

**Fifteenth 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**

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Table of Contents

1. Purpose of this Report	1
2. Major Observations	2
3. Detailed Findings.....	5
a. Summary of Key LIL Events.....	5
b. Another Disappointing FAT Round.....	6
c. Procedures and Training Implications of the Most Recent LIL Trip.....	7
d. Preventing LIL Operations Alarm Fatigue	8
e. Synchronous Condensers.....	8
f. HVDC OHL.....	9
g. Sea Electrode Issues.....	10
h. Muskrat Falls Generators.....	10
i. Staffing.....	11
j. Training.....	11
k. Procedures.....	11
l. Emergency Response.....	11
m. O&M Contracts.....	12
n. Emera Agreements.....	12
o. MPPA/IOA Progress.....	12

1. Purpose of this Report

This report examines first quarter 2022 scheduled and completed activities undertaken as part of completing the Lower Churchill Project (LCP) assets and integrating them into the province’s electrical system. Our preceding report noted the cessation of Transition to Operation (TTO) organization operations as 2021 ended, with its comparatively small number of remaining open items transferred to the groups at Hydro (now leading an integrated Hydro/Nalcor organization responsible for LCP completion and operation). This report summarizes our monitoring of work performed through the first quarter and into April for certain issues.

This report discusses the current status of progress made in addressing the converter stations, overhead dc line, synchronous condenser, and sea electrode issues raised previously. While moving the generating units at Muskrat Falls into commercial operation has gone more smoothly, issues remain there as well. Yet another attempt to proceed successfully through Factory Acceptance Testing (FAT) of converter station software comprised the major LCP event since the meetings (February 11 and 17, 2022) that began our review of the last quarter of 2021. The LIL

has failed to pass that milestone despite a number of attempts over a period of about two years. This latest in a now long-series of such testing came in April, outside of the first quarter, but its significance caused us to await it before issuing this report.

The steps we undertook to address early 2022 activities proceeded as follows:

- Review of Hydro's monthly LIL updates
- Identification of recurring and emergent matters related to LCP completion and presentation to Hydro of a list of questions (issued on April 1, 2022) for response prior to meeting with its personnel
- Review of the responses to those questions (received April 12, 2022) and of Hydro's monthly LIL update for March
- Follow-up questions to Hydro (sent April 15, 2022 and responses to those questions (received April 20, 2022)
- Teleconference between our monitoring team and Hydro's management team (April 21 2022)
- Follow-up questions to Hydro (sent April 21, 2022 and responses to those questions (received April 26 and May 2, 2022).

We received Hydro's May 5, 2022 LIL monthly update during the final stages of completing this report. We report some of its contents relating to issues raised in this report, but caution that we have not yet addressed its contents in the detail we usually seek in reviewing these reports.

2. Major Observations

Overall LIL Progress: Another major setback occurred in April, as the results of yet another round of Factory Acceptance Testing (FAT) failed to move the control software forward. As we met with Hydro's team, detailed examination of the results of that round of testing remained under review. Shortly thereafter came a decision that the state of the software, essential to protection and control in operating the LIL, did not meet the requirements for release to the site for use. Hydro's May 5, 2022 LIL monthly update reported that GE is working toward a second quarter resolution of what Hydro termed "a few items" still requiring resolution. Absent details about open items (considered by Hydro as confidential) and in light of similar language about correction time estimates following past FAT failures, we cannot discount the seriousness of remaining problems or the time it may take to resolve them. Moreover, analyzing open items on the basis of their total numbers remaining does not show material progress in reducing their number. That analysis also appears to show that as some get closed others continued to be opened.

The rate of correction overall remains disappointing, with open items actually increasing marginally. Project requirements apparently allow closure of many of the remaining issues in a six-month period following successful completion of Trial Operation. Be that so, however, recent results show that the FAT continues to suffer defects or gaps that prevent even the inception of the Trial Operation period. The LIL has been failing FAT rounds for two years - - a remarkably discouraging performance record. Experience since the start of 2022 shows no tangible measures of progress. It remains impossible to project a reasonable date for attainment of commercial operations at full design capability. There remains no material degree of confidence that attaining

that state will come within 12 months and it may well be longer away. Now well into the year, the importance in pursuing the best path forward for operating through yet another coming winter season without a reliably performing LIL has increased.

February 2022 LIL Pole 1 Trip: A February 20, 2022 trip of Pole 1 due to a valve hall fire alarm (later determined to have resulted from sensor failure, rather than a fire) exposed issues that raise questions about procedures, training, and, based on questions we posed, “alarm fatigue.” An operator undertook procedurally required confirmation, but used information from systems in the control room, not confirmed by visually checking the outside equipment configuration condition, before executing the required next steps for returning Pole 1 to operation. The procedure did not explicitly require visual confirmation, but post-incident examination identified that it would have proved sufficient. Pole 1 tripped because the equipment not visually checked did not have the status required to proceed. The post-event review determined no need to change the procedure, instead calling for communicating to existing personnel the need for visual confirmation and providing training for new personnel.

The ease of changing the procedure to clarify the need for confirmation to be visual makes it difficult to understand why management does not consider that change appropriate. Good practice considers procedures and training complementary, not mutually exclusive alternatives. By that same standard, comprehensive preparation for operation takes more than the existence of procedures and the provision of training. Testing should confirm the effectiveness of each, working together to ensure desired results, as we believe these circumstances demonstrate.

We understand that demands currently placed on limited resources may so far have limited focus on reaching this level of completion in finalizing preparations for operations. We anticipate that continuing monitoring work will address management’s progress in identifying test cases to test procedure sufficiency and operator proficiency, in order to validate them under circumstances that will inevitably stress operators in the future. Such testing should extend into the eventual period of steady-state operations, but needs to be reasonably well advanced when those operations commence as well.

Hydro’s May 5, 2022 LIL monthly update reported another operating incident. Hydro reported a restriction on LIL return to bipole operation pending review of a potential safety incident occurring during GE’s work performance. The incident followed return of the LIL to monopole operation after a two-day down period for planned work. We have not had time to address the causes or implications of that incident.

Our review of these circumstances also disclosed that operators receive a large number of alarm and automatic notifications (50,000 in the last three months). Those levels, expressed over time intervals (*e.g.*, number per hour) exceed what good practice considers appropriate in preventing “alarm fatigue,” which diminishes timeliness and effectiveness of operator response to alarms and automatic notices requiring confirmation or action. The numbers here may decrease if and as software development advances, but the numbers for the three months show no declining trend. Again, project and operations resources remain tasked with meeting many other needs, but good

operational readiness should include standards, metrics for applying them, and actions to respond to high numbers. We anticipate continuing to examine progress in addressing this area in the future.

Synchronous Condensers: GE remains of the view that the elliptical bearing modifications to the synchronous condenser issues have resolved the vibration issues that have been extant now for some time. Overall steady state vibration amplitudes remain within technical specification requirements, but other areas of non-conformance continue. Neither Hydro nor its outside expert have formally signed off on this view, but current information has not led them through the present to urge an alternate solution. Uncertainties exist as to the effectiveness of additional actions and as to the long term effects of the current anomalies (*e.g.*, reduced operating effectiveness, increased maintenance, early retirement) if they remain unaddressed.

Our general experience would suggest that commercial negotiation, assuming no change in the non-conformances so far observed, may prove the principal opportunity for resolving any differences that remain as project completion approaches.

The prior period Synchronous Condenser Unit 1 (SC1) bearing failure underwent correction at least provisionally by installing spare bearings, with return to service scheduled for June 2022. Continuing root cause analysis by GE at this date indicates to us the possibility that error in lubrication system adjustment may not fully explain the circumstances. Completion of that analysis will hopefully explain whether design or operating circumstances have contributed to the failure. Hydro's May 5, 2022 LIL monthly update reports the cause of the damage as "unknown" and uncertainty about whether the underlying issues extend to more than SC1.

Storm Event Repairs: Management continues to believe that late 2021 completion of repairs leaves no significant repair and replacement issues remaining. It still plans to address risks of similar exposure at and any mitigation plans developed for other locations as part of the Reliability and Resource Adequacy Study.

Electrode Sites: Hydro had anticipated completion of remaining studies regarding the breakwater protecting the L'Anse aux Diabes sea electrode site by the end of March, 2022. We are still awaiting review and discussion of the applicable reports when Hydro provides them. Construction remains scheduled for completion in 2022. We have expressed concern about the lack of plans for similar assessment at the Newfoundland-side site. Management has now reported as underway efforts to secure outside assistance in making that assessment. We also expressed concerns about remote monitoring to check electrode integrity at hard-to-reach sites. Management reported to us during this quarter's monitoring activities a method for doing so.

Muskrat Falls Generators: The project has released all units to operations. Unit 2 remains at a constant 140MW power level. An internal unit inspection will occur during the planned summer shutdown, to examine further the causes of the vibration incident that produced the operating limitation. A plan and schedule for any required corrective actions will follow.

Overall TTO Schedule Status: Only 24 items remain open from the tasks transferred by TTO to Hydro at TTO's December 2021 operations end. The items address staffing, O&M procedures,

emergency plans, and training, with the Andritz services agreement and the Interconnection Operators Agreement representing the most significant issues.

Staffing and Training: Current plans continue to call for approximately 200 positions. Hydro has filled all but six of the positions called for by current plans. Manitoba Hydro International personnel continue to provide five operations positions and internal hires now fill five previously open operator positions. Only one set of first and second phase training sessions remain outstanding.

Muskrat Falls Site Emergency Response: Site Emergency Response responsibilities continue on an interim basis that employs contractor support under a 12-month contract intended to provide time for development of replacement internal resources. Schedules call for imminent completion of remaining standard operating guidelines.

Maintenance Programs Build Out: Hydro reports all 238 O&M manuals required for generation and transmission assets as completed, with 3 still under review and 27 returned to the contractor for comment.

MPPA/IOA Progress: The MPPA (on which execution of the reportedly completed IOA is conditioned) remains incomplete and subject to further completion delay. We continue to question how remaining open items described as non-substantive can take so long to close. However, we understand the sensitivity in communicating for public review matters under negotiation. Further extended delay may risk economic loss, given the now significant production from the Muskrat Falls units makes westward flow of Muskrat Falls energy important. Particularly during periods of low electricity consumption in Labrador, limits on use of that path have the potential for eventually forcing spillage at the Labrador hydro sites.

Other Agreements: All 56 transmission support contracts are in place and virtually all generation O&M contracts reached completion (60 of 61), with turnover to operations. The Andritz services agreement comprises the last major contract that remains open.

3. Detailed Findings

a. Summary of Key LIL Events

The replaced valve-hall beams continue to function without reported issues. Our last report addressed a December 11, 2021 LIL bipole trip during dynamic commissioning tests using a Full Function Bipole (FFB) software release. The LIL was at the time of the trip carrying 300MW, resulting in underfrequency load shedding affecting approximately 22,000 customers until full power restoration after about 18 minutes.

To prepare for that report, we met with Hydro management in January 2022. Hydro reported then that GE and LCP management had hopes that the next planned release of the LIL protection and control software would support Trial Operations and Final Commissioning, with completion targeted for May 31, 2022. At that time, management reported that the present version of software had been operating continuously at various levels, up to 435MW, since December 17, 2021.

However, Hydro's March 3 monthly LIL update report brought more bad news about the LIL software, which had reportedly operated at levels up to about 320MW during February.

LIL Pole 1 tripped on February 20, 2022 in correct response to a fire alarm in the Pole 1 valve hall, followed by an effective transfer of load to Pole 2. Inspection of the valves showed no evidence of fire. Continuing examination later identified the failure of a sensor as the cause of the alarm. Following this determination, February 25, 2022 attempts began to return Pole 1 to operation, with Pole 2 still operating. However, another Pole 1 trip ended up leading to a shutdown of both poles, which continued pending examination of this circumstances.

An Operations group procedure review of the circumstances ultimately focused on execution of a procedure under which the operator took actions initiated by the February 25 Pole 1 return to operation. That procedure required confirmation of the status of a critical device before taking the action(s) in question. The operator used software rather than visual inspection to make the required confirmation. It does not appear that the procedure required visual confirmation, and it does appear that visual confirmation would have prevented the trip. The review found the procedure "correct," determining that reinforcing with supervisors and operators and informing new operators through training of the need for visual verification is sufficient.

As it has before, the current state of the software has produced a 450MW power transfer limit. During its periods of operation over recent months, the System Operator has limited LIL operation, when available, to a lesser maximum of 320MW. This restriction seeks to ensure that trips will not result in under frequency load shedding. The recurrence of bipole failures to date underscore the importance of the limitation.

b. Another Disappointing FAT Round

Pole 2 returned to service on March 24, 2022, with Pole 1 following on April 1. At about the same time, another FAT round commenced, employing a full-function software version. (*i.e.*, one that, if successfully tested, would support Trial Operation commencement). Testing ended on April 8, 2022, with detailed analysis of its results still underway when we met with Hydro's team as part of this quarter's monitoring efforts.

We received thereafter a fairly summary notification (without any underlying details) reporting disappointing results. As it has now for two years, FAT results proved unsatisfactory. GE, LCP and Hydro review of the results produced a decision not to release the software version to the site for use in proceeding toward Trial Operation. This testing round reportedly did successfully address a number previously open defects, but enough significant ones remained to prevent release. The parties have underway a review of the results and open items, meaning that as yet no schedule for software changes, further testing, and Trial Operation yet exist.

Our request for a copy of the single pole and bipole operation schedule anticipated for use before and during the Trial Operation Period remains open. These tests require inclusiveness, addressing, for example cases such as staged faults on the transmission lines, and operation at varying loads, up to and including high ones.

We also learned during this monitoring cycle that continued operations, dynamic commissioning and testing continue to identify new defects even at this late date. Strikingly, the total number of open “punch list” items requiring closure has increased between the ends of February and March of this year, with open items summarized as follows:

- 93 open and 68 closable, pending validation as of February end
- 98 open and 52 closable pending validation as of March end
- 14 new punches raised between February and March.

GE need not resolve all open items before completion of Trial Operation. Project requirements permit closure of more minor items without operational consequence (*e.g.*, spelling mistakes) within six months following successful Trial Operation completion. Issues of confidentiality surround details about the items deemed material in deciding that recent FAT results did not support software release to the site and about the open items discussed immediately above. Thus, we cannot assess:

- Why they remain at this very late stage
- The challenges in resolving them
- The degree to which “fixes” of some may be generating others.

Nevertheless, the recent FAT round failure is telling in and of itself and the punch lists number magnitudes and persistence remain very discomfoting. Continuing failures (now of some two years in duration) to successfully pass the FAT milestone and the continuing addition of new open items and persistent legacy ones as efforts continue to close others remain troubling. It remains impossible, as true at the time of our last report, to project a reasonable date for LIL attainment of commercial operations at full design capability. Despite the passage of more critical weeks, it may remain the case that LIL completion remains as many months distant as it was at the time of that report. Accordingly, we continue to believe it reasonable to project that completion may well come as far as and perhaps significantly longer than 12 months from now.

Therefore, Hydro’s need for pursuing the best path forward for operating through yet another coming winter season without a reliably performing LIL has become more significant, with winter clearly coming closer but LIL completion seemingly not. System conditions will make it more difficult to test the LIL at higher power levels during low load months. We consider it important to provide an operating environment that allow significant variation in LIL loadings during Trial Operation, in order to test its capabilities most robustly.

c. Procedures and Training Implications of the Most Recent LIL Trip

Hydro’s response to the most recent LIL trip appears to us an incomplete solution in a number of respects. First, if circumstances require that confirmation take visual inspection, the procedure can easily and should certainly so specify. Circumstances make clear that as written, the procedure does not, but it immediately should, make clear the need for visual inspection. Relying on interpersonal communication and even training as fully sufficient does not appear to us a sufficiently cautious approach or good practice. Second, with many procedures being developed by resources already under significant pressure and behind schedule, these circumstances should

cause management to consider whether the utility of a test of procedure knowledge and clarity is in order, in the fairly near term, but certainly as other priorities permit.

We expect that management would agree that a fully effective transition to commercial operation means not only the existence of rostered procedures and baseline training in their use, but a firm grasp on requirements material to operational stability and continuity. Identifying a testbed of key procedures and means to test at hand knowledge of their content or immediate understanding of where to turn for details should prove straightforward, with following development of efficiently executable tests of the ability to react quickly and properly to unexpected circumstances not burdensome.

d. Preventing LIL Operations Alarm Fatigue

A similar turnover readiness issue arose in connection with our questioning of alarm and other automated notifications - - the initiating cause of the events that eventually led to the operator error. Good practice calls for attention to “alarm management” that stress the importance of keeping at reasonable levels the numbers and frequency of alarms and other notifications requiring recognition, acknowledgement, or action reasonable levels. Standards and metrics exist in some industries and applications for assessing alarm rate frequency (numbers per specific time interval). Good practice recognizes that increases in alarm frequency diminish operator ability to respond both timely and correctly. Alarm “fatigue” can also diminish sensitivity to or concern about notifications that require acknowledgement or response.

Such metrics set target (desired) and action limit (mitigate) targets. A readily-accessible chemical industry control room example might set targets like 12 per hour or action limit numbers of 18 per hour, among a significant number of other metrics. We asked at our meeting with Hydro about rates it was experiencing; it took a number of days to collect that information, which came in gross numbers, rather than rates per unit of time. Hydro reported about 50,000 “Sequence of Events” notifications, which include alarms. Raw numbers suggest hourly values in excess of the action limit in our example.

Hopefully alarm sources and numbers will fall as software development continues. Nevertheless, the data available indicates that readiness for operations needs to include the continuing attention to and analysis of alarm and notification sources, numbers, and trends with establishment of targets informed by industry experience to ensure that they remain at levels consistent with circumstances that promote timely and effective operator response. It would be incautious to conclude that they will fall to levels consistent with industry standards and experience. Continued monitoring will examine trends in their numbers and management’s development of the framework and metrics for assessing their potential impacts on operators.

e. Synchronous Condensers

Two Synchronous Condenser units (SC2 and SC3) are available for immediate service. As reported last period, SC1 experienced a bearing failure following adjustments to the lubrication system and subsequent damage to the bearing. The SC1 bearings have now undergone replacement with spares. The damaged SC1 bearings have left the site for repair. Re-assembly of SC1 remains on hold pending tests by GE to determine root causes and whether other units are susceptible to

damage. The return to service date for SC1 is now July 2022. GE has not provided a date for the completion of the root cause analysis.

GE continues to maintain that the elliptical bearing modifications have adequately addressed the SC vibration issue, leaving machines fit for purpose. Hydro has reported that it has not asked its outside experts for an opinion regarding the validity of the elliptical bearing modification as a long term solution to the vibration issues. Steady state vibration levels remain within specification requirements per ISO 7919-5. However, expert analysis of vibration signatures continues to indicate circumstances we first understood to exist last quarter - - specification non-conformances relating to the critical shaft speed, foundation size and resonance.

Hydro plans to continue vibration monitoring during the warranty period and as key operating milestones approach, for purposes of assessing whether it has grounds for further modification or relief. While commercial negotiations may yet provide the only practicable vehicle for addressing the uncertainties involved, it remains important to assess risk and likely consequences of long-term consequences in determining how best to apportion risk and responsibility.

Hydro has described detailed information regarding the underlying issues as confidential due to contractual reasons. It is not clear what monitoring continues with respect to the non-conformances. Circumstances do not provide us with a basis for considering the nature or likelihood of any degradation that might prompt more immediate remedial action, for example, through the occurrence of gross amplitude vibration levels exceeding the applicable the ISO specification requirement. Hydro reported that its outside experts have also expressed uncertainty regarding the potential or timing for material performance issues to arise. Hydro has also reported that its consultants have not been able to gauge the probability of risk to equipment performance. The underlying issues continue, as we reported earlier, to create an unknown, non-quantified risk of long-term implications (*e.g.*, outage rates, repair needs, early unit retirement), whether or not they provide Hydro (on the basis of its current knowledge) a basis for immediate change from the current configuration.

f. HVDC OHL

We reported last quarter that management had completed all repairs required to restore power transfer capability to the LIL overhead transmission line in Labrador and conducted a drone-supported inspection. Repair and inspection work has disclosed no significant issues. Delivery issues have delayed completion of the installation of anti-galloping devices in the southern Labrador spans considered at risk. Management continues its longer-term investigation of the risks of similar exposure at other locations and means for addressing any found across the line's full length, for consideration as part of the overall Reliability and Resource Adequacy Study.

Management plans to secure 24/7 availability of additional road clearing resources to expedite access to repair locations. Management also has under preparation a solicitation designed to secure by this coming October access to resources from an additional line contracting company that can provide power line technicians, engineering expertise, heavy equipment, and tooling to expand resources available to address line failures.

g. Sea Electrode Issues

Tiller Engineering has completed its report, which found the breakwater protecting the L'Anse aux Diabes Electrode Site Sea electrode about one meter lower than needed to address local wind and wave conditions. Several additional recommended studies remain underway, but appear to remain incomplete now just past their scheduled March 2022 completion. This work will inform redesign and modification at the site. Hydro continues to expect completion of construction to an updated design in 2022. We have requested a copy of the applicable reports when available.

We also expressed concern about the remote monitoring to check electrode integrity at hard-to-reach sites. However, we have now received information about the monitoring of the electrode lines and the actual electrodes. The process employed deliberately unbalances the two Poles for short periods of time, to produce larger current flows in the each of the two electrode. Measuring them from the converter stations permits validation of correct functioning.

We expressed concern in our last report about the lack of plans to review design of the Newfoundland-side electrode. Management has now reported efforts underway to select a firm to perform this review. We consider such a review equally essential for reliable operation of the LIL moving forward. We did not find sufficiently cautious management's observation that no damage could have occurred at this electrode site. Without proper study, there can be no confirmation that full parity exists in any of its design, construction, or conditions it may face. We found troubling the lack of attention to date either to validating that threat parity exists between the two sites, or in the absence of such validation, commencing the work needed to assess risk and consequence at the second site. However, we understand that Hydro has underway steps to identify a suitable consultant to perform this work.

Plans to identify a suitable consultant to assess the design of the Newfoundland-side electrode and the external conditions to which it is exposed are moving ahead. However, the process to select a suitable contractor has not yet commenced.

h. Muskrat Falls Generators

Unit 2 had experienced multiple unit trips due to high vibrations during power reductions. The installation contractor completed an interim assessment of the event, and the unit returned to service on October 14, 2021 with operations restrictions (to keep unit operation at a constant 140MW) until investigation and resolution of the vibration issue. Preliminary assessment of the unit indicates that one of the runner blades moves out of alignment with the other runner blades when reducing power. Andritz has further advised Hydro to limit the number of power decreases on unit 2 to 2-4 operations per week, to avoid circumstances applicable in cases of prior vibration level increases. Andritz plans to perform an internal inspection of unit 2 during the upcoming summer shutdown to further determine the cause of the vibration issue. The contractor has not provided a date to complete the root cause analysis of the vibration issues. The root cause analysis will also address the other units' susceptibility to the vibration issues of unit 2.

i. Staffing

Changes to the organization remained under the responsibility of Hydro’s Human Resources organization. The next chart shows vacancies using the current organization structure, alignment, and positions that Human Resources has responsibility for addressing.

Organization Title	Vacancies
Transmission Operations Work Mgmt. and MF	0
Transmission Operations Soldiers Pond	0
Power Supply Production & Energy Marketing	3
Engineering Services	0
Engineering Services Operations Support	0
Engineering Services Project Execution Gen.	0
Eng. Services Business Services	3
Portfolio Asset Mgmt.	0
Totals	6

Five operations’ apprentices have completed the two-year apprenticeship program and Hydro has placed them into full time operator roles. Manitoba Hydro continues to provide ongoing support to the operators. Hydro reports the two previously open positions in the Soldiers Pond Transmission Operations area as now filled. We continue to not find the vacancy numbers unusual or troubling.

j. Training

Last period six training sessions remained outstanding, consisting of two sessions for the load management systems, two for the fire and protection systems, and two re-runs of the turbine and generator sessions. The fire protection and fire detection training are now complete as are the turbine and generator sessions. Plans call for combining the two load management (ATS/LMS) training sessions into one course for delivery at the site.

k. Procedures

All O&M manuals are complete with 3 manuals under review and 27 manuals under review with the contractor.

l. Emergency Response

Management established an interim operations emergency response model in the fourth quarter 2021 and awarded a contract to a consultant to supplement the volunteer team. At present, two resources exist for 24/7 support and a team coordinator provides support for 10 hours per day on a five day per week basis. The long term goal remains to fully staff the ER function with volunteers and phase out the contractor support. Schedules call for completion of all ER standard operating guidelines by April-end 2022.

m. O&M Contracts

All 56 transmission O&M contracts included in the TTO plan are complete and turned over to operations. Sixty of the 61 generation O&M service contracts are complete, with the Andritz O&M Services Agreement remaining open.

Management has combined the previously open SCADA Systems Support Contract into the one remaining open contract, the Andritz O&M Services Agreement and the previously open Site Reclamation/Spare Consolidation Contract is complete.

n. Emera Agreements

One activity, the Regulation Service Agreement remains open - - scheduled for completion in the first quarter 2023.

o. MPPA/IOA Progress

An executed IOA is necessary to ensure the ability for imports to Labrador through Hydro Quebec or to support exports from Labrador. The expected date for execution has slipped again, with the cited reasons leading us to conclude that no meaningful date for completion exists. Management still describes the remaining activities as primarily drafting ones that present no material threat of lost economy through inability to import or export to or through Hydro Quebec in the near-term. Potential sources of growth in electricity use in Labrador, however, do have the ability to have a material impact on energy and capacity resources after the next year or so.