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November 18, 2015

The Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL A1A 5B2

Attention: Ms. Cheryl Blundon
Director Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: The Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnection System – Winter Readiness Planning Status Update

Further to the Board's correspondence of October 8, 2015, please find enclosed the original plus 12 copies of Hydro's November 15, 2015 status update to its report filed with the Board on September 30, 2015 regarding 2015-16 Winter Readiness Planning.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Geoffrey P. Young
Senior Legal Counsel

GPY/bs

cc: Gerard Hayes – Newfoundland Power
Paul Coxworthy – Stewart McKelvey Stirling Scales
Sheryl Nisenbaum – Praxair Canada Inc.
ecc: Roberta Frampton Benefiel – Grand Riverkeeper Labrador
Thomas Johnson – Consumer Advocate
Thomas O' Reilly – Cox & Palmer
Danny Dumaresque

Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System

An Update to the Board of Commissioners of Public Utilities Regarding 2015-16 Winter Readiness Planning As Of November 15, 2015

November 18, 2015

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APPENDICES

1.0 BACKGROUND AND INTRODUCTION

This Report is in response to a request by the Board of Commissioners of Public Utilities (the Board) in its letter dated October 8, 2015 that Newfoundland and Labrador Hydro (Hydro) provide updates to its September 30, 2015 report regarding winter readiness planning for the 2015-16 winter season. That Report addressed the following items as requested by the Board in its letter of September 11, 2015:

1. The status of Annual Work Plan (AWP) items for Hydro's generating plants and transmission and terminal stations, including the completion date; outstanding items to complete; and any risks to completion or as a result of failure to complete;

2. A description and schedule for all outstanding 2015 capital projects for Hydro's generating plant and transmission and terminal stations, including progress on completion status to date and expected completion date;

3. The identification of all equipment and plant testing to be carried out in advance of the winter period, including progress on completion status to date;

4. The planned generation outage schedule for the period September to December 31, 2015, including an explanation for any planned outages extending beyond December 1, 2015;

5. An update of critical spares assessment and procurement;

6. The forecast loads and expected generation capacity and reserves (setting out the basis for calculation) for the upcoming winter, as of December 1, 2015, and including capacity assistance agreements in place or planned; and,

7. An identification of any risks that could impact the winter readiness of assets as of December 1, 2015 and associated contingency plans.

The Board has further requested that the updates to Hydro's September 30, 2015 Report include a description and status update on the 2015 maintenance activities related to the new Combustion Turbine at Holyrood, as well as the progress of the recently approved engine refurbishment project at the Hardwoods gas turbine facility.

2.0 ANNUAL WORK PLAN STATUS

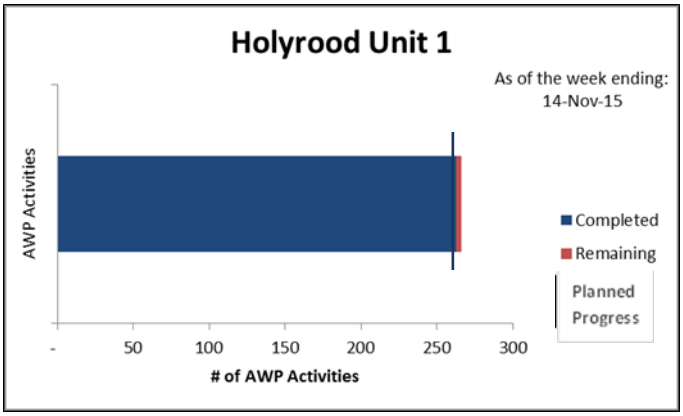
This Update produces a consolidated summary of actual AWP progress versus plan as of the week ending November 15, 2015 for each of the following areas of operations:

1) Holyrood Thermal Generating Station
    a. Units 1, 2 and 3
    b. Balance of Plant
2) Gas Turbines
    a. Hardwoods
    b. Stephenville
3) Hydraulic Generation
    a. Bay D'Espoir
    b. Cat Arm
    c. Hind's Lake
    d. Paradise River
    e. Upper Salmon
    f. Granite Canal
4) Transmission and Rural Operations
    a. Transmission
    b. Terminal Stations

A text box to the right of each chart below indicates Hydro's forecasted completion status as of December 1, 2015 in relation to AWP winter readiness activities (Green/On Target, Yellow/ Caution, Recovery Required, Red/Target Will Not be Fully Met). Relevant highlights are also provided.

2.1 AWP Status: Holyrood Thermal Generating Station

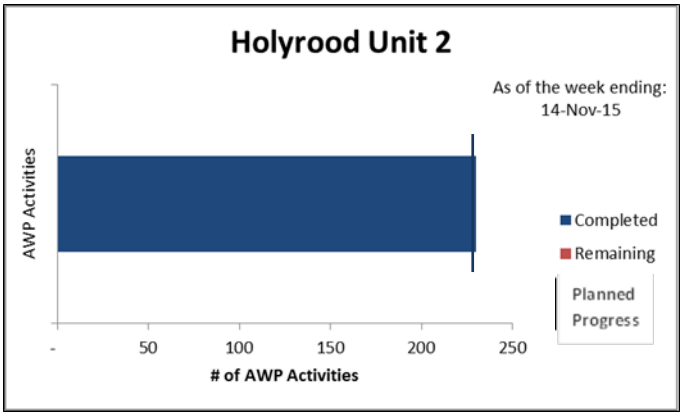
The status of AWP execution at Holyrood is summarized in the charts below. As noted, the 2015 Annual Work Plan at Holyrood is substantially complete, and all remaining work is on schedule for completion by December 1, 2015.



Forecast Completion Status (R/Y/G): Green

Comments and Schedule:

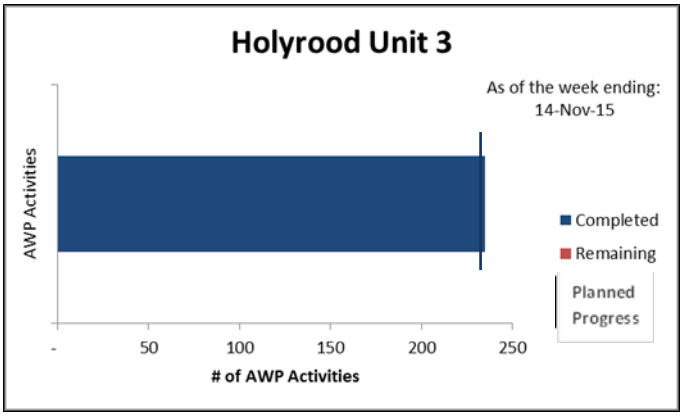
- Planned maintenance outage is complete.
- Overall program completion is 98% to date.
- The remaining items are related to online testing and will be dependent on load availability from the Energy Control Centre.



Forecast Completion Status (R/Y/G): Green

Comments and Schedule Notables:

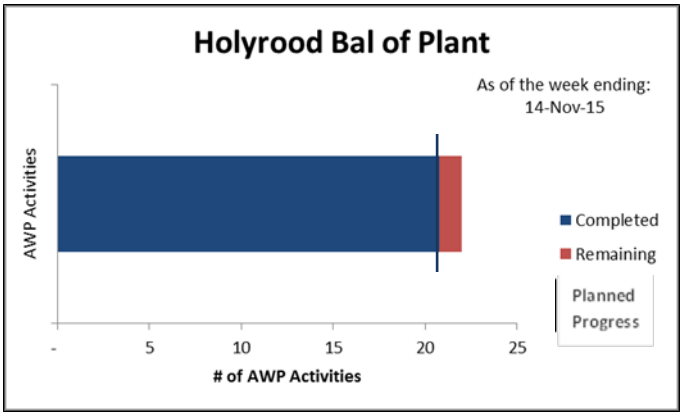
- Planned maintenance outage is complete.
- Overall program completion is 100% to date.



Forecast Completion Status (R/Y/G): Green

Comments and Schedule Notables:

- Planned maintenance outage is complete.
- Overall program completion is 100% to date.



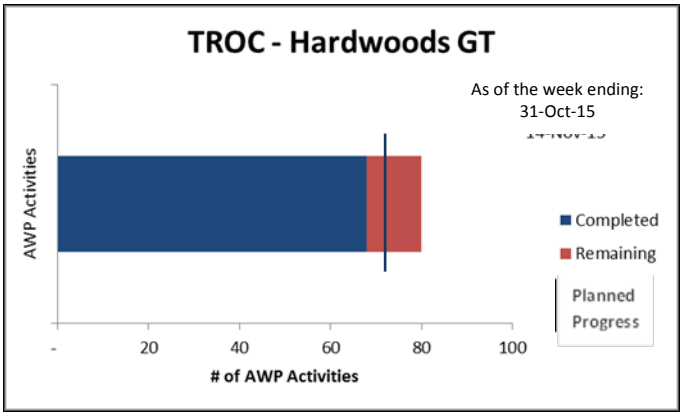
Forecast Completion Status (R/Y/G): Green

Comments and Schedule Notables:

- Overall program completion is 95% to date.
- Remaining items are related to online preventative maintenance activities.
- Planned work is on schedule for successful completion.

2.2 AWP Status: Gas Turbines

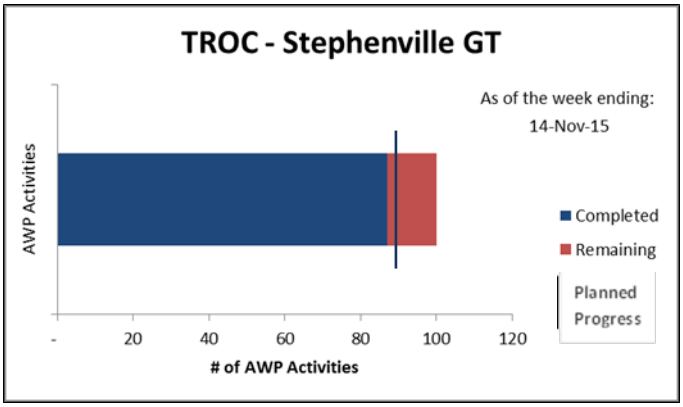
The current status of AWP execution at the Hardwoods and Stephenville gas turbines is summarized in the charts below. AWP execution at Hardwoods is somewhat behind plan, however the completion status of maintenance work that is specifically related to winter readiness is close to plan at both facilities. Subject to any unforeseen factors that have an impact on the re-installation and in-service date of the End B engine at Hardwoods, Hydro expects that all planned 2015 winter readiness work will be completed by December 1.



Forecast Completion Status: (R/Y/G): Green

Comments and Schedule Notables (e.g. ahead, behind, recovery plan):

- YTD progress relative to plan is 92%; 68 of 74 planned activities have been completed.
- Remaining capital work (engine refurbishment) is expected to be complete by November 30.
- Expect all winter readiness activities to be completed by December 1 (18 of 20 planned activities completed to date).



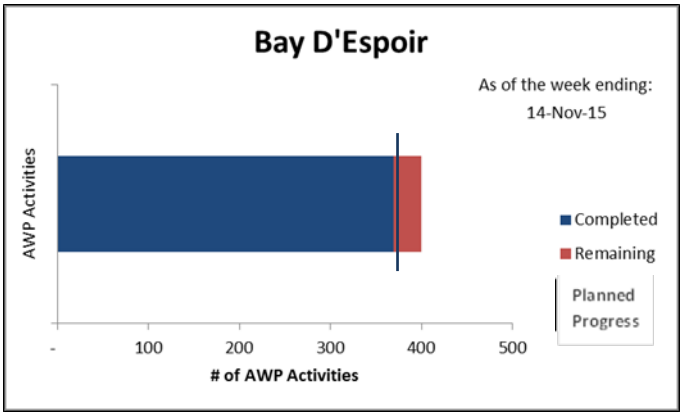
Forecast Completion Status (R/Y/G): Green

Comments and Schedule Notables (e.g. ahead, behind, recovery plan):

- YTD progress relative to plan is 97%; 87 of 90 planned activities completed.
- Planned capital work is complete.
- Expect all winter readiness activities to be completed by December 1 (35 activities completed vs. plan of 34).

2.3 AWP Status: Hydraulic Units

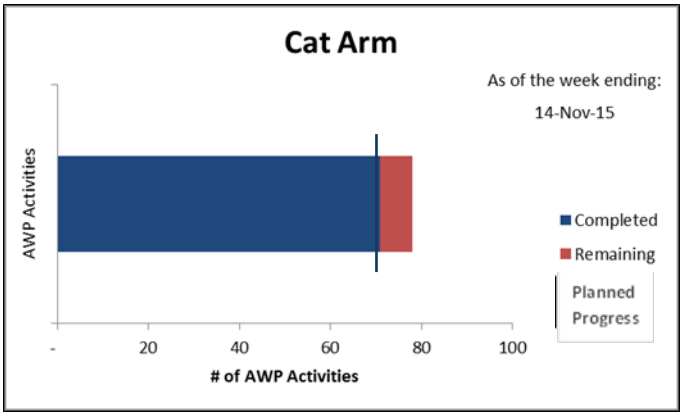
The current status of AWP execution at Bay d'Espoir (BDE) and other hydraulic generation facilities is summarized in the charts below. As noted, it is expected that all planned 2015 AWP work will be completed by December 1, 2015. Since Hydro's update to the Board on November 4, the maintenance outage on Unit 4 was extended by a week, and this outage is expected to conclude during the week ending November 21.



Forecast Completion Status (R/Y/G): Green

Comments and Schedule Notables:

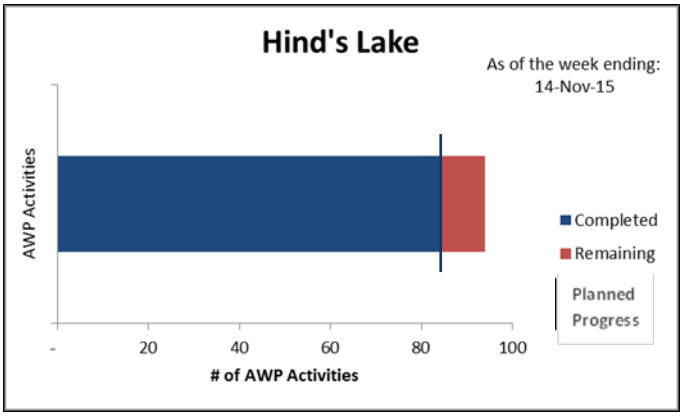
- All planned unit outage maintenance has been completed; the Unit 4 is extended to November 19 to accommodate breaker replacements by TRO.
- Overall program completion status, including work in progress, is 95%.
- Remaining work is on schedule for successful completion by December 1.



Forecast Completion Status (R/Y/G): Green

Comments and Schedule Notables:

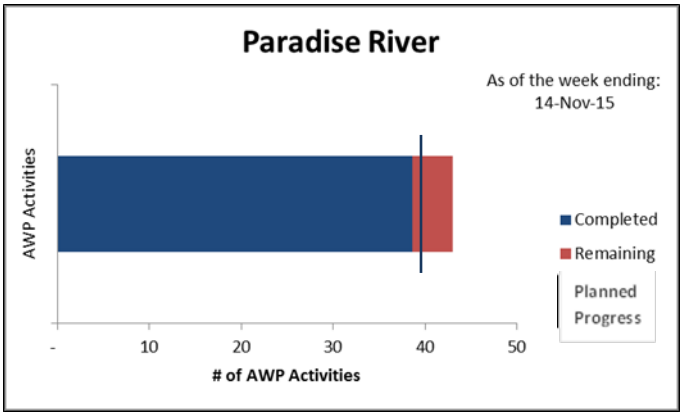
- All planned unit outage maintenance has been completed.
- Overall program completion status, including work in progress, is 91%.
- Remaining work is on schedule for successful completion by December 1.



Forecast Completion Status (R/Y/G): Green

Comments and Schedule Notables:

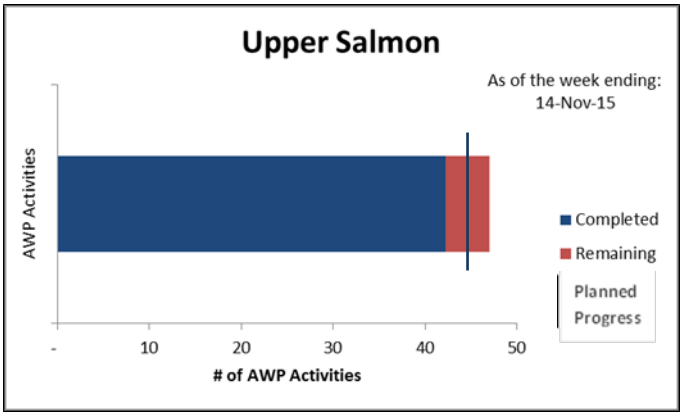
- All planned unit outage maintenance has been completed.
- Overall program completion status, including work in progress, is 98%.
- All planned work is on schedule for successful completion by December 1.



Forecast Completion Status (R/Y/G): Green

Comments and Schedule Notables:

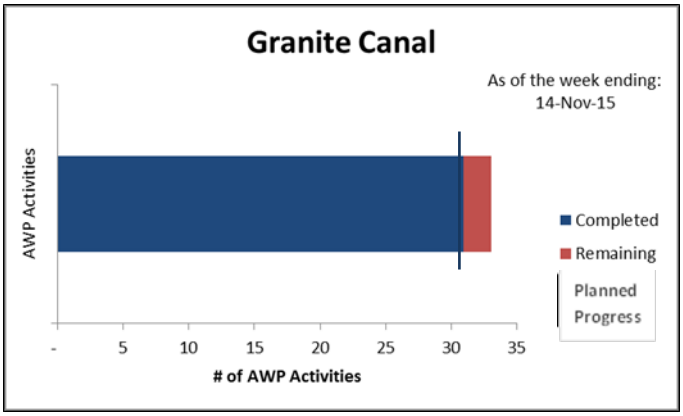
- All planned unit outage maintenance has been completed.
- Overall program completion status, including work in progress, is 98%
- Remaining work is on schedule for successful completion by December 1.



Forecast Completion Status (R/Y/G): Green

Comments and Schedule Notables:

- All planned unit outage maintenance has been completed.
- Overall program completion status, including work in progress, is 93%.
- Remaining work is on schedule for successful completion by December 1.



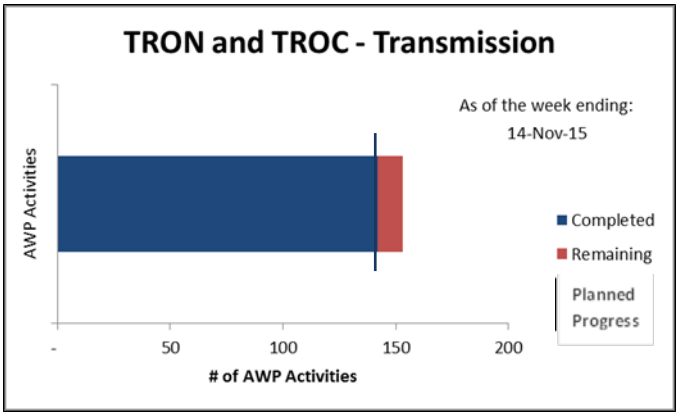
Forecast Completion Status (R/Y/G): Green

Comments and Schedule Notables:

- All planned unit outage maintenance has been completed.
- Crew scheduled on site the week of Nov 16-20 for trash removal at the intake and work at the By-pass.
- Overall program completion status, including work in progress, is 94%.
- All planned work is on schedule for successful completion by December 1.

2.4 AWP Status: Transmission and Terminal Stations

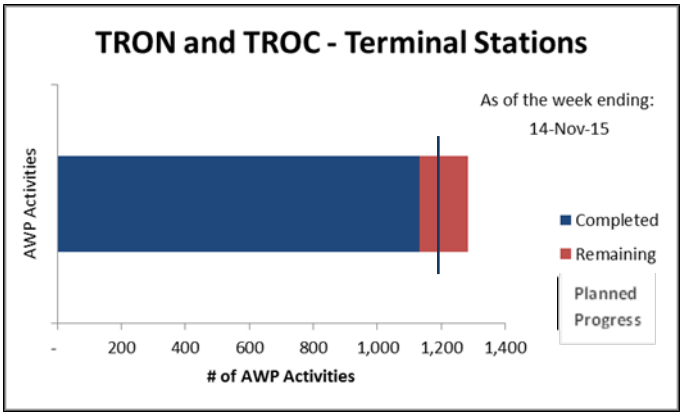
The current status of AWP execution in Transmission and Rural Operations (TRO) for both transmission equipment and terminal station facilities on the IIS is summarized in the charts below. As noted in Section 4.3, it is expected that all activities specifically related to winter readiness will be completed by December 1, and all remaining AWP activities will be completed by December 18.



Forecast Completion Status (R/Y/G): Green

Comments and Schedule Notables:

- Overall completion status relative to plan is 99%; 142 of 143 planned activities are complete.
- Expect all planned winter readiness activities to be completed by December 1.



Forecast Completion Status (R/Y/G): Green

Comments and Schedule Notables:

- Overall completion status relative to plan is 93.4%; 1132 of 1212 planned activities are complete.
- Battery discharge testing, distribution recloser PMs, and relay meter maintenance behind schedule. Increased resources are being redeployed with a priority focus on critical winter readiness work.
- Expect all planned winter readiness activities to be completed by December 1.

3.0 STATUS OF WINTER READINESS CAPITAL PROJECTS

Appendix A of this Report identifies the 2015 capital projects which include scope related to 2015-16 winter readiness. Table 3.1 below summarizes the current status of the winter readiness components of these projects by asset category.

TABLE 3.1
2015 Projects Related to Winter Readiness

Asset Category	Complete	Outstanding	Total
Thermal Generation	14	1	15
Hydraulic Generation	6	1	7
Gas Turbines	1	1	2
Transmission	1	0	1
Terminal Stations	12	4	16
Distribution	5	1	6
Various (Critical Spares)	0	1	1
			48

One of the projects included in this group is a supplemental project which was approved in September, 2015 relating to the replacement of two excitation transformers at Holyrood. These transformers have been ordered, delivery is expected in January, 2016, and they will be available on site during the winter period in the unlikely event of an in-service failure prior to planned replacement. The timing of installation will depend on the availability of a Holyrood generating unit outage window. Installation will therefore be planned following the winter peak demand period.

The completion of outstanding projects in accordance with the schedule indicated in Appendix A is contingent on several factors which have the potential to change completion dates. For example, if any of the projects which are dependent on generator or line outages encounters a delay this could have a knock-on effect on the completion of other projects which are also generator or line outage dependent. Such issues are not anticipated at the present time, but

in the meantime all such potential risks have been identified, and associated contingency/mitigation plans have been developed, consistent with Hydro's project execution processes and standards.

3.1 Engine Refurbishment – Hardwoods Combustion Turbine

A fire at the Hardwoods gas turbine facility on March 1, 2015 resulted in damage which has necessitated an overhaul of the End B turbine. This work was initiated immediately upon receipt of the Board's approval of this project on October 1, 2015. The engine has since been refurbished at the contractor's repair facility and engine performance tests were successfully completed on November 17. The engine is scheduled to arrive at the Hardwoods site for installation during the week of November 23, and the current return to service date is November 30, 2015.

3.2 Unit Service Transformer for Unit 3 – Holyrood

The Unit Service Transformer for Unit 3 at Holyrood Thermal Generating Station, critical for Holyrood Unit 3 to reliably supply electricity to the Island Interconnected System, was exhibiting gassing and required an immediate inspection and potential repair. This project has commenced using the Allowance for Unforeseen, as per the notification to the Public Utilities Board on November 12, 2015. Hydro has made arrangements with a transformer representative to complete an inspection, and to be ready for potential typical repairs that address this type of gassing.

The work associated with this inspection started on November 17, 2015 and is currently ongoing. An initial report from the transformer representative on November 18 was that the off load tap changer is showing signs of over-heating (which is the source of the gassing) and will need to be bypassed. This bypass work, along with the necessary transformer refilling and testing, is planned to be complete by November 20, 2015.

3.3 Transformer T5 Tap Changer – Western Avalon Terminal Station

Hydro anticipates an additional project under the Allowance for Unforeseen for the replacement of the tap changer on Transformer T5 at Western Avalon Terminal Station, which

experienced an internal fault on November 8, 2015. The appropriate notification was submitted to the Board on November 16, 2015.

On the basis of two external assessments conducted by ABB and CG Power Systems Hydro has determined that the Western Avalon T5 transformer will be fit for return to service following the completion of the necessary tap changer repairs. At this point, Hydro expects that these repairs can be completed, and the T5 transformer placed back into service, in December.

4.0 PLANT AND EQUIPMENT TESTING

4.1 Thermal Generation

Winter readiness testing of generating equipment in Thermal generation is focused primarily around annual unit maintenance outages. Following annual outages, units are run up, synchronized, and all systems are verified before operating status is determined and preparedness is confirmed. Unit load tests are performed at this time as well.

The winter readiness testing protocol includes the testing of appropriate Balance of Plant components as well.

The current status of equipment/plant testing for Thermal Generation is indicated in Appendix B of this Report. Consistent with the generation outage schedule shown in Appendix D, it is expected that all winter readiness testing will be completed by December 1, 2015.

4.2 Hydraulic Generation

Winter readiness testing of generating equipment and balance of plant in Hydraulic Generation is completed using the same process as for Thermal Generation as described in section 4.1 above.

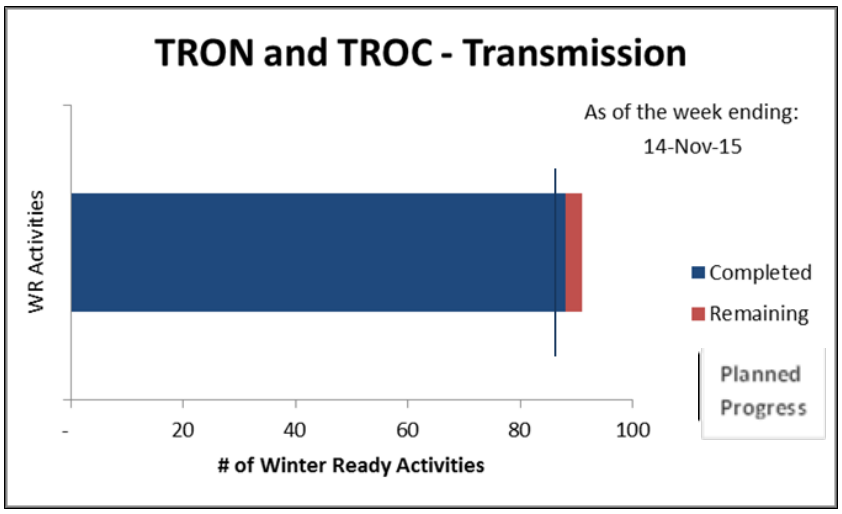
The current status of equipment/plant testing for Hydraulic Generation is indicated in Appendix C of this Report. Consistent with the generation outage schedule shown in Appendix D, it is expected that all winter readiness testing will be completed by December 1, 2015.

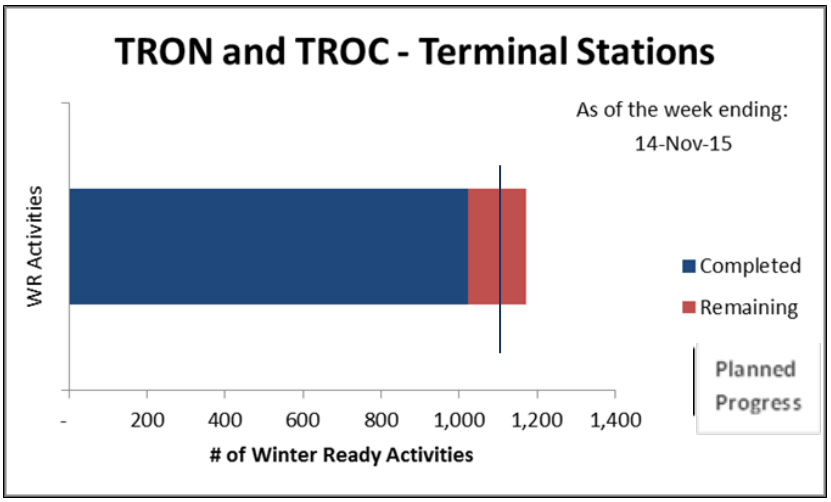
4.3 Transmission and Terminal Stations

AWP charts which include winter readiness activities only are shown below to indicate the year-to-date status of winter readiness equipment testing in Transmission and Terminal Station operations. The Transmission chart confirms that progress to date is slightly ahead of plan, and it is expected that all winter readiness activities will be completed by December 1.

The Terminal Stations chart indicates that year-to-date completion status is somewhat behind schedule. As noted earlier in Section 2.4, increased resources are being deployed within

extended hours to ensure the completion of critical winter readiness activities in relation to battery discharge testing; recloser maintenance; and relay meter maintenance. These three projects are still targeted for completion by December 1.





4.4 Gas Turbines

As of November 15, 2015 the completion status at Hardwoods on winter readiness AWP activities was 90% of plan, and the completion status at Stephenville was 103% of plan. While there has been some recovery of the planned activities in Hardwoods, completion status remains a little behind. It is expected that the remaining activities will be completed in the next two weeks and, as indicated in Section 2.2, it is expected that all work related to winter readiness testing will be completed by December 1, 2015. Black start testing has been

completed for the Holyrood CT and is scheduled to be completed for the Hardwoods and Stephenville CTs by December 1.

4.4.1 2015 Maintenance Program – New Combustion Turbine at Holyrood

As noted in its winter readiness update of November 4, 2015, Hydro has made good year-to-date progress in the execution of its 2015 maintenance program for the new Holyrood CT. In addition, under its Technical Service Agreement with the CT vendor, ProEnergy maintains a full-time, on-site presence in support of Hydro's operation and maintenance of this new asset.

Due to operational requirements, no appreciable progress has been made against the remaining planned maintenance activities in the last two weeks. These activities are now planned for the upcoming weeks and it is expected that all critical maintenance work will be completed by December 1. It is Hydro's current plan to schedule a short duration outage during the week starting November 22 to complete those preventative and corrective maintenance activities which require a plant outage. In addition, all non-outage maintenance required for winter readiness is expected to be completed by December 1, subject to operational circumstances which may necessitate the ready availability or operation of this facility to meet system operations requirements.

5.0 GENERATION OUTAGE SCHEDULE

Hydro's 2015 Master Generation Outage Schedule for the period September 1 to December 31, 2015 was presented in its September 30, 2015 Winter Readiness Planning report to the Board. For the purposes of this Update Report this Schedule has been updated to reflect only those unit outages that were completed or are planned for completion in November, and it is attached to this Report as Appendix D. This Schedule does not currently contemplate any planned generation outages beyond the week starting November 22, 2015 and it is expected that all generation assets will be fully available as of December 1, 2015.

The only change from the outage schedule included with Hydro's November 4, 2015 winter readiness update is that the outage on Unit 4 in Bay d'Espoir was extended by a week. That outage is scheduled to conclude during the week ending November 21.

As noted in Section 4.4.1 above, subject to operational requirements a short duration outage on the Holyrood CT is currently being planned during the week starting November 22. This will enable the completion of outage dependent winter readiness maintenance activities.

6.0 CRITICAL SPARES

As noted in its previous updates, Hydro's critical spares status leading into the 2015-16 winter season will be very strong. Hydro continues to expect its in-stock status as of December 1, 2015 to meet or exceed 96%.

Changes in critical spares status are briefly highlighted below. Detailed critical spares lists have not been included with this update report, but are available to the Board if required. Hydro will supply updated lists with its winter readiness update due on December 3, 2015.

Thermal Generation

There has been no change in the status of critical spares for Thermal Generation since Hydro's November 4 update to the Board.

Combustion Turbines (CTs)

One of the "On Order" parts indicated in Hydro's November 4 winter readiness update has been received and is now in stock. The expected delivery dates for all other "On Order" parts are now earlier than previously indicated and have since been revised to either November 20 or December 8, 2015.

The only other change in status is that one part previously indicated as "Re-engineering Required" (PS-LO-1) has been removed from the critical spares list. It has been confirmed that this part is no longer installed on the Stephenville CT and is therefore not required as a spare.

Hydraulic Generation

Since Hydro's November 4 update one "On Order" item has been moved into stock, and one item indicating "Engineering Required" has also been moved into stock. The expected delivery dates for all other spares indicated as "On Order" in Hydro's November 4 update have been revised slightly, with none showing a date later than December 15, 2014.

7.0 FORECASTED LOADS, CAPACITY AND RESERVES

Hydro's forecasts of peak load, capacity, and reserves for the 2015-16 winter season have not changed since Hydro's October 31, 2015 update report. Table 7.1 from that Report has been re-produced below. Hydro's forecasts continue to assume that the Holyrood black start diesels will be available in their current 10 MW configuration as of December 1, 2015.[1]

TABLE 7.1
Forecasts of Peak Load, Capacity and Reserves – 2015-16

		Sept 30 Report		October 30 Update	
A	IIS Peak Load – P50	1,758 MW		1,736 MW	
B	IIS Peak Load – P90	1,815 MW		1,793 MW	
C	Capacity at Peak	2,008 MW		2,008 MW	
D	Add: Voltage Reduction (+20 MW)	2,028 MW		2,028 MW	
E	Add: Capacity Assistance (+93 MW)	2,121 MW		2,121 MW	
	Reserves (E-B)	306 MW	16.9%	328 MW	18.3%

[1] Hydro is currently preparing an application for the purchase of the black start diesels at Holyrood. Hydro anticipates submission of this application in November.

8.0 RISKS AND RISK MITIGATION

The preceding Sections of this Update Report indicate that Hydro's readiness planning for the 2015-16 winter season continues to be on track, and Hydro is confident that it will be fully ready in terms of generation and transmission availability by December 1, 2015.

As outlined in Section 2.0, overall AWP execution has been tracking well relative to plan, and while there are selected areas where progress to date is somewhat behind, Hydro expects that all winter readiness maintenance work will be completed by December 1. Similarly, as noted in Section 3.0 and in Appendix A, Hydro's 2015 winter readiness capital work is substantially complete, and with the exception of two projects identified in previous updates, all remaining work is on schedule for completion by December 1, 2015. Finally, as noted in Section 4.0, the winter readiness testing of plant and equipment in both Generation and Transmission operations has either been completed or is expected to be complete by December 1.

From a risk standpoint, the projects within the remaining scope of winter readiness maintenance and capital work that are the most vulnerable to a change in status over the next two weeks are identified below. Hydro emphasizes that no issues are foreseen at this time, but the final stages of these projects will be carried out within tight timelines that will consume all available schedule flexibility over the period leading up to December 1. Any unforeseen problem will have the potential for delaying final project completion.

a) End B Turbine, Hardwoods CT (see Section 3.1)
b) T1 transformer at Hardwoods (relocation from Oxen Pond; see Note 14 in Appendix A)
c) Circuit breaker upgrades at Holyrood and Bay d'Espoir (see Note 12A in Appendix A)

In Section 4.4.1 Hydro notes its expectation that all planned winter readiness work on the new Holyrood CT will be completed by December 1. A number of the outstanding maintenance activities will require a relatively short outage window in order to complete the required work, and this outage is currently planned during the week starting November 22. Weather and operational requirements may dictate the availability and duration of this outage, and the

outage-dependent maintenance work will be prioritized and organized with this in mind so that the Holyrood CT can be expediently returned to service if that is required for operational reasons.

APPENDIX A

Status of 2015 Capital Projects Related to Winter Readiness
As of November 15, 2015

2015-16 Winter Readiness Planning Report

Asset Category	Project Title	Expected In Service Date (for 2015 Winter Readiness Scope) **September 30 Update**	Expected In Service Date (for 2015 Winter Readiness Scope) **October 31 Update**	Expected In Service Date (for 2015 Winter Readiness Scope) **November 15 Update**
Distribution	Upgrade Distribution System - Hampden	Complete	Complete	Complete
Distribution	Upgrade Distribution Systems - Various Sites (2015/2016)	20-Oct-15	15-Nov-15 Note 6	Complete
Distribution	Upgrade L1 Distribution System - Plum Point	Complete	Complete	Complete
Distribution	Upgrade Distribution System - Main Brook	14-Oct-15	Complete	Complete
Distribution	Upgrade Distribution System - Daniels Harbour	26-Nov-15	15-Nov-15	22-Nov-15 Note 16
Distribution	Relocate Voltage Regulator - Hawkes Bay	Complete	Complete	Complete
Gas Turbine	Upgrade Gas Turbine Plant Life Extension - Stephenville	16-Oct-15	13-Nov-15 Note 4	Complete
Gas Turbine	Gas Turbine Engine Refurbishment - Hardwoods		30-Nov-15 Note 7	30-Nov-15 Note 7A
Hydraulic	Overhaul Turbine/Generator Units - Paradise River	Complete	Complete	Complete
Hydraulic	Overhaul Turbine/Generator Units - Bay d'Espoir	Complete	Complete	Complete
Hydraulic	Replace Station Service Breakers - Cat Arm	Complete	Complete	Complete
Hydraulic	Replace ABB Exciter Unit 2 - Cat Arm	Complete	Complete	Complete
Hydraulic	Excitation Transformers Replacement - Bay D'Espoir	7-Nov-15 - Note 1	15-Nov-15 - Note 1A	18-Nov-15 Note 1B
Hydraulic	Replace Generator Bearing Coolers - Bay D'Espoir	24-Oct-15	Complete	Complete
Hydraulic	Replace 125VDC Battery Bank - Paradise River (Hydraulic)	15-Oct-15	Complete	Complete
Terminals	Upgrade Power Transformers - Various Sites	8-Nov-15	01-Dec-15 Note 3	Complete
Terminals	Replace Pumps on Mobile Transformer P235 - Bishop's Falls	Complete	Complete	Complete
Terminals	230kV Transformer Capacity - Oxen Pond	19-Nov-15	19-Nov-15	29-Nov-15 Note 14
Terminals	Upgrade Circuit Breakers - Various Sites (2014-2015)	13-Nov-15	13-Nov-15	Complete
Terminals	Replace Disconnect Switches - Various Sites (2014-2015)	Complete	Complete	Complete
Terminals	Replace Optimho Relays on TL203 - Western Avalon to Sunnyside	Complete	Complete	Complete
Terminals	Transformer T1 Replacement - Sunnyside	Complete	Complete	Complete
Terminals	Upgrade Circuit Breakers - Various Sites (2015-2016)	27-Nov-15	15-Nov-15 Note 12	19-Nov-15 Note 12A
Terminals	Replace Disconnect Switches - Various Sites (2015-2016)	27-Oct-15	Complete	Complete
Terminals	Replace Instrument Transformers - Various Sites	9-Oct-15	Complete	Complete
Terminals	Replace Insulators - Various Sites	24-Oct-15	18-Nov-15 Note 8	18-Nov-15
Terminals	Replace Surge Arrestors - Various Sites	20-Oct-15	13-Nov-15 Note 9	Complete
Terminals	Upgrade Transformer Differential Protection - Grandy Brook	Complete	Complete	Complete
Terminals	Upgrade Control Wiring Phase 1 to Terminal Station 1 - Bay d'Espoir	7-Oct-15	Complete	Complete
Terminals	Replace Valve - Breaker B12L42 - Holyrood	Complete	Complete	Complete
Terminals	Unit Service Transformer for Unit 3 - Holyrood			24-Nov-15 Note 15
Thermal	Purchase of Critical Spares - Holyrood	Complete	Complete	Complete
Thermal	Overhaul Extraction Pumps - Unit 3 South - Holyrood	Complete	Complete	Complete
Thermal	Overhaul Extraction Pumps - Unit 1 North - Holyrood	31-Oct-15	13-Nov-15 Note 10	Complete
Thermal	Overhaul Turbine Valves Unit 1 - Holyrood	31-Oct-15	Complete	Complete
Thermal	Overhaul Boiler Feed Pump East Unit 1 - Holyrood	31-Oct-15	Complete	Complete
Thermal	Replace Economizer Inlet Valves - Holyrood	Complete	Complete	Complete
Thermal	Install Cold-Reheat Condensate Drains and High Pressure	Complete	Complete	Complete
Thermal	Replace Unit 1 Air Compressor - Holyrood	Complete	Complete	Complete
Thermal	Replace DC Distribution Panels and Breakers - Holyrood (2015)	Complete	Complete	Complete
Thermal	Install Variable Frequency Drives on Forced Draft Fans - Holyrood	5-Oct-15	Complete	Complete
Thermal	Upgrade Vibration Monitoring System - Holyrood	Complete	Complete	Complete
Thermal	Replace DC Distribution Panels and Breakers - Holyrood (2014)	30-Oct-15	Complete	Complete
Thermal	Upgrade Quarry Brook Dam Equipment - Holyrood	Complete	Complete	Complete
Thermal	Replace Excitation Transformers - Holyrood	31-Jan-16 - Note 2	31-Jan-16	31-Jan-16 - Note 2A
Diesel Generation	Replace Fuel Tanks - St. Anthony		Complete Note 11	Complete
Transmission	Perform Wood Pole Line Management Program - Various Sites	9-Oct-15	13-Nov-15 Note 5	Complete
Various	Purchase Critical Spares - Generating Stations	30-Nov-15	Note 13	Note 13 (no change)

Notes

1	The transformers for 5 of the 7 units at Bay d'Espoir are in service. The remaining two transformers are on site and scheduled to be installed during planned outages.
1A	The transformers for 6 of the 7 units at Bay d'Espoir are in service. The remaining transformer has been installed and will be commissioned at the end of the Bay d'Espoir Unit 4 planned outage, as the generating unit is brought on line.
1B	The commissioning activity has been rescheduled three days later, in accordance with the updated Master Outage Schedule.
2	This is a supplemental project approved in September. The excitation transformers have been ordered and expected delivery is January 2016.
2A	This project continues to track with compliance to the original schedule, with expected delivery of the transformers in January 2016 and installation during planned outages in Q2 and Q3 of 2016.
3	This project includes condition assessment and refurbishment work for a number of transformers. A portion of that work has been rescheduled into November 2015. All transformers are anticipated to be winter ready.
4	During removal of the clutch as part of project scope it was discovered that the bearings were in need of repair. The original equipment manufacturer recommended that the bearing liners be replaced. Fabrication of the new bearing liners led to a 3 week delay in the project. The new bearing liners have been received and installation is in progress.
5	The winter readiness scope in this project is substantially complete. The scope included the replacement of 50 wood poles, of which 47 are complete. Three pole replacements on TL222 were rescheduled to coincide with an outage in Springdale to replace a breaker.
6	This project includes distribution upgrades at three locations in 2015. Two are complete. Completion at the third location has been delayed due to materials issues with new insulators. These issues have been cleared and the new scheduled completion date is Nov 15.
7	This is a supplemental project approved in October. The engine is currently at the repair facility. Refurbishment is in progress and on schedule for return to site, installation and release for service on November 30.
7A	The engine is currently at the test facility. Testing is in progress and the overall project is on schedule for return to site, installation and release for service on November 30.
8	This project includes the replacement of 54 insulators in 2015, of which 39 are complete. The remaining 15 insulators will be installed in Holyrood Terminal Station. This work has been rescheduled to November per the revised Master Outage Schedule.
9	This project includes the replacement of 6 surge arrestors in 2015, of which 5 are complete. The remaining surge arrestors will be installed during a Nov 9-13 outage.
10	Following disassembly and inspection of the pump, unanticipated extensive damage was found on the third stage impeller. Hydro shipped one of the stocked spares on hand at Holyrood's warehouse to the repair facility in Ontario. The discovery of the damage as well as the shipment time of the replacement impeller added approximately 10 days to the schedule. The pump has been reassembled and is on route to Holyrood.
11	This is a supplemental project under $50k, approved in October, and now in service.
12	This project includes five breaker replacements in 2015, of which four are complete (Hardwoods B1LO1, Bay d'Espoir B1T2, Sunnyside B1LO2, and Sunnyside B1T1). The final breaker to be installed in 2015 is Bay d'Espoir B2T4, scheduled during an outage in November.
12A	The construction activity for the final breaker is complete. Final acceptance testing and commissioning activity is in progress. The in-service date has been extended by four days as a result of an adjustment to the function testing and commissioning plan.
13	This is a supplemental project approved in late July 2015 for the procurement of spares for 12 critical components. Most of the components have been received or are expected to be received in November and December 2015. Some of the components have longer lead times, with delivery expected in 2016. Details are reported in the critical spares reports and are summarized as follows: (1) A spare steam seal regulator dump control valve cage for Holyrood has been ordered with expected delivery in November 2015. (2) The high voltage bushings for Holyrood Units 1 and 2 have been received. The high voltage bushings for Unit 3 have a longer lead time and will not be available until late 2016. As a risk mitigation, Hydro is investigating the viability of reverse engineering the existing bushings during the next Unit 3 outage. (3) A spare set of generator bearing coolers for Cat Arm has been ordered with expected delivery in December 2015. This is replacing an existing, used spare set of coolers. The existing spare coolers have been re-gasketed and could be used as an emergency replacement, in the unlikely event of failure prior to receipt of the new spare coolers. (4) The existing spare turbine bearing for Hinds Lake is being refurbished with expected delivery in December 2015. Bearing vibration and temperature data has been reviewed and meets acceptance criteria for reliable operation. The in-service turbine bearing is winter ready. (5) The existing spare turbine bearing for Bay d'Espoir Unit 7 is being refurbished with expected delivery in February 2016. Bearing vibration and temperature data has been reviewed and meets acceptance criteria for reliable operation. The in-service turbine bearing is winter ready. (6) A spare deflector servomotor for Cat Arm has been ordered with expected delivery in April 2016. This is replacing an existing, used spare servomotor which is no longer in reliable condition. The existing in-service servomotors have been inspected and confirmed to be winter ready. Weekly visual inspections for leakage will continue through the winter operating period, and seal kits are available for any necessary repairs. (7) Spare combustion chambers for Hardwoods and Stephenville Gas Turbines are being refurbished with expected delivery in December 2015. (8) Spare high pressure fuel pump assemblies for Hardwoods and Stephenville Gas Turbines have been ordered with expected delivery in December 2015. (9) Spare low pressure fuel pump assemblies for Hardwoods and Stephenville Gas Turbines have been ordered with expected delivery in December 2015. (10) A spare alternator bearing for Hardwoods Gas Turbines has been ordered with expected delivery in December 2015. (11) A spare alternator bearing for Stephenville Gas Turbines has been ordered with expected delivery in December 2015. (12) A spare alternator bearing for Happy Valley Gas Turbines has been ordered with expected delivery in December 2015.
14	The remaining winter readiness scope for this project is the replacement of transformer T1 at Hardwoods Terminal Station. The construction activity is complete. The commissioning activity has been rescheduled ten days later, in accordance with the updated Master Outage Schedule. This delay is a result of adjustments to the acceptance testing and commissioning plans for Breaker B1L01 and Transmission Line TL201. Those other project work scopes were fully commissioned as of November 12, 2015. The commissioning of transformer T1 is now underway.
15	This is a unforeseen project, as per the notification to PUB on November 12, 2015, for the immediate inspection and potential repair of the unit service transformer for Holyrood Unit 3. The work is approximately one week in duration and will be undertaken during the planned outage for Unit 3 in November 2015.
16	The new pole construction is complete and conductors will be cut over during the planned outage in November 2015.

APPENDIX B

Status of Winter Readiness Testing of Plant and Equipment
Holyrood Thermal Generating Station
As of November 18, 2015

	Status of Test			
	Unit 1	**Unit 2**	**Unit 3**	**BoP**
Plant:				
Following Annual outages, Unit is run up, Synchronized and all Systems verified before Operating Status determined, as per ECC, prior to coming Winter Operating Season to ensure preparedness. A Unit Load Test is performed at this time.	✓	✓	✓	N/A
Black Start Test of the black start systems is performed prior to the Winter Operating Season.	N/A	N/A	N/A	✓
Perform Megger testing of 600 volt motors prior to the Winter Operating Season.	✓	✓	✓	✓
Safety:				
Boiler Service Pressure Test performed as required by Regulator.	✓	✓	✓	N/A
Safety Valves testing as required.	✓	✓	✓	N/A
Boiler Operational Off-Line High / Low Drum Level Trip Tests.	✓	✓	✓	N/A
Breaker & Disconnect Operation verified by Ops. Dept. & Whitbourne Crew.	✓	✓	✓	N/A
Service Air and Instrument Air Systems:				
All Stationary Air Compressors available.	N/A	N/A	N/A	✓
Air Compressor operational checks performed (e.g. oil levels, cooling water, etc.)	N/A	N/A	N/A	✓
Air Compressor STBY / Sequencing capability.	N/A	N/A	N/A	✓
Raw and Makeup Water System:				
Quarry Brook Dam Integrity.	N/A	N/A	N/A	✓
Raw Water Sump Water Supply Control Valve operational.	N/A	N/A	N/A	✓
Raw Water Pumps operational.	N/A	N/A	N/A	✓
Adequate supply of Chemicals (1172, 1179, Polymer, etc.).	N/A	N/A	N/A	✓
1172, 1179, Polymer Injection Pumping Sets, Pumps, valves, lines, agitators, etc. operational.	N/A	N/A	N/A	✓
Portable Diesel Pump check of Emergency Plant Water Supply from Quarry Brook Dam.	N/A	N/A	N/A	✓
Adequate & Readily available supply of Hoses for the Portable Diesel Pump from Quarry Brook Dam to Plant.	N/A	N/A	N/A	✓
Raw and Makeup Water System & Water Treatment Plant:				
Instrumentation & Controls operational.	✓	✓	✓	N/A
Analytical Rack Sample Cooler Filters cleaned/replaced as required.	✓	✓	✓	N/A
Analytical Rack Sample Coolers cooling water in service.	✓	✓	✓	N/A
Two (2) Sample cooling water pumps availability.	✓	✓	✓	N/A
Clarifier:				
Clarifier Recirculator, VFD Motor, VFD Controller.	N/A	N/A	N/A	✓
Clarifier Recirculator Scraper.	N/A	N/A	N/A	✓
Clarifier Badger Meter and Clearwell Instrumentation.	N/A	N/A	N/A	✓

	Status of Test			
	Unit 1	**Unit 2**	**Unit 3**	**BoP**
Sand Filters:				
Sand Filters (#s 1, 2 & 3) Resin integrity.	N/A	N/A	N/A	✓
Sand Filters (#s 1, 2 & 3) Valve Operation (Normal & Backwashing, etc.).	N/A	N/A	N/A	✓
Two (2) Clearwell Pumps available.	N/A	N/A	N/A	✓
Demineralization System:				
Cation & Anion Trains (A, B & C) Resin integrity.	N/A	N/A	N/A	✓
Adequate supply of Chemicals (Caustic Soda, Sulphuric Acid, 1172, 1179, Polymer, etc.).	N/A	N/A	N/A	✓
Sulphuric Acid & Caustic Soda Transfer Pumps, valves, lines, etc.	N/A	N/A	N/A	✓
Sulphuric Acid & Caustic Soda Regeneration Sets, Pumps, valves, lines, etc.	N/A	N/A	N/A	✓
Reserve Feedwater System, 'RFW':				
RFW Transfer Pump Oil Normal Operating Level.	✓	✓	✓	N/A
RFW Transfer Pumps operational.	✓	✓	✓	N/A
Circulating Water 'CW' and Screen Wash System:				
Vacuum Seal Pits operational.	✓	✓	✓	N/A
All CW Travelling Screens Operational.	✓	✓	✓	N/A
CW Pump Motorized discharge valves 'Manual' & 'Auto', 'Cracked' Position operation verified.	✓	✓	✓	N/A
CW Pump Motors Oil Normal Operating Level,	✓	✓	✓	N/A
CW Pumps operational.	✓	✓	✓	N/A
CW Pump Discharge Vacuum Breakers operational.	✓	✓	✓	N/A
CW Travelling Screens Wash Pumps operational.	✓	✓	✓	N/A
Condenser Flushed.	✓	✓	✓	N/A
Condenser Backwashed.	✓	✓	✓	N/A
General Service 'GS' Coolers Backwashed, cleaned, etc.	✓	✓	✓	N/A
Turbine / Generator 'TG' Coolers Backwashed, cleaned, etc.	✓	✓	✓	N/A
Vacuum Pump Coolers Backwashed, cleaned, etc.	✓	✓	✓	N/A
Boiler:				
Pre-Outage Valve Survey conducted of Boiler Drains.	✓	✓	✓	N/A
Service pressure test on boiler for tube leaks.	✓	✓	✓	N/A
Condenser Air Extraction System:				
Vacuum Pumps available & tested for STBY 'Auto-Start'.	✓	✓	✓	N/A
Vacuum Pump Seal Water Tank water level controller operational.	✓	✓	✓	N/A
Vacuum Pump Seal Water Pump operational.	✓	✓	✓	N/A
Condenser Vacuum Breakers operational.	✓	✓	✓	N/A

	Status of Test			
	Unit 1	**Unit 2**	**Unit 3**	**BoP**
High Pressure 'HP' Feedwater System:				
Boiler Feed Pumps:				
Boiler Feed Pumps available.	✓	✓	✓	N/A
Boiler Feed Pump Oil Tank Normal Operating Level and checked for moisture content.	✓	✓	✓	N/A
Boiler Feed Pump Auxiliary Oil Pumps available.	✓	✓	✓	N/A
Boiler Feed Pump Suction Valves & Limit Switches.	✓	✓	✓	N/A
Boiler Feed Pump Emergency Gland Seal Injection Pump available.	✓	✓	✓	N/A
Boiler Feed Pump Emergency Gland Seal Pump Oil Normal Operating Level.	✓	✓	✓	N/A
Boiler Feed Pump Gland Seal Water available from the Emergency Pump and Condensate Extraction Pumps.	✓	✓	✓	N/A
Boiler Feed Pump Gland Seal Water Control Valve operational.	✓	✓	✓	N/A
Boiler Feed Pump Gland Seal Water Drains Tank Level Float Operated Valve operational (Units 1 & 2).	✓	✓	N/A	N/A
Boiler Feed Pump Gland Seal Water Transfer Pumps operational (Units 1 & 2).	✓	✓	N/A	N/A
Boiler Feed Pump Gland Seal Water Drains Tank Level Control Valve operational (Unit 3).	N/A	N/A	✓	N/A
Boiler Feed Pump Gland Seal Water Transfer Pumps operational (Unit 3).	N/A	N/A	✓	N/A
Boiler Feed Pump Recirculation Control Valves operational.	✓	✓	✓	N/A
Boiler Feed Pump Motorized Discharge Pilot & Main Valves operational.	✓	✓	✓	N/A
Low Load Feedwater Isolator & Control Valves operational.	✓	✓	✓	N/A
Main Feedwater Isolator & Control Valves operational.	✓	✓	✓	N/A
High Pressure Heater Motorized Valves (Inlet, Outlet & Bypass) checked for proper operation, sequencing, etc.	✓	✓	✓	N/A
Miscellaneous:				
Economizer 'Manual' Operated Valve operational.	✓	✓	✓	N/A
Economizer Motorized Recirculation Valve operational (Unit 3).	N/A	N/A	✓	N/A
Boiler Drum Level Instrumentation operational.	✓	✓	✓	N/A
HP Heater Bled Steam Check Valves operational.	✓	✓	✓	N/A
Start-up Desuperheater Steam & Water valving operation / position verified (Unit 3).	N/A	N/A	✓	N/A
Main Steam & Reheat Steam Desuperheater Spray Water Isolators & Control Valves operational.	✓	✓	✓	N/A
Auxiliary Steam Desuperheater Spray Water Control Valve operational (Unit 3).	N/A	N/A	✓	N/A
Low Pressure 'LP' Feedwater System:				
Condenser:				
Condenser Hotwell Make-Up / Surplus Control Valves operation verified.	✓	✓	✓	N/A
Condenser Hotwell Make-Up Motorized Isolating Valve operation verified (Unit 3).	N/A	N/A	✓	N/A
Condenser Dye test for leaks, as required.	✓	✓	✓	N/A

	Status of Test			
	Unit 1	**Unit 2**	**Unit 3**	**BoP**
Ammonia & Cortrol System:				
Adequate Supply in place.	✓	✓	✓	N/A
Pumps operational.	✓	✓	✓	N/A
Control Instrumentation operational.	✓	✓	✓	N/A
Condensate Extraction Pumps:				
Condensate Extraction Pumps available.	✓	✓	✓	N/A
Condensate Extraction Pump Motors Bearing Oil Normal Operating Level.	✓	✓	✓	N/A
Condensate Extraction Pump Motor Cooling Water available (Unit 3).	N/A	N/A	✓	N/A
Condensate Polishers:				
Resin integrity verified.	✓	✓	✓	N/A
Two (2) Polishers Rinsed and available.	✓	✓	✓	N/A
Valve Operation (Normal & Regenerating, etc.).	✓	✓	✓	N/A
Regeneration System Skids available (valving, pumps, blowers, tanks. Etc.).	✓	✓	✓	N/A
Condensate Polisher Bypass Control Valve operational.	✓	✓	✓	N/A
Low Pressure Heaters:				
Low Load Recirculation Control Valve operation.	✓	✓	✓	N/A
Deaerator:				
Deaerator Normal Operating Level	✓	✓	✓	N/A
Deaerator Steam Coil operational.	✓	✓	✓	N/A
Deaerator Pegging Steam operational.	✓	✓	✓	N/A
Deaerator Low Level Trip Test	✓	✓	✓	N/A
Miscellaneous:				
Condenser Flash Tank Control Valve operation / position.	✓	✓	✓	N/A
Turbine Low Pressure Exhaust Hood Spray Motorized Valve operation.	✓	✓	✓	N/A
Start-up Desuperheater Steam & Water valving operational (Units 1 & 2).	✓	✓	N/A	N/A
LP Heater Bled Steam Check Valves operational.	✓	✓	✓	N/A
Bled Steam and Heater Drains System:				
LP and HP Instrumentation and Control operational.	✓	✓	✓	N/A
LP and HP Heater Level Control operational.	✓	✓	✓	N/A
Low Pressure 'LP' Heater Condensate Drains Pumps operational.	✓	✓	✓	N/A
#4 High Pressure 'HP' Heater Condensate Drains Pump operational.	✓	✓	✓	N/A

	Status of Test			
	Unit 1	**Unit 2**	**Unit 3**	**BoP**
Air and Flue Gas System:				
Instrumentation and Control operational.	✓	✓	✓	N/A
Forced Draft 'FD' Fans and Air Dampers:				
Two (2) FD Fans available.	✓	✓	✓	N/A
Bearing Oil Normal Operating Level.	✓	✓	✓	N/A
Cooling Water on to Fans.	✓	✓	✓	N/A
Stroke Variable Inlet Vanes, 'VIVs'.	✓	✓	✓	N/A
Stroke Discharge Dampers.	✓	✓	✓	N/A
FD Fan Motor Variable Speed Drives operational.	✓	✓	✓	N/A
All Burner Auxiliary Air Dampers/Positioners operation (Units 1 & 2).	✓	✓	N/A	N/A
All Elevation Air Flow Dampers/ Positioners operation (Unit 3).	N/A	N/A	✓	N/A
Rotary Air Heaters:				
Rotary Air Heaters operational.	✓	✓	✓	N/A
Rotary Air Heaters Bearing Oil (Top & Bottom) Normal Operating Level.	✓	✓	✓	N/A
Rotary Air Heaters Bearing Cooling Water On.	✓	✓	✓	N/A
Rotary Air Heaters Electric Motor Drives operational.	✓	✓	✓	N/A
Rotary Air Heaters Air Supply to Air Heater Air Motor Drives Open.	✓	✓	✓	N/A
Rotary Air Heaters Start-up of Air Motor Drive upon loss of AC Power Supply to the normal operating Electric Drive Motor.	✓	✓	✓	N/A
Rotary Air Heaters Steam Supply Control Valves operational. (*Note: Two Steam Supplies on (Units 1 & 2)).	✓	✓	✓	N/A
Rotary Air Heaters Sootblowers operational.	✓	✓	✓	N/A
Boiler Sootblowing System:				
Sootblower Control Panel operational.	✓	✓	✓	N/A
Sootblowers Steam Supply Control Valve operational.	✓	✓	✓	N/A
Sootblowers Overhauled during Annual Outage Verify operation (e.g. Rotation, Travel Advancing/Retracting from Furnace, leaks, etc.) first time Unit is placed on Line.	✓	✓	✓	N/A
Light Fuel Oil System:				
Hydro Pad operational.	✓	✓	✓	N/A
Light Oil Pumps available.	✓	✓	✓	N/A
Pumps, Valves (including Control & Trip), lines, strainers, pressure (locally & UCB).	✓	✓	✓	N/A
Check Light Oil Supply & Return Lines to / from Plant respectively.	✓	✓	✓	N/A
Suction Strainers cleaned with covers secured.	✓	✓	✓	N/A
Ignitors cleaned, securely in place with associated lines securely fastened.	✓	✓	✓	N/A
Ignitors all checked for operation during Unit Start-up (e.g. Ignitor Control Box, Valve Operation, Lighting, etc.).	✓	✓	✓	N/A

	Status of Test			
	Unit 1	**Unit 2**	**Unit 3**	**BoP**
Fuel Oil Delivery System, Auxiliary Steam & Fuel Oil Piping System:				
Adequate Heavy Oil Storage.	N/A	N/A	N/A	✓
Heavy Oil Piping from Dock to Tankfarm, Tankfarm to Plant Day Tank and Day Tank to Heavy Oil Sets.	N/A	N/A	N/A	✓
Adequate Light Oil Storage.	N/A	N/A	N/A	✓
Light Oil Piping from Road Tanker Transfer Pump to Tanks and from Tanks to Light Oil Sets in Plant.	N/A	N/A	N/A	✓
All Storage Tanks Suction Heaters available when required.	N/A	N/A	N/A	✓
All Storage Tanks Flatform Heaters available when required.	N/A	N/A	N/A	✓
Auxiliary Steam for Suction Heaters available.	N/A	N/A	N/A	✓
Auxiliary Steam for Flatform Heaters available.	N/A	N/A	N/A	✓
Auxiliary Steam for Heat Tracing available.	N/A	N/A	N/A	✓
Electrical Heat Tracing for Fuel Oil Lines available.	N/A	N/A	N/A	✓
Day Tank Supply Line Trip Valve Tested.	N/A	N/A	N/A	✓
Day Tank available to receive oil.	N/A	N/A	N/A	✓
Day Tank steam coil available.	N/A	N/A	N/A	✓
Fuel (Heavy) Oil System:				
Fuel Oil Heating Sets:	✓	✓	✓	N/A
Fuel Oil Heaters available.	✓	✓	✓	N/A
Fuel Oil Heaters cleaned and inspected.	✓	✓	✓	N/A
Steam Supply to Heavy Oil Set Heaters available as required.	✓	✓	✓	N/A
Fuel Oil Heaters Temperature Steam Control Valve operational.	✓	✓	✓	N/A
Suction Strainers cleaned (including standby & extras) with covers secured.	✓	✓	✓	N/A
Fuel Oil Accumulator operational.	✓	✓	✓	N/A
Fuel Oil Pumps available.	✓	✓	✓	N/A
Pumps 'Auto-Start' check Off-Line.	✓	✓	✓	N/A
Header Pressure Control Valve operational.	✓	✓	✓	N/A
Fuel Oil Meter operational.	✓	✓	✓	N/A
Fuel Oil Supply Control, Trip, Long & Short Recirculation Valves:				
Fuel Oil Supply Control Valve operational.	✓	✓	✓	N/A
Fuel Oil Trip Valve operational.	✓	✓	✓	N/A
Fuel Oil Long Recirculation Valve operational (Units 1 & 2).	✓	✓	N/A	N/A
Fuel Oil Short Recirculation Valve operational (Units 1 & 2).	✓	✓	N/A	N/A
Elevation Fuel Oil Trip Valves operational (Unit 3).	N/A	N/A	✓	N/A
Elevation Fuel Oil Minimum Supply Control Valves operational (Unit 3).	N/A	N/A	✓	N/A
Elevation Fuel Oil Supply Control Valves operational (Unit 3).	N/A	N/A	✓	N/A
Main Fuel Oil Recirculation Valve operational (Unit 3).	N/A	N/A	✓	N/A
Elevation Recirculation Valves operational (Unit 3).	N/A	N/A	✓	N/A

	Status of Test			
	Unit 1	**Unit 2**	**Unit 3**	**BoP**
Burners:				
All Burners cleaned, securely in place with associated lines securely fastened.	✓	✓	✓	N/A
All Burners checked for operation during Unit Start-up (e.g. Advancing / Retracting, Valve Operation, Lighting, etc.).	✓	✓	✓	N/A
All Burner Tilts checked for operation (Units 1 & 2).	✓	✓	N/A	N/A
General Service 'GS' System:				
GS Heat Exchangers Backwashed, cleaned, etc.	N/A	N/A	✓	N/A
Stage I GS Plate Cooler Strainers cleaned.	✓	✓	N/A	N/A
Stage I GS 'Auto-Clean' Strainer operational.	✓	✓	N/A	N/A
Stage I GS Duplex Strainers cleaned.	✓	✓	N/A	N/A
GS Pump Suction Strainers cleaned.	✓	✓	✓	N/A
GS Pump Oil Normal Operating Level.	✓	✓	✓	N/A
GS Pumps available & tested for STBY 'Auto-Start'.	✓	✓	✓	N/A
Turbine / Generator 'TG' Auxiliary Cooling System:				
TG Head Tank Normal Operating Level.	✓	✓	✓	N/A
Turbine Lube Oil Coolers operational.	✓	✓	✓	N/A
TG Heat Exchangers Backwashed, cleaned, etc.	✓	✓	✓	N/A
TG Pump Oil Normal Operating Level.	✓	✓	✓	N/A
TG Pumps available & tested for STBY 'Auto-Start'.	✓	✓	✓	N/A
Turbine Generator 'TG' System:				
Hydraulic System Units 1& 2:				
Hydraulic System Accumulators operational.	✓	✓	N/A	N/A
Hydraulic System Storage Tank Normal Operating Level and checked for moisture content.	✓	✓	N/A	N/A
Hydraulic System Storage Tank air purging of moisture in place.	✓	✓	N/A	N/A
Hydraulic Set Primary, Secondary Filter indications ok.	✓	✓	N/A	N/A
Two (2) Hydraulic Fluid Pumps availability.	✓	✓	N/A	N/A
Hydraulic Pump Auto Start Testing.	✓	✓	N/A	N/A
Two (2) Hydraulic Fluid Pump Coolers availability.	✓	✓	N/A	N/A
Valves:				
Turbine Main Stop Valve Testing (Units 1 & 2).	✓	✓	N/A	N/A
Turbine Two (2) Main Stop Valves Testing (Unit 3).	N/A	N/A	✓	N/A
Turbine 'Left-Hand' & 'Right Hand' Reheat Stop & Intercept Control Valve Testing verified.	✓	✓	✓	N/A
Turbine Six (6) Main Control Valve operation (Units 1 & 2).	✓	✓	N/A	N/A
Turbine Four (4) Main Control Valve operation (Unit 3).	N/A	N/A	✓	N/A
Turbine Blowdown Valve operation.	✓	✓	✓	N/A

	Status of Test			
	Unit 1	**Unit 2**	**Unit 3**	**BoP**
Lubricating System:				
Lube Oil Tank Normal Operating Level and checked for moisture content.	✓	✓	✓	N/A
Lube Oil Tank Oil Centrifuge operational (Unit 3).	N/A	N/A	✓	N/A
Portable Centrifuge operational.	✓	✓	✓	N/A
Lube Oil Tank Vapor Extractor operation.	✓	✓	✓	N/A
Bowser Oil Conditioner Vapor Extractor Operation (Units 1 & 2).	✓	✓	N/A	N/A
Two (2) AC Lube Oil pumps available & tested for STBY 'Auto-Start' (Units 1 & 2)	✓	✓	N/A	N/A
DC Pump Testing & Starting from UCB (Units 1 & 2).	✓	✓	N/A	N/A
Verify Discharge Pressure of EACH AC Lube Oil Pumps (Locally & UCB) (Units 1 & 2).	✓	✓	N/A	N/A
Verify Discharge Pressure of DC Lube Oil Pump (Locally & UCB) (Units 1 & 2).	✓	✓	N/A	N/A
Jacking Oil Pump Testing & Starting from UCB (Unit 3).	N/A	N/A	✓	N/A
Verify Discharge Pressure of Jacking Oil Pump (Locally & UCB).	N/A	N/A	✓	N/A
Auxiliary Oil Pump 'AOP' Testing & Starting from UCB & Turbine Lube Oil Tank (Unit 3).	N/A	N/A	✓	N/A
Verify Discharge Pressure of AOP Pump (Locally & UCB) (Unit 3).	N/A	N/A	✓	N/A
AC Pump Testing & Starting from UCB & Turbine Lube Oil Tank (Unit 3).	N/A	N/A	✓	N/A
Verify Discharge Pressure of AC Flushing Oil Pump (Locally & UCB) (Unit 3).	N/A	N/A	✓	N/A
DC Pump Testing & Starting from UCB & Turbine Lube Oil Tank (Unit 3).	N/A	N/A	✓	N/A
Verify Discharge Pressure of DC Flushing Oil Pump (Locally & UCB) (Unit 3).	N/A	N/A	✓	N/A
Barring / Turning Gear Low Oil Pressure Trip Test.	✓	✓	✓	N/A
Barring / Turning Gear:				
Turning Gear operation verified.	✓	✓	✓	N/A
Perform trip test of Turning Gear.	✓	✓	✓	N/A
Miscellaneous:				
Steam Seal Regulator operational.	✓	✓	✓	N/A
Operational On-Line / Off-Line Overspeed Trip Tests.	✓	✓	✓	N/A
Hydrogen 'H2' & Carbon Dioxide 'CO2' System:				
H2 and CO2 systems in operation.	N/A	N/A	N/A	✓
Adequate H2 Bulk Packs on hand.	N/A	N/A	N/A	✓
CO2 Adequate Bulk Packs on hand.	N/A	N/A	N/A	✓

	Status of Test			
	Unit 1	**Unit 2**	**Unit 3**	**BoP**
Generator:				
Generator Exciter Operation checked Off & On Line.	✓	✓	✓	N/A
Seal Oil System tested with 'Air' on Generator in preparation for Leak Testing.	✓	✓	✓	N/A
Seal Oil Regulator operational.	✓	✓	✓	N/A
AC Seal Oil pumps available & tested for STBY 'Auto-Start' (Units 1 & 2).	✓	✓	N/A	N/A
AC Seal Oil Pump available (Unit 3).	N/A	N/A	✓	N/A
DC Seal Oil Pump available & tested for STBY 'Auto-Start'.	✓	✓	✓	N/A
Seal Oil Vacuum Pumps available.	✓	✓	✓	N/A
Vacuum Tank Level Control operational.	✓	✓	✓	N/A
Leak Testing Performed prior to 'Gassing Up' Generator.	✓	✓	✓	N/A
Purity, Dew Point, etc. Instrumentation operation verified.	✓	✓	✓	N/A
Powerhouse and Switchyard Single Line:				
Plant 129V System:				
129 V Battery Banks checked Stage I & II.	✓	✓	✓	N/A
129V Battery Chargers checked Stage I & II.	✓	✓	✓	N/A
Plant 258V System:				
258V Battery Banks checked Stage I & II.	✓	✓	✓	N/A
258V Battery Chargers checked Stage I & II.	✓	✓	✓	N/A
Plant Uninterrupted Power Supplies 'UPS':				
Number's 1, 2, 3 & 4 'UPS' Power Supplies including Batteries, Cooling Fans, etc., checked.	✓	✓	✓	N/A
Emergency Diesel Generators:				
Stage I & II Emergency Diesel Generators Tested for Emergency Stop.	✓	✓	✓	N/A
Stage I & II Emergency Diesel Generators Tested for Manual & Auto-Start Operation along with Auto Breaker Closure as well as Emergency Manual Closing of Breakers.	✓	✓	✓	N/A
Diesel Bus Tie Breaker, 'DBT' operation verified.	✓	✓	✓	N/A
Holyrood Main Powerhouse:				
Back-Up ECC and Guardhouse Propane Generator.	N/A	N/A	N/A	✓
Plant Air Conditioning System:				
Control & Relay Rooms.	N/A	N/A	N/A	✓
Uninterrupted Power Supply 'UPS' #1 Room.	N/A	N/A	N/A	✓
Generator Excitation and 'UPS' #s 2, 3 & 4 Room (Unit 3).	N/A	N/A	N/A	✓
Plant Heating Steam:				
All Systems operational for when required.	N/A	N/A	N/A	✓

APPENDIX C

Status of Winter Readiness Testing of Plant and Equipment
Hydraulic Generation
As of November 15, 2015

	Status of Test										
	Cat Arm			HLK		USL		GCL		PRV	
	Unit 1	Unit 2	Bop PH	Unit 1	Bop	Unit 1	Bop	Unit 1	Bop	Unit 1	Bop
Following Annual outages, Unit is run up, Synchronized and all Systems verified before Operating Status determined, as per ECC, prior to coming Winter Operating Season to ensure preparedness. A Unit Load Test is performed at this time.	✓	✓	N/A	✓	✓	✓	N/A	✓	N/A	✓	N/A
Black Start Test of the black start systems is performed prior to the Winter Operating Season. Station service transfers alternate sources	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spherical Valves:											
Turbine Main Stop Valve Testing	✓	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Turbine Main Stop Valve Operational	✓	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Service Air , Instrument Air Systems Compressors:											
All Stationary Air Compressors available.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Air Compressor operational checks performed (e.g. oil levels, cooling water, etc.)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Air Compressor STBY / Sequencing capability./Lead Lag/Standby	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HP compressors available	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	N/A
LP compressor available	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Instrumentation Control and Alarms operational.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

	Status of Test										
	Cat Arm			HLK		USL		GCL		PRV	
	Unit 1	Unit 2	Bop PH	Unit 1	Bop	Unit 1	Bop	Unit 1	Bop	Unit 1	Bop
TG Cooling Water Systems:											
Cooling water pumps available	✓	✓	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
Emergency Cooling water available Penstock Supply	✓	✓	✓	✓	✓	N/A	N/A	✓	✓	✓	✓
Cooling water system available	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TG Pumps available & tested for Auto/manual Start.	✓	✓	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
Shaft seal sytem available	N/A	N/A	N/A	✓	✓	✓	N/A	✓	✓	✓	✓
CW Pump Motorized discharge valves 'Manual' & 'Auto', 'Cracked' Position operation verified.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotary (Water)Strainer	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Turbine Generator Governor System:											
Hydraulic System Accumulators operational.	✓	✓	N/A	✓	N/A	✓	N/A		N/A	✓	N/A
Governor System Testing	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A
Governor System Available	✓	✓	N/A	✓	N/A	✓	N/A		N/A	✓	N/A
Hydraulic pump(s) availble	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A
Hydraulic Pump Gov Auto Start Testing.	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A
Generator:											
Generator Exciter Operation checked Off & On Line.	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A
Lubricating System:											
Portable Centrifuge operational.	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A
Portable oil Pump (Jacking)	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A
Oil level system generator metering	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A
Oil level system turbine metering	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A	N/A	N/A

	Status of Test										
	Cat Arm			HLK		USL		GCL		PRV	
	Unit 1	Unit 2	Bop PH	Unit 1	Bop	Unit 1	Bop	Unit 1	Bop	Unit 1	Bop
AC High pressure Jacking Oil Pump available automatic	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A	N/A	N/A
Miscellaneous:											
Breaker & Disconnect Operation verified by Ops. Dept. & TROCrew.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Control structure											
Water elevation	N/A	N/A	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A
Gate Operation	N/A	N/A	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A
Intake											
Water elevation	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A
Trashrack system	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A
Gate operation	✓	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A
Spillway/By-Pass											
Water elevation	N/A	N/A	N/A	N/A	✓	N/A	✓	N/A	✓	✓	N/A
Gate Heating /Ice Away unit	N/A	N/A	N/A	N/A	✓	N/A	✓	N/A	✓	N/A	N/A
Gate operation	N/A	N/A	N/A	N/A	✓	N/A	✓	N/A	✓	N/A	N/A
Emergencey(back-up) Desiel Generator	N/A	N/A	N/A	N/A	✓	N/A	✓	N/A	N/A	N/A	N/A
Emergencey lift operation and tested	N/A	N/A	N/A	N/A	✓	N/A	✓	N/A	N/A	N/A	N/A
Battery Banks And Battery Chargers											
Plant 129V System:											
129 V Battery Banks checked	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
129 V Battery Chargers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
129 V battery Banks Available	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Plant 48V System:											
48V Battery Banks checked	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Emergency Diesel Generators:											
Emergency Diesel Generators Tested for Emergency Stop.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

	Status of Test										
	Cat Arm			HLK		USL		GCL		PRV	
	Unit 1	Unit 2	Bop PH	Unit 1	Bop	Unit 1	Bop	Unit 1	Bop	Unit 1	Bop
Emergency Diesel Generators Tested for Manual & Auto-Start Operation along with Auto Breaker Closure as well as Emergency Manual Closing of Breakers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alternate AC sources avalable	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Station Services Available	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transfer alternate source	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Plant Air Conditioning System:											
Control Rooms.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Communications Rooms	N/A	N/A	✓	N/A	✓	N/A	✓	N/A	✓	✓	✓
Plant Heating Steam:											
All Systems operational for when required.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

APPENDIX D

Master Generation Outage Schedule
Updated as of November 18, 2015

2015 Planned Generation Outage Schedule*

	Month	November					December				Scheduled Annual
	Week Starting	1	8	15	22	29	6	13	20	27	Maintenance Outages
Unit	*MW*										
Holyrood - G1 Note 1	170										Aug 01 - Nov 09 (online Nov 13)
Holyrood - G2	170										June 06 - Oct 05
Holyrood - G3	150										Apr 10 - Aug 18
Bay D'Espoir - G1	76.5										Apr 26 - July 09
Bay D'Espoir - G2	76.5										Apr 05 - May 15, Aug 2 - Sept 12
Bay D'Espoir - G3	76.5										Oct 04 - 26
Bay D'Espoir - G4	76.5										Sept 27 - Nov 8
Bay D'Espoir - G5	76.5										May 27 - Aug 12
Bay D'Espoir - G6	76.5										May 27 - July 31
Bay D'Espoir - G7	154										Aug 16 - Sept 06
Upper Salmon	84										Aug 02 - 14
Granite Canal	40										July 19 - 30
Hinds Lake	75										Oct 26 - Nov 09
Cat Arm - G1	67										July 06 - 16, Nov 01 - 12
Cat Arm - G2	67										Sept 08 - 26
Paradise River	8										May 10 - 23, Sept 13 - 23
Hardwoods GT Note 2	50										
Stephenville GT	50										Apr 13 - May 29, Aug 31 - Oct 17
Holyrood CT	123.5										
Star Lake	18										June 08 - 11, Sept 07 - 12
Exploits	63										
CoGen	8										
NLH Diesels Note 7	24.7										
Newfoundland Power	117.9										
CBPP 60 Hz	99.1										
Available Capacity Note 3	1,998	1,550	1,794	1,910	1,949	1,998	2,011	2,011	2,011	2,011	
Forecasted Gross Island Peak Load Note 4, 5		1,270	1,262	1,314	1,365	1,417	1,758	1,758	1,758	1,758	
Total Reserves Note 6		280	532	596	584	581	363	363	363	363	
Largest Operating Unit		170	170	170	170	170	170	170	170	170	
n-1 Reserve		110	362	426	414	411	193	193	193	193	

Legend	
Unit Available	White
Unit Unavailable	Dark Blue
Unit Derated	Light Blue
Unplanned / Extension	Gray

Notes:

1 Holyrood G1 maintenance was completed on November 09. The unit was not placed online until November 13 due to an outage on the tranmission system.

2 Hardwoods Gas Turbine derated to 38 MW due to a temporarily installed leased engine (Reference PUB Advisory 2015-H-057).

3 As of December 01, planned Vale Diesels capacity of 13 MW is included in Available Capacity. A pre-winter capacity test is required to prove capacity up to 13 MW.

4 The Forecasted Gross Peak Load values for Nov 01 and Nov 08 are the actual Gross Peak Load values.

5 December's Forecasted Gross Peak Load is the 2015 - 2016 Island Winter Peak Load (1,758 MW). This is a P50 forecast.

6 December's Total Reserves reflect the planned agreements for CBPP Capacity Assistance (80 MW), Newfoundland Power Curtailable Load (9.9 MW), and System Voltage Reduction (20 MW).

7 24.7 MW includes Hawke's Bay (5 MW), St. Anthony (9.7 MW), and Holyrood Diesels (10 MW).

* Preventative/Corrective Maintenance items that require short duration outages are not reflected in this chart. They are planned in conjunction with system operations for an appropriate time.