Q. Section 7 Corner Brook Pulp and Paper Frequency Converter page 50, lines 3 to 7: In tabular format, please provide details of all specific instances since 2007 in which the Corner Brook Pulp and Paper frequency converter was operated for Island Interconnected grid support (excluding the most recent winter period). The information should include date, time and any known details around the circumstances prompting Hydro's request.

A. In respect of "Island Interconnected grid support" there are two concepts of relevance.

The first is the concept of net deliveries to the grid (i.e., power flowing from CBPP facilities to the Island Interconnected System). InterGroup is not aware of any instances since 2007 where the CBPP frequency converter was operated for the purposes of providing CBPP generation to serve as net deliveries to the Island Interconnected system (during the January 2014 outages). This approach to COS allocation based on "quantity provided" however is not determinative to allocation. For example, Hydro continues to apply a "generation credit" in the COS to the NP thermal generation despite this generation having provided a total of only 0.402 GW.h in 2009, 0.832 GW.h in 2013, and no generation for grid supply in 2010-2012[1].

The second concept of grid support is the very presence of the load and generation of CBPP in terms of the overall transmission and generation grid stability (e.g., what is sometimes termed "ancillary services"). For a discussion of these aspects, please see Appendix C to the InterGroup Pre-Filed Testimony and the response to NLH-16 from the Hydro's 2001 GRA which is provided as Attachment 1 to this response[2].

[1] IC-NLH-051.
[2] Source for NLH-16 from the 2001 GRA is: http://www.pub.nf.ca/hyd01gra/filings/hydresp/Hydro/NLH%20%2016.pdf

Q. (Re: p.11 - Converters)

(a) What is Grand Falls' plan with respect to 50 Hz operation and conversion to 60 Hz of the ACI mill in the next 5 years? Why?

(b) What is Corner Brook Pulp and Paper's plan with respect to 50 Hz operation and conversion to 60 Hz of their mill in Corner Brook? Why?

(c) Which customers require and control the need for the frequency converters at this time?

(d) If the frequency converter at Corner Brook failed and was out of service for one month, what would the impact be to Corner Brook Pulp and paper? What would the impact be to other Hydro customers?

A.

(a) ACI Grand Falls plans to decommission the Grand Falls Frequency Converter in the spring of 2002 as part of the conversion to 60 HZ of the Bishop's Falls generation. All mill 50 HZ loads will be converted to 60 HZ by that time. Engineering is currently ongoing. This will bring the mill and its generating facilities to a common standard of 60 HZ. We will also decommission some aging 50 HZ unit substations.

(b) CBPP's 50 Hz load is about 18,000 kilowatts. This load is directly associated with production equipment, namely, numbers 1 and 4 paper machines. The total cost for CBPP to implement conversion to 60 Hz includes:

The cost of converting paper mill/machine equipment
The cost of converting generation/transmission assets
The cost (lost revenue) of lost production

Equipment conversion to 60 Hz is technically feasible. However, the total cost to implement conversion would be in excess of $20 million and such conversion would not be cost effective nor contribute to improved product quality. Hence, CBPP plans to continue utilizing energy at 50 Hz.

(c) CBPP (division Deer Lake Power) has approximately 100,000 kilowatts of 60 Hz generation capability which includes 20,000 kilowatts of 50 Hz generation converted to 60 Hz through the frequency converter. The frequency converter is required to convert the 20,000 kilowatts of 50 Hz generation to 60 Hz. This energy is usually used by CBPP but has been used by Hydro to facilitate scheduled maintenance at the Massey Drive and Deer Lake terminal stations, thus avoiding total interruptions to domestic loads (Newfoundland Power) in the Corner Brook/Deer Lake areas. Under system transmission emergencies affecting Western Newfoundland, Hydro would use CBPP's 100,000 kilowatts of 60 Hz generation capability made possible, in part, by the frequency converter.

ACI-Grand Falls requires the frequency converter to keep the integrity of the 50 Hz supply intact until the converter has been decommissioned as referred to in (a) above so that there is not a risk to mill operations. As with CBPP, the power can be made available to the grid in system transmission emergencies.

(d) Under existing arrangements, during frequency converter outages, replacement 60 Hz power and energy is provided to the paper mill by Hydro without a demand charge – energy provided is paid at the industrial rate. Extended outages of the frequency converter would potentially affect all customers on the grid, especially Newfoundland Power, in that:

(i) during system emergency in the Corner Brook/Deer Lake areas, approximately 20,000 kilowatts of generation capability would not be available;

(ii) loss of load probability would be affected;

(iii) the availability of interruptible power to other customers could be affected.