**Volume 1, Section 3 – Finance**

**Q. (pages 86 – 89) Based on a statistical analysis of the volatility of the hydrology and weather that determine the annual financial impact of deviations from the norm on the Weather Normalization Reserve, please provide the expected value and variance of the change in the Reserve during the 2008 test year.**

A. ***Hydro Component***

Newfoundland Power's current hydroelectric normal production estimates are based on the comprehensive *Water Management Study* conducted by Acres International in December 2000 and filed with the Board (the "Water Management Study"). In 2005, the Company requested that Acres update the Water Management Study to incorporate new data available from the preceding 5-year period.[1] The Water Management Study update is the basis for the normal values used in computing transfers to the Hydro Component since January 1, 2006.

Normal production is the hydroelectric energy that would be produced in an average water year based on the current dam storage capability and current plant efficiencies. Estimates for normal production are based on results of computer models, which simulate anticipated watershed inflows based on actual historical records, and incorporate the characteristics of the existing plant infrastructure, such as dam storage and plant efficiencies. The model results are further adjusted to account for station service and practicalities of operation. The normal production figure is a forward-looking estimate of plant production.

Newfoundland Power's estimate of normal production for its hydroelectric generating facilities is adjusted annually, as necessary, to reflect physical plant changes and scheduled plant availability.

The forecast hydraulic production in the 2008 test year equals the normal, based on the updated Water Management Study and incorporating physical plant changes and scheduled plant availability. On this basis, the expected value of hydraulic production for the 2008 test year is 425.8 GWh.

The standard deviation of the differences from the normal since the implementation of the revised methodology in 2000 was 20.6 GWh. This represents a coefficient of variation of 5.0% (i.e., standard deviation divided by the mean). A 20.6 GWh variance is equal to a transfer to or from the weather normalization reserve of $1.19 million.[2]

[1] The Water Management Study update was filed with the Board in January 2006.

[2] 20.6 GWh x 1,000,000 kWh/GWh x 0.08805 $/kWh x (0.655 (1-Income Tax Rate)). 0.08805 $/kWh is the tail block energy rate component of the wholesale rate charged to Newfoundland Power by Newfoundland and Labrador Hydro.

***Weather Component***

Normal weather is computed separately for temperature (using a degree-day method) and wind speed for each of four weather stations in the Newfoundland Power service area (St. John's, Gander, Corner Brook and Stephenville). A 30-year average is used to compute the normal for each weather variable based on information from each weather office.

The Company has reviewed the methodology used to compute the reserve adjustments and has concluded that the normalization method continues to provide a reasonable estimate of the impact of abnormal weather on energy usage. The increase in the Degree Day Component balance is directly related to warmer than normal weather conditions experienced in the Company's service area over the past 5 years.

The Company's forecast of sales and purchases for the 2008 test year is based on normal weather conditions. The 2008 expected transfer to the reserve will depend on how actual weather compares to normal weather. The Company has no basis on which to project a 2008 transfer to, or from, the reserve. Therefore, there is no expected change in the Reserve related to weather for 2008.

The variability of weather that has resulted in the current balance in the Degree Day Component of the reserve is summarized as follows. From 2002 to 2006, actual heating degree days were on average 5.4 percent warmer than normal in St. John's, 6.2 percent warmer than normal in Gander, 5.4 percent warmer than normal in Corner Brook and 4.9 percent warmer than normal in Stephenville. During the same period, average wind speed was lower than normal by 8.6 percent in St. John's, 5.4 percent in both Gander and Corner Brook, and by 5.5 percent in Stephenville.

The impacts of abnormal weather on reserve transfers can differ materially depending on the area, or areas, in which abnormal weather occurs and the customer class breakdown within each area. Because of the complexity of these dynamics, Newfoundland Power is unable to provide a conversion of weather variability to reserve transfer variability based on a statistical analysis at this time.