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**Pierre's Brook Plant Penstock and Surge Tank (Pooled, Multi-Year),  
2015 - \$750,000 2016 - \$13,530,000**

**In view of Muskrat Falls Hydroelectric Project please calculate the levelized cost of energy if the recovery period is four years, to 2018, and seven years, to 2021.**

**A. 1. Introduction*****Pierre's Brook Plant Rehabilitation***

Refurbishment of Newfoundland Power's Pierre's Brook hydroelectric generating plant ("Pierre's Brook Plant") as proposed in the Company's 2015 Capital Budget Application is consistent with the least cost provision of energy to the customers of Newfoundland Power following commissioning of the Muskrat Falls Project.

Please see the response to Request for Information NLH-NP-007 for a comparison of the cost of future energy alternatives.

Accordingly, the commissioning of the Muskrat Falls Project should not affect the period over which an evaluation of the costs of refurbishment of the Pierre's Brook Plant is undertaken. In addition, the Pierre's Brook Plant provides system benefits in addition to least cost energy supply to the Island Interconnected System.

***Additional System Benefits***

Pierre's Brook Plant is located on the Avalon Peninsula approximately 30 km south of the St. John's area. This provides electrical system benefits during both normal operation and emergencies.

Under normal operating conditions the Company's hydro plants on the Avalon Peninsula are frequently called upon by Hydro to provide voltage support to the system. Increasing voltage at the eastern end of Hydro's transmission system improves the transfer capability of Hydro's 230 kV transmission lines from Bay d'Espoir and Central Newfoundland.

Under emergency operating conditions, following storms and equipment failures, local generation provided by the Company's hydro plants provides service to customers while the high voltage electricity system is being restored. For example, the Company's hydro plants on the Southern Shore of the Avalon Peninsula, including Pierre's Brook Plant, can supply priority customers such as hospitals when the bulk transmission system feeding the St. John's area is unavailable.

Following the commissioning of Muskrat Falls, the Holyrood Thermal Generating Station is expected to be decommissioned. This will result in more of Hydro's generating facilities being farther away from the largest load on the island of Newfoundland than is currently the case. In these circumstances, the system reliability benefits of Newfoundland Power's generating facilities, particularly during emergencies, may be increased.

The commissioning of Muskrat Falls and the Labrador-Island Link does not eliminate the need for additional generation on the Island in the foreseeable future. Based on Manitoba Hydro's October 2012 review of the Muskrat Falls and Labrador-Island Link projects, additional generating capacity is expected to be required on the Island in the 2030 timeframe.<sup>1</sup> Reducing Newfoundland Power's generating capacity in advance of 2030 could well advance the need for additional generation.

## 2. Requested Calculation

### *Requested Calculation*

Table 1 shows the levelized cost of energy production for the proposed refurbishment of the Pierre's Brook Plant if the cost is recovered over four years, to 2018; seven years, to 2021; and fifty years, to 2064.

**Table 1**  
**Cost of Energy Production**  
**at Various Recovery Periods**  
**(¢/kWh)**

	<b>4 years</b>	<b>7 years</b>	<b>50 years</b>
Pierre's Brook Plant Rehabilitation	18.22	11.56	4.87

The avoided cost of fuel at the Holyrood Thermal Generating Station is currently estimated at 16.76¢ per kWh.<sup>2</sup> Based on the requested calculations, the only scenario which results in the cost of production being higher than the avoided cost of fuel at Holyrood is the scenario where the cost of the Pierre's Brook project is recovered over 4 years.

<sup>1</sup> In Figure 1 on page 13 of the Manitoba Hydro *Review of the Muskrat Falls and Labrador Island HVdc Link*, October 2012 filed as Appendix D of Hydro's application for the Installation of 100MW of CT Generation, the need for additional generation on the Island after the integration of the Muskrat Falls and Labrador-Island HVdc Link is illustrated.

<sup>2</sup> This is based upon a 630 kWh/barrel conversion efficiency and oil price forecast of \$105.60 per barrel for 2014 as per Hydro's April 30<sup>th</sup>, 2014, letter to the Board regarding Rate Stabilization Plan – Fuel Price Projection.

***Appropriate Evaluation Criteria***

Evaluating the proposed refurbishment of the Pierre's Brook Plant over 4 and 7 year timeframes is not appropriate.

Pierre's Brook Plant is expected to remain in service for more than 50 years and benefits will accrue to the electricity system and Newfoundland Power's customers throughout this period. Accordingly, use of very short cost recovery periods for economic evaluation does not appropriately match costs and benefits.

The feasibility analysis provided in the Application includes all forecast operating and capital costs for the refurbishment of Pierre's Brook Plant over its *expected service life*. The matching of utility costs with the associated benefits to consumers is a cornerstone of cost of service regulation. Because of this, the levelized cost provided in the Application is the appropriate evaluation criteria for this project.

Newfoundland Power observes that the values for energy production requested in this Request for Information could only be relevant to the justification of this project if the economic value of the production from existing hydroelectric plants on the island was assumed to be zero once the Muskrat Falls project (and its associated transmission interconnection) is complete. This is not supported on the basis of the evidence before the Board. In fact, the evidence indicates the contrary.<sup>3</sup>

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<sup>3</sup> See the response to Request for Information NLH-NP-007.