Q. Please provide a schedule detailing the maximum extent to which NP can utilize increased hydro production from its other hydraulic generation facilities to make up the spill from the Rattling Brook facility during the refurbishment project under normal rainfall and flow conditions to reduce the amount of replacement energy assumed in the NP 2007 Application.

A. Newfoundland Power currently operates its hydraulic generation to (i) maximize its production at each of its hydro plants and (ii) ensure availability of capacity during the winter months (December through March). To meet these operating requirements, Newfoundland Power will be practically unable to increase hydro production from other facilities to make up the spill from Rattling Brook under normal rainfall and stream flow conditions.

Changes in forecast hydro production due to variations from normal stream flows will not impact the cost of replacement energy. Any costs or savings related to stream flow variations from normal are charged or credited to the Hydro Production Equalization component of the Weather Normalization Reserve.

Attachment A provides a summary of the Weather Normalization Reserve methodology.

As well, operation of the Hydro Production Equalization Reserve is dealt with at page 9, line 12 to page 10, line 13 of Newfoundland Power's Prefiled Evidence.

Weather Normalization Method

1.0 Background

Newfoundland Power's Weather Normalization Reserve consists of the following two components:

1. the Hydro Production Equalization Reserve established by the Board in Order No. P.U. 32 (1968) to normalize Newfoundland Power's purchased power costs for variations in Newfoundland Power's hydroelectric production due to stream-flows that are either above or below normal in any given year; and,
2. the Degree Day Normalization Reserve established by the Board in Order No. P.U. 1 (1974) to normalize Newfoundland Power's revenue and purchased power costs for the effects of abnormal weather conditions.

The purpose of the Weather Normalization Reserve is to stabilize rates for customers. Newfoundland Power's annual revenue and purchased power expense on its financial statements are reflective of normal weather and normal stream-flows to its hydro plants.

The calculations supporting transfers to, or from, the Weather Normalization Reserve are reviewed annually by the Board. The Board has issued orders approving the balance in the reserve for each year from 1974 to present.

A summary of the mechanics to determine the monthly adjustment for each reserve component is provided below:

1.1 Mechanics of Hydro Production Equalization Adjustment

The Hydro Production Equalization Reserve enables Newfoundland Power to normalize its purchased power expense for annual variations in normal stream-flows to its hydro plants. If cumulative stream-flows are below normal for the year, the Reserve is debited in an amount

equal to the cost of increased purchases from Hydro. Conversely, if cumulative stream-flows are above normal for the year, the Reserve is credited with an amount equal to the savings from reduced purchases from Hydro.

The calculation for the 2005 year-end adjustment to the Hydro Production Equalization Reserve is provided below:

Calculation of Hydro Production Equalization Reserve Transfer

2005

Average Natural Flow (GWh)		426.1
Less: Actual Natural Flow (GWh)		449.1
Equals: Gross Variation (GWh)		(23.0)
Times the End block Purchased Power Rate (in mills)	x 47.00	
Equals: Variation in Purchased Power Expense		$1,079,000
Less: Income Tax @ 35%		$ 377,650
Net Transfer (To) From Reserve		($ 701,350)

Therefore, because stream-flows were 23.0 GWh above normal in 2001, Newfoundland Power purchased 23.0 GWh less from Hydro. To offset the impact on earnings, the after-tax effect of the reduced purchased power expense was credited to the Hydro Production Equalization Reserve.

1.2 Mechanics of Degree-Day Normalization Adjustment

The Degree-Day Normalization Reserve enables Newfoundland Power to normalize its sales and purchases for annual variations in weather (i.e., specifically temperature and wind). In general, if the weather is colder than normal in a particular year, Newfoundland Power deposits the additional earnings to the Degree Day Normalization Reserve. And, if the weather is warmer than normal in a particular year, Newfoundland Power recovers the lost earnings from the Degree Day Normalization Reserve.

Econometric modelling is used to determine the change in customer's usage resulting from a unit variation in normal monthly weather[1]. The factors derived for each rate class are referred to as normalization coefficients. The equations below provide a summary of the math used in calculating the monthly adjustments for each rate class:

Monthly Adjustment (MWh) = (Normal Weather – Actual Weather) x Normalization Coefficient

Weather Normalized Sales = Actual Sales + Monthly Sales Adjustment

Weather Normalized Purchases = Actual Purchases + Monthly Purchases Adjustment

The monthly energy adjustments are then converted to revenue and purchased power expense adjustments. The revenue adjustment equals the sales adjustment times the end block energy rate for the class. The revenue adjustments by class are then totalled to determine the total revenue adjustment for the month. The purchased power expense adjustment equals the total of the purchase adjustments for each class multiplied by the purchased power end block mill rate. The net adjustment for the month equals the total revenue adjustment less the total purchased power expense adjustment. The net adjustment less income taxes is transferred to (or from) the Degree Day Normalization Reserve.

The Board approved an updated Degree Day Normalization methodology in 1995. The coefficients and normals used in calculating adjustments are adjusted annually and provided to the Board in January of each year.

[1] The Company uses a degree-day variable to measure temperature and average daily wind speed to measure wind speed.