPOA has been renamed the Extra Provincial Marketing Agreement. The agreement reportedly does not have a bearing on recall power availability. Management also indicates that efforts to complete the agreement do not involve substantive operational issues, but concern commercial terms. The Extra Provincial Marketing Agreement, however, will serve the major purpose of governing the sharing of economic benefits resulting from combined operation of regulated and non-regulated assets to optimize sales and purchases to and from market participants outside Newfoundland and Labrador.

Management now forecasts completion of the Extra Provincial Marketing Agreement later in 2018. It plans to apply for approval of interim arrangements while it develops the details of a longer term agreement, in order to take this agreement off the critical path.

d. BTPO Support Contracts and Training Services

As of June 30th, management had completed three of the four services support agreements (ATCO, Growler, and General Electric), and remained in negotiations over the remaining one (NLH). A support contract for the Soldiers Pond AC switchyard, HVdc cable transition compounds and telecommunications is currently being negotiated with NLH Operations. Agreement has reportedly been reached on key principles, but some matters await resolution. Working sessions with Nalcor/Hydro stakeholders occurred in June and remaining items are expected to be concluded in the third quarter. All NLH support services requirements are currently being fulfilled through an existing work task authorization under the TTO budget.

Progress in training continues to remain a significant concern. As of June 30th, seven of the twenty identified General Electric Operator training courses in the TTO work plan had been run. Remaining courses are being rescheduled with plans for completion prior to turnover of the

respective assets. Delivery of the courses remains dependent on General Electric. However, management has turned to outside resources for support of training development and execution as well. In the event courses are not delivered, management has established contingency plans. These measures seek to secure additional time to provide required training, by providing for operational coverage by General Electric until turnover and by HVdc support services resources thereafter.

e. Emergency Response Preparedness (ERP)

As of June 30th, management had completed an ERP for SOP Terminal Station, conducted table top exercises, completed an interim ERP for MF Terminal Station, and completed the ERP for Strait of Bell Island crossing. Management has adopted a plan for the development of an interim emergency response and restoration strategy for the OHTL, assembled a team, and initiated work in order to meet mock trials prior to winter 2018. Future enhancements to the emergency OHTL restoration plan remain under review and evaluation for further consideration from a cost/benefit perspective.

f. Technical Studies and Analyses

Management has delayed completion of Stage IV High Power Studies to the fourth quarter, given of additional work identified from the Stage III Low Power studies, which have now been completed. We observed no significant concerns with the delay and the studies will be made available to the Board when they are completed.

g. Staffing

The table below shows considerable progress through the second quarter in securing O&M resources. Significant hiring was completed in the second quarter in the Transmission O&M and Engineering Services areas. One area still requiring significant hiring is Generation O&M. Management has made a decision to defer most of this hiring into the third and fourth quarter of this year, to better reflect the timing of when these resources will actually be required. Management has indicated they currently have a strong pool of candidates available in their apprentice training program to fill these positions as the need arises.

Overall Staffing Status as of June 30,2018							
	<i>Total Planned</i>	<i>In Process</i>	<i>Hired-On-Board</i>	<i>Offers Accepted</i>	<i>*Total Secured</i>	<i>% Secured Second Qtr</i>	<i>% Secured First Quarter</i>
Transmission O&M Staff	59	2	46	6	52	88%	56%
Generation O&M Staff	27	13	5	1	6	22%	11%
Engineering Services Staff	43	7	34	1	35	81%	47%
Support Services Staff	15	0	5	1	6	40%	13%
BTPO Staff/Contractors	15	3	11	0	11	73%	73%
Total	159	25	101	9	110	69%	43%
<i>* Secured = On-Board + Offer Accepted</i>							
<i>**In Process includes posted, screening, interview or offer stage</i>							

7. Next Quarter’s Key Monitoring Activities

- a. Hydro management needs to secure the visibility necessary to secure meaningful and credible information and estimates of milestone dates to which it plans its work. The reasons are two-fold: (a) to make plans and commit resources to realistic dates, in order to logically, effectively, and efficiently use its resources, and (b) to understand clearly

and completely schedule delay risks, which may have extremely consequential impacts on winter reliability and what Hydro may have to do to ensure it. Hydro should expect and assure that Nalcor Senior Management is increasing pressure on General Electric through a formal program of regular executive-level meetings, supported by activity schedule and status details to ensure progress sufficient to meet schedule milestones and designed to secure specific and measurable commitments. Without such pressure and transparency, Hydro will not be doing all that it can to accelerate reliable LIL operation this winter, and, just as importantly, act with dispatch to address reliability concerns if such reliable operation cannot be assured.

- b. The BTPO team appears to have developed a number of work arounds to fill the void by General Electric related to the delivery of operator training. However, the team needs to apply sustained focus in the third quarter to ensure that key operating personnel have received the appropriate training necessary to ensure reliable operation of LIL Pole 1, as it progresses into commercial operation in late Fall.
- c. Despite progress in the second quarter, a concerted effort remains necessary to fill gaps in Generation O&M Staff positions. The third and fourth quarters require sustained efforts to ensure adequate full levels of staffing in place to support a smooth transition to operations.
- d. Focused effort must continue in the third quarter to complete the development of and incorporation into the JD Edwards Maintenance Management System of all asset management plans required to ensure reliable commercial operation of the LIL Pole 1.
- e. A continued emphasis on the identification of spare parts, in particular for the converter stations, must continue in the third quarter. Efforts to establish a suitable and cost effective plan to determine the appropriate geographic location for the storage of materials should also be expedited and completed in the third quarter.
- f. The RFCI Team must continue with its plan to file with the Board an interim Extra Provincial Marketing Agreement by the end of August. All feasible efforts should be made to ensure a final submittal shortly thereafter.
- g. Management needs to continue with completion of the various activities currently underway to facilitate an October mock trial run of the OHTL emergency response and restoration plan.
- h. Management needs to perform a detailed review of the detailed critical path schedule of all activities required to reach commercial operation of the LIL, including but not limited to the General Electric software work, installation and testing of software, successful initial operations to permit acceptance, acquisition, training and development of operating and support personnel, and installation of any necessary synchronous condensers. A report to the Board should be provided, no later than October 1, 2018, with updates every two weeks thereafter.