

October 3, 2014

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

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

**COPY**



Dear Ms. Blundon:

**Re: Newfoundland and Labrador Hydro - the Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System**

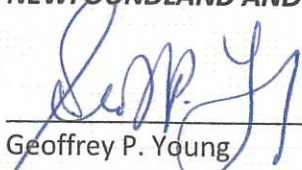
Further to Hydro's letter dated September 3, 2014, please find enclosed an original plus 12 copies of the minutes of the 2014 Joint Utilities Meeting, held at Hydro Place on September 18, 2014. These minutes detail the presentations and discussions that took place during the meeting and action items arising from participant discussions.

Hydro apologizes for the delay in the filing of this information.

If you have any questions or comments, please contact the undersigned.

Yours truly,

**NEWFOUNDLAND AND LABRADOR HYDRO**

  
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Geoffrey P. Young  
Senior Legal Counsel

GPY/jc

cc: Gerard Hayes – Newfoundland Power  
Paul Coxworthy – Stewart McKelvey Stirling Scales  
ecc: Roberta Frampton Benefiel – Grand Riverkeeper Labrador

Thomas Johnson – Consumer Advocate  
Danny Dumaresque

**JOINT UTILITIES MEETING**  
**Hosted by Newfoundland and Labrador Hydro**  
**Hydro Place, St. John's**  
**September 18, 2014**

In Attendance:

Larry Marks – Deer Lake Power  
Glenn Samms – Newfoundland Power  
Neville Collins – Newfoundland Power  
Richard White – Vale  
Bob Butler – Newfoundland and Labrador Hydro – Nalcor  
Jason Tobin – Newfoundland and Labrador Hydro – Nalcor

Regrets:

Curtis Williams – NARL  
Clyde O'Leary - NARL  
Jerome Slaney – St. Lawrence – ENEL  
Wilmore Eddy – Nalcor Exploits  
Nigel Haines – Nalcor Exploits  
Phil Hollett – Fermeuse Wind  
Sean Lacour – Newfoundland Power  
Jason Callan - Vale

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The meeting started at approximately 8:45 am.

- 1. Introductions**
- 2. Safety Moment – Jason Tobin**

Jason Tobin gave an overview of the importance of effective communication. We need to have a clear understanding of the task before proceeding and not to proceed until you have that. This is especially important during switching activities. This was followed by a discussion about some recent switching events that occurred at NLH over the last couple of months.

### 3. Review of Previous Minutes – Jason Tobin

Jason Tobin reviewed the minutes from the previous meeting and action items that were assigned.

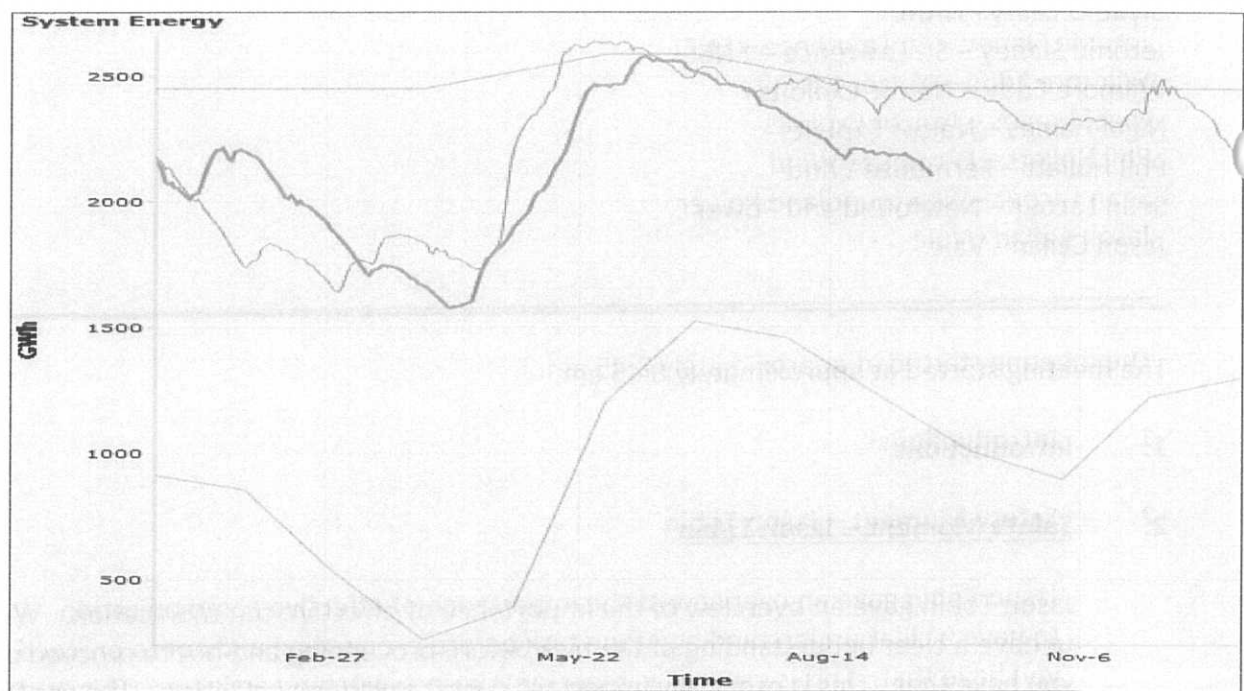
#### Action items

- Richard White to coordinate with Jason Tobin regarding mutual visits by operators to the Energy Control Centre and the Vale facility.

### 4. Reservoir Status/Production Forecast

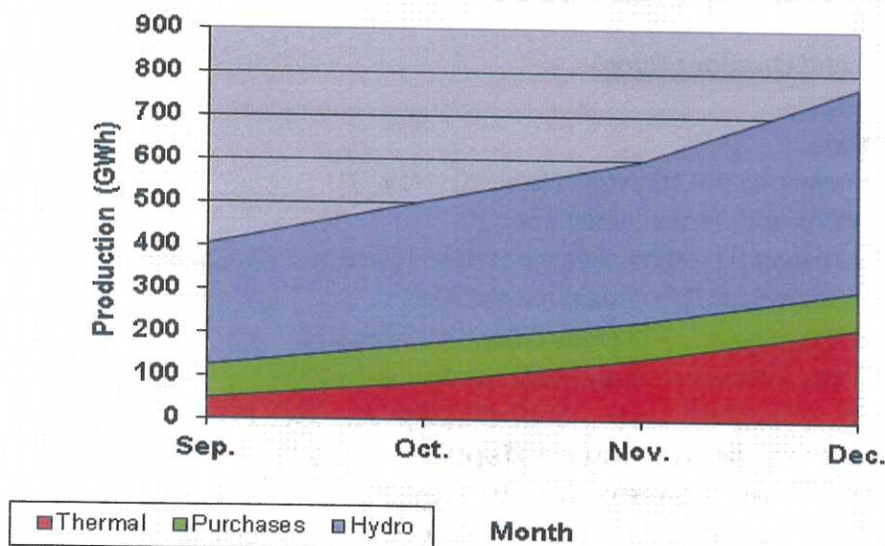
#### Newfoundland and Labrador Hydro

NLH reports that its aggregate reservoir storage is at 86% of the maximum operating level, or 2129 GWh, on September 15<sup>th</sup>. This is depicted in the following graph.



NLH provided some context around the minimum storage curve. It is based on history and trying to protect against historical dry sequences. There was further discussion on this and what it will mean with the connection of Muskrat Falls.

Hydro's production forecast for the remainder of 2014 is shown in the graph below. Purchases are forecast to be steady for the remainder of the year and be between 75 and 90 GWh per month. It is expected that Holyrood will produce at its minimum power output when the units are placed in service, driven primarily by the need to reliably meet Avalon loading requirements. Hydro sees one Holyrood unit in-service until early to mid-October, two units from mid-October and November and three in December. Hydro generation will provide the balance to meet the overall system loading requirements.



NLH mentioned that there are on-going discussions with industrial customers for interruptible loads and capacity assistance arrangements (similar to this year with Kruger).

The group held some discussion around the loads we have seen on the system this year. They have been much higher this year. Both NLH and Newfoundland Power believe some of this could be attributed to heat pumps. Some are undersized and the backups are oversized. They are not great in colder temperatures and a lot of times the backup will initiate.

#### Newfoundland Power

Newfoundland Power reports that its aggregate reservoir storage position is around 35 percent of full storage. Full storage is represented by 90 GWh of energy. The current storage position is near normal for this time of year.

## Deer Lake Power

The Grand Lake reservoir elevation is 75% full. This is approximately three feet below the rule curve.

## Vale

Vale expects to have a rectifier bank in service this winter. This would be about a 30 MW load.

## 5. Planned Generation/Transmission Outages

### Newfoundland and Labrador Hydro

#### *Generation*

- Holyrood 1 – 16 Weeks (July 20 – Nov 7)
- Holyrood 2 – Available Sept 19
- Holyrood 3 – 3 day outage (When Holyrood 2 Available)
- Hardwoods GT – Available Sept 26
- Bay d’Espoir 7 – 2 weeks (Sept 14 – Sept 26)
- Paradise River – 2 weeks (Sept 14 – Sept 26)
- Bay d’Espoir 5 and 6 – 3 weeks (Sept 28 – Oct 17)
- Stephenville GT - 4 weeks (Sept 29 – Oct 24)
- Hinds Lake – 5 weeks (Oct 19 – Nov 21)
- Holyrood GT – Expected to be in service by December 7

#### *Transmission*

#### Kruger

- Converter – Quarterly Inspection, Vibration Monitoring System Replacement and transformer PM/CM (Sept 22 – 26)

#### NARL

- T1 and T2 – High and Low voltage neutral bushing replacement – 1 week each
  - Looking at early to mid-November

## Newfoundland Power

- HLY T2 and B1T2 – Transformer Maintenance and Breaker PM
  - Two 6 hour outages – October 18<sup>th</sup> and 19<sup>th</sup>
- HRD Bus 7 PT and 38L CT
- HRD Bus 12, TL218 and 38L
  - Contractor to sag conductor to new structure near both lines
  - October 16<sup>th</sup>
- HWD Bus 8 PTS
  - Week of September 29<sup>th</sup>
- HWD B8B9 CT replacement
  - End of October
- OPD T1
  - September 22<sup>nd</sup> - Mid November
- SSD T1
  - Delay on transformer. Now arriving on site October 31<sup>st</sup>
  - Requires outage to Bus 1: Late September – Early October for B1T1-1 and B1L03
  - Requires 2 hour outage when transformer arrives for installation of the transformer on the concrete pad. End of October.
- STB air system upgrade – Tie in for breakers
  - Ongoing
- STB – 130L and 133L Line disconnects (Potential)
- SVL – T3 and Bus 1 PT's (This week)
- TL201 – Insulator Replacement
  - Mid-September – End of October
- TL203 – Insulator Replacement
  - When TL201 is complete until early December
  - TL218 – Reconfiguration of line around Soldiers Pond
  - Look at completing before TL203 or potentially during TL203 outage
- WAV T5 – Tap changer Replacement
  - Ongoing. Completion first week of October.

### Action items

- Jason Tobin to follow up and get status of GT1 in OPD
- Jason Tobin to confirm time and dates for SSD T1 work

## Newfoundland Power

### *Generation*

- Hearts Content: Upgraded. Scheduled to be complete mid-November
- Wesleyville GT: Sent to Scotland for repairs. Expected back mid-November.
- Greenhill GT: Out for repairs (Fuel Leak). Expected back mid-November.
- Mobile GT: Currently on Bell Island until Mid-November.

### *Transmission*

- 12L: Rebuild in progress. Mid October completion.
- 13L: Starting the week of September 29<sup>th</sup>. Completion by end of November.
- Holyrood Substation breaker installs: September – December
- Bay Roberts: Rebuild. Scheduled to be completed in December
  - 138 kV loop will be broken during this time.
- Springdale: Work ongoing in substation
  - Problem with mobile substation (P4).

Newfoundland Power also mentioned they are replacing 7 transformers by the end of this year (no impact to the bulk electric system). They also mentioned there was no work planned on feeder lines to the Vale work site.

## Deer Lake Power

- Kruger is planning a mill shutdown from September 25<sup>th</sup> – 27<sup>th</sup>. There will be maintenance completed on L1 during this shutdown.
- Generator #6 will be out of service until December 10<sup>th</sup> for penstock replacement.

## Vale

- They have no planned outages.
- Vale talked about switching supply between T1 and T2 as there is a problem with the distribution transformers. Need to complete a transient analysis of distribution system. Feeder breakers have under voltage trips.

### Action items

- Jason Tobin to follow up with Vale to address any concerns with terminal station operation

6. **Major Capital Expenditures**

Newfoundland and Labrador Hydro

Hydro presented a summary of its 2014 capital plan and highlighted the following:

Generation Assets – Total expenditure \$27.0 Million in 2014. Some of the highlights:

▪ Bay d’Espoir Unit #3 stator rewind	\$4.3 Million
▪ Bay d’Espoir surge tank 3 refurbishment	\$2.3 Million
▪ Holyrood Unit 2 turbine/generator overhaul	\$5.1 Million
▪ Holyrood six forced draft fans variable speed drives	\$2.7 Million
▪ Holyrood condition assessment phase 2	\$1.5 Million
▪ Stephenville GT upgrade plant life extension	\$3.0 Million

Transmission & Terminals Assets – Total expenditure \$64.0 Million in 2014. Some of the highlights:

▪ Upgrade breakers and power transformers	\$5.6 Million
▪ Replace compressed air systems – STB and SSD	\$2.1 Million
▪ Install additional OPD transformer capacity	\$15.3 Million
▪ Wood pole line management program	\$2.6 Million
▪ Refurbish anchors and footings: TL202 and TL206	\$1.2 Million
▪ Distribution upgrades, additions and extensions	\$16.1 Million

Supplemental Capital Projects

▪ Holyrood Combustion Turbine	\$119.0 Million
▪ New Bay d’espoir to Western Avalon TL	\$292.0 Million (Estimated)
▪ Sunnyside replacement equipment	\$7.2 Million
▪ Western Avalon Tap Changer replacement	\$1.5 Million

There are also \$6.6 Million in General Properties for the 2014 capital budget



### Newfoundland Power

Newfoundland Power discussed some of the ongoing capital work this year

- Work in Bay Roberts is ongoing.
- Gander Substation is completed.
- Work in Holyrood Substation will be completed this year.
- Replacement of a transformer in Hardwoods will be completed this year.
- Bell Island Cable replacement is ongoing.
- Work has started on the SCADA system replacement, slated for 2015 – 2016.

### Vale

- \$500,000 in small projects for this year.
- \$75,000 for changes to onsite generation that can supply to the grid. Vale noted that this has not been approved yet.

### Deer Lake Power

- Replacement of penstocks in 2014 and 2015. Current ones there since 1955. One being completed this year and two will be completed next year. Total cost will be \$7 - \$12 million.
- Some work this year on cleaning of generators.
- There will be breaker and relay work completed during the September mill shutdown.

## 7. Load Forecast

### Newfoundland and Labrador Hydro

A table of load growth for Hydro's rural areas was presented. It shows a decrease in the annual peak and annual energy of between 0.5 and 2.0 percent from base levels. The table is as follows:

Year	Demand		Energy	
	(MW)	% Change	(GWh)	% Change
2011 A	95.5	17.0%	437.6	7.7%
2012 A	88.8	-7.0%	445.6	1.8%
2013 A	95.9	7.9%	458.0	2.8%
2014	95.4	-0.5%	467.5	2.1%
2015	95.2	-0.2%	463.9	-0.8%
2016	93.3	-2.0%	461.1	-0.6%
2017	91.6	-1.8%	439.5	-4.7%
2018	90.5	-1.2%	433.2	-1.4%

### Newfoundland Power

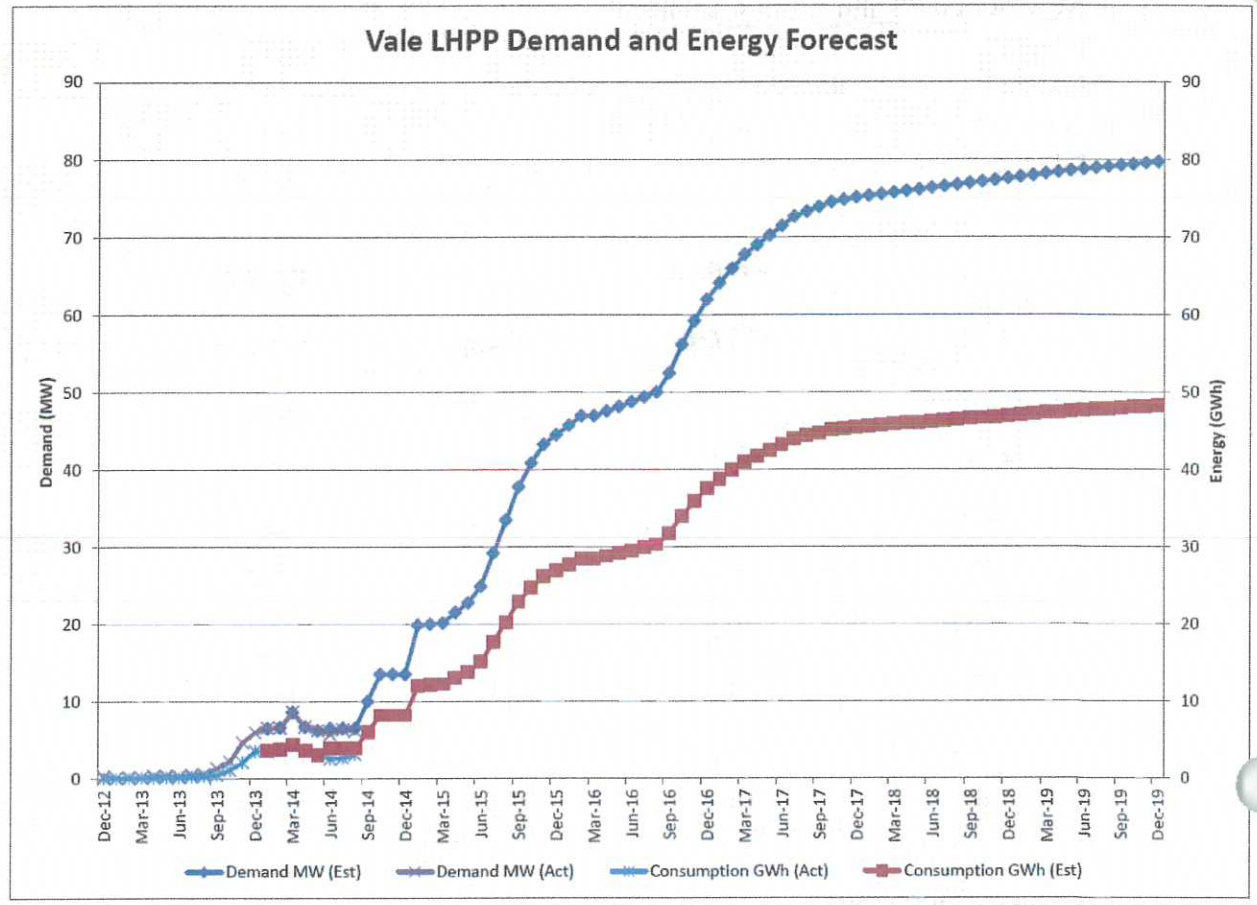
Newfoundland Power forecasts a 2.5 percent energy growth this year. There is a 1.4 percent projected increase in the total number of customers.

In 2013, there was a 2.0 percent energy growth and 1.6 percent growth in total number of customers.

### Vale

Vale will soon be going to the ramp up period as per the power service contract. They will then declare a monthly power on order amount.

Vale also presented their load forecast. The following graph indicates the forecast load.



### Deer Lake Power

Deer Lake Power noted they are working with the TakeCharge program within NLH on the industrial rebate program. They are working together to increase efficiency to reduce demand. The results to date have been very positive.

## 8. Rate Stabilization Plan (RSP)

### Newfoundland and Labrador Hydro

The rate stabilization plan balances were reviewed with the following highlighted:

- 2013 Review
  - Hydraulic Production
    - o 222 GWh more than cost of service (\$20.4 M credit)
    - o \$56.5 M balance at year end
    - o \$16.7 M allocated back to customers
  - Fuel price impact
    - o 1.6 barrels consumed
    - o Cost \$51.16/bbl more than cost of service
    - o \$82.1 M due to customers
  - Year end balances
    - o NP Customers - \$80.2 M credit
    - o Industrial customers - \$0.5 M debit
- To date in 2014
  - Hydraulic Production
    - o 269 GWh more than cost of service (\$23.6 M credit)
    - o \$66.1 M credit balance at the end of July
  - Fuel price impact
    - o 1.5 barrels consumed
    - o Cost \$56.53/bbl more than cost of service
    - o \$84.8 M due to customers
  - 2014 balances (Up to July 31<sup>st</sup>)
    - o Utility Customer - \$29.6 M credit
    - o Industrial customers - \$5.3 M debit
    - o Hydraulic - \$66.1 M credit
    - o Utility Load - \$0.3 M debit
    - o Industrial Load - \$25.0 M credit
    - o Utility RSP - \$120.3 M credit
    - o Industrial RSP - \$10.9 M credit

## 9. Reliability Performance

### Newfoundland and Labrador Hydro

Hydro's reliability performance was reviewed. The following were highlighted:

- Unsupplied energy (MW-Mins) is above target for 2014. NLH has had an increase in this in both 2013 and 2014

Year	Planned	Forced	UFLS	Combined
2014 YTD	7,635	229,429	4,243	241,307
2014 T	11,500	16,000	2,500	30,000

- The number of under-frequency events has been averaging at 6 per year between 2009 and 2013. In 2014, there have been 10 to date.
- The System Average Interruption Frequency Index (SAIFI) for 2013 was
  - Newfoundland Power : 1.2 interruptions per delivery point
  - Industrial : 0.7 interruptions per delivery point
- The System Average Interruption Duration Index (SAIDI) for 2013 was
  - Newfoundland Power: 156 minutes per delivery point
  - Industrial Customers: 279 minutes per delivery point

### Newfoundland Power

Newfoundland Power provided the following information:

	August 31	Target August	Target Year End 2014
SAIFI	1.34	1.14	1.71
SAIDI	1.71	1.45	2.41

## 10. Control Room

### Newfoundland and Labrador Hydro

- ECC uses an electronic application for the Work Protection Code (WPC). This is now fully functional as the testing portion of the application went in production in March of this year.
- ECC completes annual refresher training in the WPC using customized online training.
- One training session using the Operator Training Simulator has been completed to date. Another session is planned for the fall timeframe.
- A Backup Control Centre exercise will take place in October.

- ECC staffing
  - One new System Operator trained, started in the shift rotation in June
  - Two System Operators currently in training. One will be on shift the end of 2014. The other is from Holyrood and will return to the plant in April 2015.
  - A new System Operator Trainee is being recruited.
- ECC modifications
  - Currently looking at the requirements for modifications to the ECC when Muskrat Falls comes on stream.

#### Newfoundland Power

Newfoundland Power has a control room staff of 12, structured using four 3-person teams. They have potential retirements in the next 2 – 3 years.

Other items discussed:

- SCADA system replacement has started. Scheduled to be in service in 2016.
- There will be changes to the mobile radio system. NP will be transferring to the Aliant passport system.

#### Vale

Vale are starting to ramp up their production and are starting to staff up their control room for the facility.

#### Action items

- Jason Tobin to follow up with Vale regarding a communications protocol for the Vale control room and the Energy Control Centre.
- Richard White to provide contact number for the Vale control room.

#### Deer Lake Power

Deer Lake Power currently has a full complement of operators. They also recently signed a Memorandum of Understanding (MOU) with NLH and the government for the apprenticeship program.

### **11. Other Items**

- Discussed ways to try and improve the meetings and participation. Things like time of year and topics of interest.
- NP and NLH suggested that outage coordination meetings should happen early in the year (i.e. March/Early April).
- Bob Butler discussed the Automatic Generation Control (AGC) application used in the ECC and how NLH will be modifying this to look at the total island generation. This would now include generation from NP and Deer Lake Power.

**12. Next Meeting's Host**

Newfoundland Power will host the meeting in 2015. The time and date will be determined. However, consensus among the group is to hold the meeting in May, as has been done in past years.

The session concluded at 2:30 pm.