[redacted]

From: Maurice E. Adams [redacted]
Sent: April-27-14 8:17 PM
To: Cheryl Blundon
Subject: NEWFOUNDLAND AND LABRADOR HYDRO Addition of 100 MW of Combustion Turbine Generation at the Holyrood Thermal Generating Station

Good day Ms. Blundon,

I wish to go on record as opposing NL Hydro's application for the addition of a 100 MW combustion turbine generator at Holyrood.

Rationale

1. NL Hydro's Least Cost/CPW planning criteria:

NL Hydro's application (page 12, Glossary, Least Cost) states, in part, that *"For Hydro, the outcome of the generation planning analysis is Cumulative Present Worth (CPW), which is the present value of all incremental utility capital and operating costs incurred by Hydro to reliably meet a specific load forecast given a prescribed set of reliability criteria. Where the cost of one alternative supply future for the grid has a lower CPW than another, the option with the lower CPW would normally be recommended by Hydro, consistent with the provision of mandated least cost electricity service"*

Since NL Hydro has not used a life-cycle, CPW methodology (where operating and maintenance costs are included) to reach its conclusions and recommendation, then I would submit that NL Hydro has not rationally demonstrated that a 100 MW combustion turbine is best suited to meet the island's short term reliability and least-cost needs.

2. Immediate and short term needs:

The immediate and short term need (as confirmed by NL Hydro's application, page 7) is to provide reliable power (consistent with the mandate to provide least cost electricity service) for *"...the short term, from now until December 2015".*

On the one hand, NL Hydro confirms that "...***in the short term, from now until December 2015****, what is needed is a firm increase in generation,* ***or an equivalently firm reduction in***

demand on the Avalon Peninsula, to obtain both transmission and system capacity benefits (emphasis added) *."*

On the other hand, NL Hydro also states that *"The generation capacity reliability criteria can be met using Base Case assumptions by **either** a 60 MW combustion turbine **or** with 60 MW of interruptible load. While **interruptible load may satisfy capacity reliability criteria**, it does not provide the same immediate or long term benefits provided by a combustion turbine located at Holyrood* (emphasis added)*."*

However, the island requirement is not to select the option that satisfies the "**same** immediate" or the "long term" benefits provided by a combustion turbine. What is required is the best, least-cost option that will ***"satisfy capacity reliability criteria ...* for the immediate and short term"**, and at the least cost to ratepayers.

Accordingly, NL Hydro states that a 60MW interruptible load can also ***"satisfy capacity reliability criteria ...* for the immediate and short term".**

Furthermore, if NL Hydro argues that a combustion turbine is the best and least-cost option because of its long term benefits, then all the more reason why such a claim requires a life-cycle, CPW cost-comparative analysis (which would need to include operating and maintenance costs and compare the long term benefits of a combustion turbine with the proven benefits of other options available both in the short term and in the more medium and longer term).

3. Other options:

NL Hydro's application, confirms that "*Over time, enhanced CDM programs will serve to better manage overall system demand...Capacity and demand reductions are also achievable through CDM once the necessary planning steps have taken place … updating the marginal cost study to reflect current system realities is the first step in that process. An assessment of the current opportunities for demand savings through an updated conservation potential study is also needed. This will confirm which technologies are currently being used by customers and assist in defining the magnitude of new technology opportunities for demand reduction in existence. The utilities undertook a CDM Potential Study in 2008 and are planning to begin an update in 2014 to reflect the changes in the customer market and technology developments. The 2008 study did not explore demand opportunities as capacity was not driving costs on the system. The planned update will address this issue"*

Given that NL Hydro's 2008 CDM Potential Study *"did not explore demand opportunities.."*, how then can NL Hydro's current application be evidence-based and how therefore can NL Hydro rationally conclude that a 100 MW combustion turbine is the best and least-cost option?

NL Hydro states that "*The current focus of CDM programs has been energy conservation as it is tied to reducing fuel use, primarily at Holyrood".*

While there is a significant difference between conservation and efficiency, there is little or nothing in NL Hydro's application that recognizes the critical distinction between the two.

Accordingly, the application provides insufficient evidence to rationally conclude that CDM (combined with other suitable options) could not provide the required short and long term reliability and least-cost that is needed.

4. Preliminary evidence

In December 2013, I retrofitted my 33-year old home with a mini-split heat pump for an installed price of $4,633. Compared to the three, one-month periods last year (mid-January to mid-February, mid-February to mid-March, and mid-March to mid-April), my energy usage went down 28%, 19% and 22% respectively.

Given that this year had record cold temperatures, last year had record warm temperatures, and given that I am currently utilizing only about 50% of the heat pumps 24,000 BTU capacity, I would submit that with the system capacity being fully utilized, under normal, weather-adjusted circumstances savings would likely be substantially higher than my recorded 23% average. It should also be noted that my residence has had no insulation upgrades since it was constructed in 1981.

For $120 million dollars, approximately 26,000 Avalon Peninsula homes could be retrofitted with mini-split heat pumps, resulting in substantial energy use reductions, substantial cost savings (in the ballpark of $25-$30 million per year), and given that a heat pump's most efficient operating mode avoids the up and down thermostat fluctuations currently recommended by NL Hydro and NL Power (thereby further helping reduce peak demand levels), then I would submit that while there is some evidence that there are options (other than additional thermal generation) that would meet the island's short term reliability and least-cost criteria, there is no, or at least, insufficient grounds and a lack of evidence in NL Hydro's application to support a decision by the Board granting approval for NL Hydro to purchase a long term solution, a combustion turbine to solve what has been described as a short term problem.

5. Facts (evidence-based)

Average daily energy use (Kwh)*

	Mid-January to Mid-February	Mid-February to Mid-March	Mid-March to Mid-April
2013	**112**	**100**	**87**
2014	**81**	**81**	**68**

Summary

During (and since) the extraordinary events that helped bring about the application that is now before this Board, no word has been uttered more loudly and more frequently than --- "conservation".

And no more profound statement has been uttered than that by a government MHA when he rose during the last session of the House of Assembly and said that he had finally come to realize that the lowest possible cost power is "that which is not used".

While it is noteworthy that NL Hydro plans to update its Study on Conservation and Demand Management, I would suggest that it is not in the best interest of either NL Hydro or NL Power to see a significant reduction in energy use on the island, and that brings into question whether these utilities, who need high energy usage for their revenue, can be relied on to to place the

best interest of ratepayers first.

I would respectfully submit that NL Hydro's and NL Power's record of inadequate study, marketing and planning around the issue of energy usage and peak demand reduction (conservation and efficiency) is in and of itself sufficient evidence (and Liberty Consulting's failure to also say even one word on the issue), and even though conservation and efficiency was a key issue the Board had listed for Liberty to consider, the foregoing (I would submit) provides reason for the Board to acquire additional outside expertise if, in its wisdom, it concludes that this issue requires some independent, current and creative thought --- thought that will put the needs of ratepayers first.

Accordingly, I would request that NL Hydro's application for the supply and installation of a $120 millon combustion turbine be rejected, and that the Board expeditiously acquire the quality and level of expertise in the area of conservation and efficiency that is needed to assist it in integrating the truly lowest cost power option into the island's immediate, short and long-term energy needs.

*Copies of power bills available on request.

With respect,

Maurice E. Adams