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DELIVERED BY HAND

April 25, 2014

Board of Commissioners
of Public Utilities
P.O. Box 21040
120 Torbay Road
St. John's, NL A1A 5B2

Attention: G. Cheryl Blundon
Director of Corporate Services
and Board Secretary

Ladies and Gentlemen:

Re: Newfoundland and Labrador Hydro's 2013 General Rate Application

Please find enclosed the original and twelve copies of Expert Evidence of Mr. Larry Brockman of Brockman Consulting.

The enclosure is intended to provide the Board with additional evidence to assist it in considering Hydro's 2013 General Rate Application.

We trust the foregoing and enclosed are found to be in order. However, if you have any questions whatsoever, please feel free to contact us.

Copies of the enclosure and this correspondence have been forwarded directly to the parties indicated below.

Yours very truly,

Gerard M. Hayes
Senior Counsel

Enclosures

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Thomas O'Reilly, QC
Vale Newfoundland and Labrador Limited

Yvonne Jones, MP
Labrador

IN THE MATTER OF the Public Utilities Act, R.S.N. 1990, Chapter P-47 (the Act), and

IN THE MATTER OF a General Rate Application (the Application) by Newfoundland and Labrador Hydro for approvals of, under Section 70 of the Act, changes in the rates to be charged for the supply of power and energy to Newfoundland Power, Rural Customers and Industrial Customers; and under Section 71 of the Act, changes in the Rules and Regulations applicable to the supply of electricity to Rural Customers.

Prefiled Evidence and Exhibit of
Larry Brockman

Testimony on Behalf of Newfoundland Power

Brockman Consulting

NEWFOUNDLAND POWER
A FORTIS COMPANY

At the hearing into Newfoundland and Labrador Hydro's 2013 General Rate Application, the Rates and Cost of Service Expert Evidence will be adopted by Larry Brockman, President of Brockman Consulting based in Atlanta, Georgia.

A witness profile for Larry Brockman follows.

Larry Brockman

President of Brockman Consulting

Atlanta, Georgia

Larry Brockman has over 36 years experience as a power system planning engineer, rate designer, regulatory staff member and consultant and specializes in regulatory and generation planning assistance and analysis, as well as the analysis of competitive generation markets.

Mr. Brockman has appeared before the Board of Commissioners of Public Utilities of Newfoundland and Labrador on numerous occasions as an expert witness. He has presented evidence on behalf of Newfoundland Power Inc, concerning cost of service, rate design and least cost planning in Newfoundland and Labrador Hydro's 1990, 1992, 2001, 2003 and 2006 general rate referrals, as well as in Newfoundland and Labrador Hydro's 1992 generic cost of service hearing, the 1995 Rural Rate Inquiry and Newfoundland and Labrador Hydro's 2009 and 2013 Applications concerning the Rate Stabilization Plan and Industrial Rates. Mr. Brockman also appeared as an expert witness on cost of service and rate design on behalf of Newfoundland Power in 1996 and 2003 Newfoundland Power General Rate Applications.

A more detailed description of Mr. Brockman's professional background is provided as Exhibit LBB-1 to this evidence.

NEWFOUNDLAND AND LABRADOR HYDRO

2013 GENERAL RATE APPLICATION

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1.0 INTRODUCTION

On July 30, 2013, Newfoundland and Labrador Hydro ("Hydro") filed a General Rate Application (the "Application") with the Board of Commissioners of Public Utilities of Newfoundland and Labrador (the "Board") requesting a general rate increase and certain other changes, including changes to Newfoundland Power's rates.

Newfoundland Power asked Brockman Consulting to review the Application and evidence with regard to whether Hydro's proposals are just and reasonable and meet good regulatory practice in the areas of:

1. Newfoundland Power Rate Design;
2. Treatment of Newfoundland Power's Curtailable Load;
3. Test Year Issues.

The purpose of my testimony is to summarize this review.

2.0 RATE DESIGN

Hydro is proposing changes to the demand and energy rates of Newfoundland Power. I was asked to examine these changes in light of generally accepted ratemaking principles.

2.1 Principles of Sound Rate Design

Certain principles of sound ratemaking have become generally accepted across North America. They are commonly referred to as Bonbright's Principles, since Bonbright was the first economist to memorialize them in print. This Board has included its own statement of Bonbright's Principles in its recent general rate orders. In that regard, the Board has noted that sound regulatory practices encompass the following fundamental principles:[1]

<u>Fair Return</u> - Regulated utilities are entitled to an opportunity to earn a fair rate of return. The opportunity to earn a fair return is accomplished by setting the proper revenue requirements, based on fair return on rate base and inclusion of prudent expenses in the revenue requirements set in a rate case test year, and then setting rates to recover those amounts with an assumed set of billing determinants for the rate year.[2]

<u>Cost of Service</u> - Regulated utilities are permitted to charge rates that allow recovery of costs that, among other things, are prudent, assigned based on causality and recovered during the same period in which they were incurred.

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[1] The Board recently described its version of Bonbright's Principles in a section titled "Regulatory Principles" in Order No. P.U. 32 (2007).

[2] Billing determinants are the units of each type (energy, demand, number of customers, etc.) the utility expects during the year.

<u>Fair Cost Apportionment</u> - Apportionment of the total cost of service in rates among different ratepayers should avoid arbitrariness, capriciousness, inequity and discrimination.

<u>Efficiencies</u> - Rates should discourage wasteful use of electrical service, and encourage economically-justified use.

<u>Rate Stability and Predictability</u> - Rates and revenues should be stable and predictable from year to year, with a minimum of unexpected changes seriously adverse to either ratepayers or the utility.

<u>Practical Attributes</u> - Rates should be simple, understandable and publicly acceptable.

<u>End Result</u> - The end result of regulatory decisions should be fair, just and reasonable from the perspective of both the consumer and the utility.

2.2 Rate Design Process

The accepted principles of sound rate design have generally resulted in a set of procedures for designing sound rates. In their simplest form, these procedures may be summarized as follows:[3]

1. Determine revenue requirements;
2. Perform class cost-of-service study to determine revenue allocations by class and to obtain embedded unit costs;[4]

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[3] Rate design can involve more complex designs, such as blocked rates, special conditions, etc.

3. Perform marginal cost-of-service study to determine marginal unit costs;
4. Strive for fairness by setting rates close to embedded unit costs, but balance with efficiency by modifying the embedded unit costs with marginal unit costs;[5]
5. Examine resulting rates for stability, practicality, gradualism, customer impact, understandability, established regulatory policy, etc.;
6. Iterate, if necessary.

3.0 HYDRO'S RATE PROPOSAL FOR NEWFOUNDLAND POWER

Hydro's proposed changes to Newfoundland Power's rate are shown in Table 1.

Table 1
Proposed Changes to Newfoundland Power Rate[6]

	Current Rate (set in 2007)	Proposed	Increase (%)
Demand ($/kW/month)	4.00	9.12	128%
First Block (GWh)	250	280	12%
1st Block (mills/kWh)	32.46	27.86	(14.2%)
2nd Block (mills/kWh)	88.05	104.00	18.1%

My comments relate to the proposed increase in the demand component of Newfoundland Power's wholesale rate from $4.00 to $9.12 per kilowatt per month.

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4 Unit costs are the costs for providing the basic components of service, such as energy (per kWh), demand (per kW), and customer costs per month. See, for example, Hydro's cost of service study, Exhibit 13, Schedule 1.3, page 1 of 3.

5 Since they only reflect historic costs, embedded unit costs have little to do with efficiency. Marginal unit costs reflect the future and are accepted by most economists as being efficient.

6 Hydro Evidence, Table 4.1, page 4.4.

3.1 Background

A demand-energy rate for Newfoundland Power was first approved in Order No. P.U. 44 (2004).[7] The embedded cost-based demand charge approved by the Board was to have been phased in over a three-year period.[8]

Following Hydro's 2006 General Rate Application ("2006 GRA"), the demand charge then in effect was replaced by a demand charge that was negotiated by the parties and approved by the Board as part of a negotiated settlement of issues in the 2006 GRA. The negotiated demand charge of $4.00/kW/month was substantially lower than the $7.49/kW/month indicated in the 2007 test year cost of service study. The Board accepted the parties' submission that it was appropriate to reduce Hydro's demand charge to Newfoundland Power to better reflect the marginal capacity costs then indicated on the Island Interconnected System.[9]

The demand charge of $9.12/kW/month proposed in this Application was recommended in the rate design report of Hydro's cost of service expert, Lummus Consultants. Hydro's proposal, which will more than double Newfoundland Power's demand charge, appears to be based on Lummus Consultants' opinion that "there does not seem to be justification for muting the demand price signal by pricing [Newfoundland Power's] demand at less than the cost based rate."[10] The proposed demand charge is simply set to the fully embedded cost of capacity from the cost of service study, and does not explicitly reflect marginal cost considerations.[11]

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7 Prior to that time, Newfoundland Power's wholesale rate was an energy-only rate.

8 The initial monthly demand charge of $4.65/kW/month was to increase to $5.64/kW/month on January 1, 2006 and to $6.64/kW/month on January 1, 2007. The Board also approved a two-block energy rate structure, with the second block based on Holyrood fuel to reflect short-run marginal costs.

9 Order No. P.U. 8 (2007), page 38.

10 Exhibit 9, page 10.

11 Response to Request for Information CA-NLH-066.

3.2 Marginal Cost Considerations

Marginal costs reflect the economic theory that a society achieves its greatest efficiency when all goods and services are priced at marginal cost.[12] Marginal costs are often used in conjunction with embedded costs to design rates. The embedded costs are used to judge fairness of the rates and their sufficiency to recover revenue requirements, while marginal costs are used to adjust the rates to achieve the greatest efficiency.

At the time the demand-energy rate was first approved for Newfoundland Power, the Board acknowledged the importance of marginal cost considerations in designing wholesale rates. In Order No. P.U. 44 (2004), the Board stated that "…marginal costs should be the basis of future decision-making in the area of load management and should be considered in the design of wholesale rates."[13]

Given the Board's statement regarding the importance of marginal costs in the design of wholesale rates, it is not appropriate that Hydro determine Newfoundland Power's demand charge based solely on embedded costs. According to Hydro, marginal costs on the Island Interconnected system are uncertain. Nevertheless, certain observations can be made based on what we do know.

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[12] This principle is known as "Pareto Optimality" after the Italian economist who popularized the theory. At its heart, this principle means we price things high when they are relatively dear to society, and price them lower when they are more abundant. In that way, ratepayers are encouraged to consume, or not consume, based on what it costs society to provide the good or service.

[13] Hydro had been directed to file a marginal cost study with the Board by June 2006, and the Board indicated it would re-evaluate the structure and design of the wholesale demand and energy rate in light of the marginal costs indicated in the study. See Order No. P.U. 44 (2004), page 13, lines 22-26.

Significant generation and transmission additions to the Island Interconnected system will occur in the near term, including Muskrat Falls and the Labrador interconnection. In my experience, the marginal costs of capacity on a system will generally rise when a system is in need of capacity, and drop after large, efficient generating units are added. It is therefore reasonable to expect that the marginal costs of capacity on the Island Interconnected system will drop significantly after 2017, and stay relatively low for quite some time thereafter.

3.3 Recommendation

Rate stability and gradualism are important considerations in ratemaking. Hydro's proposal of a 128% increase in Newfoundland Power's demand charge is inconsistent with these principles. In this Application, Hydro has adopted a cautious approach to changing the Industrial Customer rate structure due to the uncertainty of future marginal costs.[14] In my view, a similarly cautious approach would be appropriate in relation to Newfoundland Power's demand charge.

More than doubling the demand charge as proposed in this Application is not appropriate in circumstances where the marginal costs of capacity are uncertain, and may in fact be substantially reduced in the relatively near term. In my view, it would be reasonable for the Board to consider limiting any increase in the demand charge to a modest amount, such as the overall percentage of increase in the Utility revenue requirement.

[14] Hydro Evidence, page 4.7, lines 10–12.

4.0 TREATMENT OF CURTAILABLE LOAD

4.1 Background

Newfoundland Power offers a curtailable service rate option to certain of its larger customers that can reduce their demand upon request during the winter peak period (the "Curtailable Service Option").[15] Participating customers that curtail successfully when requested receive a curtailment credit.[16]

The benefits of load curtailment accrue from several sources. In theory, because the utility can curtail customers at the time of system peaks, it does not have to build (or buy) as much peaking capacity to serve them. Customers' load curtailments reduce the native load of Newfoundland Power that is required to be supplied by Hydro. In addition, they offer operational flexibility in times of system capacity shortage. Under the Curtailable Service Option, the value of those benefits is shared with the participating customers.

4.2 2008 Review of Demand Billing

Because Newfoundland Power's billing demand is based on the highest peak during the winter season, Newfoundland Power currently has an incentive to reduce its peaks using the curtailable load. Newfoundland Power and Hydro have acknowledged that, from a system perspective, this is not the most effective use of the curtailable load.[17]

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[15] *Newfoundland Power Inc. Schedule of Rates, Rules & Regulations*, effective July 1, 2013, pages 27–28.

[16] During the 2012–2013 heating season, 21 Newfoundland Power customers participated in the Curtailable Service Option, providing approximately 13 MW of potential load curtailment. See *2013 Curtailable Service Option Report*, Newfoundland Power, April 19, 2013.

[17] As noted the *2008 Review of Demand Billing to Newfoundland Power* (Exhibit 11, page 25): "On most peak days, the system has adequate generation available and customer curtailments are not required."

Following a 2008 review, Newfoundland Power and Hydro agreed in principle that the curtailable load be treated as a generation credit, similar to the treatment of Newfoundland Power's thermal generation. Essentially, a generation credit would reflect the available curtailable load by reducing Newfoundland Power's billing demand. Under that approach, Hydro would have the responsibility for requesting dispatch of the curtailable load when the system needs it.[18]

At the time of the 2008 review, it was agreed that the matter would be addressed in Hydro's next GRA. The current Application does not propose changes in the treatment of Newfoundland Power's curtailable load.[19]

4.3 Recommendation

I believe there is a sufficient basis, at this time, for the Board to fashion a reasonable solution to the problem of Newfoundland Power's curtailable load not being used in the most efficient way. That solution would involve treating Newfoundland Power's curtailable load in the same fashion as its thermal generation, as was agreed in principle at the time of the 2008 review of demand billing.

Recognizing the value of the curtailable load in both the cost of service study and the Utility rate, as is done for Newfoundland Power's thermal generation, would remove the incentive for Newfoundland Power to request customer load curtailments solely to minimize demand charges

[18] Exhibit 11, page 25.

[19] Hydro has indicated a willingness to explore options related to the treatment that was agreed to in principle in 2008. See the response to Request for Information CA-NLH-077.

from Hydro.[20] This would address the stated concern that more frequent requests to curtail might lead to reduced customer participation in the Curtailable Service Option, thus reducing the curtailable load available to the system.[21]

Hydro's evidence noted some unresolved issues that are principally related to the availability of the curtailable load and how it should be valued.[22] Hydro's cost of service study imputes a value of thermal capacity based on allocation of historic costs.[23] Treating the curtailable load in the same way in the cost of service study would effectively impute the same value to the curtailable load. This is a reasonable interim approach. The long-term value of the curtailable load to the system should be assessed by further study, and any necessary changes incorporated at Hydro's next GRA. As regards the availability issue, it would be reasonable to base demand billing impact on a test year forecast of available curtailment, and test availability annually. This is similar to the way the existing generation credit operates.

The Board has previously accepted the cost of service and rate treatment of Newfoundland Power's thermal generation as being appropriate.[24] In ordering that Newfoundland Power should be given a generation credit for its thermal capacity, the Board reasoned that while Newfoundland Power's thermal generation may not be used to the same extent or for the same

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20 If the curtailable load were treated like Newfoundland Power's thermal generation, Newfoundland Power's billing demand, which is based on its native load, would be unaffected by the amount of curtailable load dispatched at time of peak. Furthermore, a curtailable load credit would compensate Newfoundland Power for its available curtailable load, irrespective of whether it is dispatched at time of peak.

21 Similar to the treatment of Newfoundland Power's thermal generation, Hydro would have the ability to request dispatch of the curtailable load for Hydro's system purposes, while Newfoundland Power would retain the ability to request customer curtailments when necessary for operational reasons.

22 See, for example, the response to Request for Information CA-NLH-175.

23 The imputed value based on Hydro's 2013 test year cost of service study is $87.77/kW. See Exhibit 13, Schedule 1.5, page 1 of 1, line 4.

24 Order No. P.U. 14, (2004); Order No. P.U. 44 (2004), Schedule 1.

purpose as its hydraulic generation, it still comprises available capacity for Hydro in terms of the island system capability.[25] In my view, this reasoning also applies to Newfoundland Power's curtailable load, and supports my recommendation that the matter be addressed without further delay.

5.0 TEST YEAR

5.1 Background

A test year is a 12-month period that provides a basis for comparison of revenues, expenses, and investment in order to determine revenue requirements in a general rate case. A range of test year types is used by North American utility regulators as a basis for ratemaking, including:

1. Historic Test Year;
2. Historic Test Year with Pro-Forma Adjustments;
3. Partially-Projected Test Year; and
4. Fully-Projected (Future) Test Year.

The *Electrical Power Control Act, 1994* requires that "rates should be reasonable and not unjustly discriminatory and should be established, wherever practicable, based on forecast costs for that supply of power for one or more years." This means that the normal requirement in this province is that electricity rates should be based on one or more fully-projected, or future, test years.

[25] Order No. P.U. 14 (2004), pages 97–99.

For the current Application, the statutory requirement of a future test year has been overridden by an Order in Council issued by the provincial government (the "Order in Council"). The Order in Council provides that "Newfoundland and Labrador Hydro's General Rate Application shall be based on a 2013 test year in the determination of new electricity rates for customers."[26] Hydro has interpreted the Order in Council as requiring that rates be based on "forecast 2013 costs of provision of service."[27]

My evidence on Hydro's proposed 2013 test year focuses principally on regulatory practice. I have not conducted an exhaustive review of the costs contained in Hydro's 2013 test year.

5.2 Regulatory Practice

Most regulatory jurisdictions in Canada and the United States use a test year as a means to develop cost-based rates. The essential purpose of the test year is to provide reasonable estimates of the utility's revenues and expenses. In many jurisdictions, the type of test year is specified by law. In others, the regulator has discretion to determine an appropriate test year.[28]

Regardless of the type of test year used, it is generally accepted regulatory practice that the test year be examined to determine whether it provides a reasonable basis upon which to establish rates for a future period. This process often results in adjustments. The regulatory objective of

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[26] OC2013-089.

[27] Response to Request for Information NP-NLH-260.

[28] A recent survey of electric and water utility regulation in the 50 U.S. states found that 42 states allow (or in some cases require) historic test years. National Association of Water Companies (article and survey may be found at <http://www.nawc.org/state-utility-regulation/regulatory-practices/prospectively-relevant-test-year.aspx>)

such adjustments is to ensure the test year is representative of the period in which rates are to take effect.[29]

In determining whether a historic test year is reasonable from a ratemaking perspective, it is common practice to consider the impact of material events that have occurred since the end of the test year.[30] Typical questions include whether historic costs and revenues are normal or recurring and whether there has been extraordinary load growth in the intervening period. If the regulator determines that intervening events have altered the relationship between the rate base, revenues and expenses indicated in the test year, adjustments to the test year may be required.[31]

In the case of both historic and future test years, adjustments to "normalize" test year values are typical. Such adjustments typically involve eliminating non-recurring items, annualizing new costs or revenues, and amortizing costs or revenues that occur periodically but not annually.[32] Regulators also consider test year costs and revenues in light of the "matching principle". This is an accounting principle that requires consideration of whether the revenues generated in a test year are matched appropriately against the costs incurred to generate those revenues.

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29 *Rate Case and Audit Manual*, National Association of Regulatory Utility Commissioners (NARUC) Staff Subcommittee on Accounting and Finance, Summer 2003, page 10.

30 Due to the passage of time since the filing of the Application, 2013 is now, effectively, a historic test year.

31 For example, the NARUC rate case and audit manual states the issue as follows:

> "In looking at the months beyond the end of the test year, have the growth rates for rate base, expenses, and revenues all remained fairly close and constant, maintaining the test year relationship among these three elements, or has one element changed dramatically, making the test year out of kilter with current operations. If so, can this situation be resolved through adjustments to the test year?" (*Rate Case and Audit Manual*, op. cit., page 10.)

32 See, for example, *Federal Energy Regulatory Commission Cost of Service Rates Manual (June 1999)*, page 7.

In many U.S. states, the law explicitly requires the regulator to consider whether pro-forma adjustments are necessary.[33] In a number of jurisdictions, the adjustment process itself is prescribed by regulation or statute.[34]

5.3 Hydro's 2013 Test Year

The Order in Council specifies the use of a 2013 test year for this Application. It does not specify whether the costs and revenues in the test year should be based on 2013 forecast results or actual results, or the extent to which adjustments should be made for known changes.

The Application filing does not clearly indicate how the proposed 2013 test year was developed. In its responses to Requests for Information, Hydro has provided some information regarding the determination of certain values included in the test year. However, the explanations are limited and, in some instances, appear contradictory. For example, despite Hydro's interpretation that the Order in Council requires that rates be based on forecast 2013 costs, a number of test year components include a mixture of both forecast and actual results.[35] In fact, Hydro has based the Application on a partially-projected 2013 test year.[36]

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33 See, generally, the National Association of Water Companies survey, op. cit.

34 For example, regulations governing the U.S. Federal Energy Regulatory Commission, which sets rates for interstate gas pipelines, permit adjustments to the historic test year "for changes in revenues and costs which are known and measurable with reasonable accuracy at the time of a [rate case] filing, and which are expected to take effect within 9 months of the end of the historic test year." *Federal Energy Regulatory Commission Cost of Service Rates Manual (June 1999)*, page 7.

35 Response to Request for Information NP-NLH-184.

36 A partially-projected test year uses some actual and some projected numbers.

Based on responses to various Requests for Information, Hydro's 2013 test year contains a mix of actual and forecasted results as follows:

1. Island Interconnected Sales (3 months actual, 9 months projection)[37]
2. Holyrood Fuel Cost (12 months forecast)[38]
3. Island Interconnected Hydraulic Production (12 months forecast)[39]
4. Diesel Fuel Cost per Litre – Rural Isolated Systems (2 months actual, 10 months forecast)[40]
5. Holyrood Capacity Factor (5 year historical average)[41]
6. Power Purchases: [42]
    a. Island Interconnected system (12 months forecast)
    b. Isolated systems (2 months actual, 10 months forecast)

Hydro's rationale for including a combination of actual and projected data is not evident. Further, it is not clear from the evidence on the record whether Hydro has made any adjustments to test year to correct for abnormalities in the test year data. Hydro has stated it was not proposing any adjustments to the 2013 test year to ensure that the rates established for 2014 reflect the costs to provide service in 2014.[43]

[37] Response to Request for Information NP-NLH-265.
[38] Responses to Requests for Information NP-NLH-264 & NP-NLH-266.
[39] Response to Request for Information NP-NLH-263.
[40] Response to Request for Information NP-NLH-267.
[41] Response to Request for Information PUB-NLH-136.
[42] Response to Request for Information NP-NLH-268.
[43] Response to Request for Information NP-NLH-028.

It is a statutory requirement in the Province of Newfoundland and Labrador that rates should be just and reasonable. This is consistent with generally accepted regulatory principles throughout North America. Although the use of a historic test year (2013) to set rates for a future year (2014) is unprecedented in this jurisdiction, the generally accepted regulatory principles outlined in Section 2.0 of this evidence still apply.

5.4 Recommendation

In setting just and reasonable utility rates, regulators typically review a utility's proposed investments and expenses for prudence, as well as to identify adjustments that may be necessary to ensure the test year provides a reasonable basis upon which to establish future rates.

After reviewing the limited information on the record, I have identified several items in Hydro's 2013 test year cost of service that should be considered for adjustment by the Board. These items are as follows:

1. The use of 3 months of actual sales. For a test year to be reasonably representative of the utility's revenues and expenses, it should not reflect abnormal conditions. Sales should therefore be weather normalized. A normalizing adjustment to sales would affect a number of test year variables, including Holyrood Production and the Hydraulic Capacity Factor used in allocating costs between customers.
2. The use of a 5-year historic average of 22.34% for the Holyrood Capacity Factor. The Holyrood Capacity Factor affects the allocation of costs between customers. The actual

2013 capacity factor of 28% is projected to rise to 35% in 2014.[44] Hydro's use of the 5-year historic average results in a figure that is not reasonably representative of current circumstances.

3. The use of 2 months of actual purchased power and diesel costs for Rural Isolated Systems. As in the case of sales, purchases should be weather-normalized, so the test year does not reflect abnormal conditions. A normalizing adjustment to Purchased Power would affect the amount of the rural deficit, which is subsidized by Newfoundland Power customers and Labrador Interconnected customers.
4. A significant increase in load is expected at the Vale facility in the period rates will be in effect. The Board should consider whether the 2013 test year should be adjusted to incorporate this significant change in load on the Island Interconnected system.

In order to ensure that rates based on Hydro's 2013 test year will be just and reasonable, the Board should consider what other adjustments may be necessary to ensure that the test year reasonably represents Hydro's costs, fairly apportions the cost of service among Hydro's customers, and provides Hydro with an opportunity to earn a fair return on its rate base.[45]

[44] Response to Request for Information NP-NLH-146.

[45] The fair return principle requires that rates in a general rate case be set to permit the utility an opportunity to earn a fair return. Hydro's forecast rate of return on equity based on the rates proposed in this Application is 9.38% for 2014 and 11.5% for 2015, as compared to a target return on equity of 8.8%. (Response to Request for Information IR-PUB-NLH-032, 1st Revision). This suggests that the 2013 test year may require adjustment to ensure it provides an appropriate basis for the setting of rates.

Exhibit LBB-1: Resume of Larry B. Brockman

Larry B. Brockman Resume

Name
Larry B. Brockman

Present Position
President, Brockman Consulting

Qualifications Summary
Mr. Brockman has over 36 years experience as a utility rate designer, planner, consultant, regulator, educator, and expert witness. He specializes in cost of service and rate design, strategic planning, regulatory assistance, competitive market assessments, bid evaluation processes, merger and acquisition analysis, and computer simulation, to help utilities meet their strategic goals and maintain competitive advantage.

Education
Mr. Brockman earned a bachelor's degree in engineering from the University of Florida in 1973. He subsequently completed 35 quarter-hours towards a master's degree in electrical engineering, with a minor in regulatory economics at the University of Florida.

Prior Experience
During his career, Mr. Brockman has performed, and managed a broad range of consulting projects, including:

Cost of Service and Rate Design
Numerous Cost of service and Rate Design projects for Canadian and US utilities, assisting the utilities with marginal and embedded cost-of-service and rate designs for their ability to meet the utilities' strategic and regulatory goals, and pass regulatory scrutiny. In many of these examinations, Mr. Brockman has appeared as an expert witness. These cases are delineated in the Appendix.

Co-Developer and Instructor of the Public Utilities Reports, industry short course on Rates and Regulation for 5 years. In these courses, Mr. Brockman taught hundreds of utility rate designers, regulators, attorneys and Commission staff the principles of rate design and regulation.

Review of a restructured utility's shared services costs of service separation study to allocate the costs between regulated and unregulated subsidiaries, and procedures for tracking the costs in the future.

Financial Analysis and Asset Valuation
Construction of detailed utility financial simulation models to forecast regional bulk-power prices and profits for Utilities and Independent Power Producers to judge market entry positions and create successful negotiating strategies for purchases and sales in unregulated generation markets.

A profitability study for an electric utility to assess effects on shareholder returns and economic value added (EVA), of various marketing activities of the utility. These studies resulted in re-engineering the marketing department to yield higher returns and be more consistent with corporate goals.

Several asset valuation studies for electric utilities to determine whether a market existed to sell existing generating assets, what they were worth, and whether they would be competitive with existing and new generation in the region. Results were presented to senior management and used to revise the strategic planning direction.

Competitive Market Assessments
Expert testimony to the Arkansas and Louisiana Public Service Commissions on the market clearing prices for generation in a competitive market, and the relative competitive positions of many of the generating companies in the SPP and ERCOT regions. To perform this work, Mr. Brockman used sophisticated computer models and a database containing over 120,000 MW of capacity in the region.

A study on the effects of retail competition on the states of North and South Carolina, presented to the South Carolina Legislature and performed for Carolina Power and Light Company. The study required research on the behavior of prices in other formerly regulated industries and detailed modeling of the market prices and financial effects on the utilities, as well as the effects on state and local taxes.

An independent review of the effectiveness and reliability of a large Mid-Western utility's Power Marketing and Purchases Department in deregulated generation markets, performed as a joint project with the utility and the state's attorney general.

Numerous market outlook and generator profitability studies of the ERCOT, Eastern Interconnect, and WSCC markets for merchant plant developers, using the GEMAPS transmission-constrained production cost simulation tool.

An analysis for a large Canadian utility of the profitability of increased transmission line investments to move power into various competitive markets in the US and Canada.

Computer Simulation of Power Systems
Mr. Brockman is an expert in the use of utility simulation software for: planning; operations; and financial analysis including: PROMOD; PROVIEW; PROSCREEN II; PMDAM; PROSYM; EVALUATOR; GEMAPS, IREMM, and several Power Flow programs.

Strategic Planning
A strategic planning project for a large South-Eastern electric utility identifying strengths, weaknesses, opportunities, and threats, in competitive open-access power markets. For each utility in the region, the project identified which customers would be gained and lost, and assessed the impacts of alternative transmission, and contracting strategies. The entire South Eastern US generating and major transmission systems were simulated. Over $1.5 Billion of potential customer revenue migration was identified at the client utility. Strategies for maintaining the utility’s profitability were recommended and accepted by senior management.

Development of several successful strategies and power supply bid evaluation procedures in use at investor owned and rural electric cooperatives, to ensure that winning bids are consistent with the utility’s business goals and objectives.

Operational Studies
A salt dome natural gas storage study for a South Central electric utility. The study identified the hourly operational characteristics necessary for favorable economics of the required storage facility. Estimated savings in excess of $100 Million were identified. The facility was constructed and has been successfully benchmarked against the study results.

Merger and Acquisition Analysis
Mr. Brockman has participated in several merger and acquisition studies assessing the production cost and planning and operational synergies arising from the merger. He testified before the FERC on the accuracy and appropriateness of the production costing computer simulations a merger application. He also participated in a regulated/non-regulated cost separation study for a shared services group of a major utility.

Expert Litigation Assistance
Project manager of an anti-trust case involving investigation of all phases of power supply planning covering a 40 year historical period and a successful defense against over $3 Billion damage suit involving alleged actions by an investor owned utility.

Managed a successful defense against a cogenerator seeking to convince regulators that a utility's ratepayers should pay over $1.5 Billion in unnecessary and uneconomic new generation avoided costs by the cogenerator.

Project manager for a precedent setting FERC case defending a utility from an attempt to abrogate a long term bulk power contract worth over $400 Million. Mr. Brockman's team was able to convince the FERC that contract abrogation was not in the public interest, that the plaintiff was not going bankrupt, and that the plaintiff's difficulties were the result of arbitrary and capricious state regulation.

Prior Positions Held
Managing Consultant PA Consulting, 2000-2002. Mr. Brockman managed a group of consultants engaged in the analysis of transmission-constrained competitive generation markets, as well as managing several litigation cases involving electric utilities.

President of Brockman Consulting 1997-2000. Mr. Brockman assisted clients with strategic planning and regulatory assistance.

Managing Director and Vice President 1994-1996, EDS Management Consulting Services (formerly EMA). Responsible for the Atlanta office, engaged in providing technical consulting services in planning, regulatory assistance, marketing, competitive assessments, reliability, bid evaluation, financial simulation, and expert testimony.

Vice President Energy Management Associates (EMA) Consulting Department 1985-1994. Started as lead consultant and rose to position of Vice President. He marketed and provided strategic planning, regulatory assistance, and operational consulting to electric and gas utilities worldwide.

Assistant Director Electric and Gas Department, Florida Public Service Commission 1981-1985. Supervised 48 employees engaged in all phases of electric and gas regulation. Made recommendations to the Commission on rate cases and resource planning dockets for all electric and gas utilities in Florida. Responsible for financial and management audit scopes, prudence reviews of rate base, expenses, revenue requirements, and final rate design. Also advised Commission on economic effects of regulatory and energy policy actions.

Corporate Planning Engineer 1979-1981, Gainesville Regional Utilities. Developed, analyzed, and presented to senior management and the City Council, ideas, plans, and studies affecting the growth, financial well-being and efficient operation of the city owned electric system. Performed detailed simulations and studies of new generation, substations, transmission lines, voltage conversions, re-conductoring, and power factor correction. Mr. Brockman conducted public hearings and testified before the City Council on proposed transmission lines, substations, and rate designs.

Special Consultant 1979-1980, University of Florida Public Utilities Research Center. Under a grant from Florida Power Corporation and the Florida Public Service Commission, performed a detailed review of marginal cost study techniques for electric utilities and completed a marginal cost study for Florida Power Corporation.

Transmission Planning Engineer 1973-1976, Jacksonville Electric Authority. Responsible for bulk transmission planning, including extensive use of power-flow, fault current and transient stability computer programs. Chairman of the Florida Electric Coordinating Group's Long Range Transmission Planning Task Force 1974.

Adjunct Faculty Member 1976, University of North Florida. Taught courses in industrial and commercial building wiring design and conformance with National Electrical Codes.

Expert Witness Appearances
City of Gainesville City Council, 1980, testified on behalf of Gainesville Regional Utilities concerning a joint utility and citizen's collaborative effort on rate design.

City of Gainesville City Council, 1981, testified concerning a Long-Range Transmission and Distribution Plan and proposals to construct a new substation.

Florida Public Service Commission, Florida Power and Light, 1981 Docket No. 810002, Rate Case, testified on cost-of-service.

City of Tallahassee - Surcharge Outside the City Limits, 1983. Testified concerning marginal and embedded costs inside and outside the city limits.

Florida Public Service Commission, 1988, West Florida Natural Gas Company. Testified on cost-of-service and rate design and why the utility needed flexibility to meet competition.

Oklahoma Corporation Commission, 1988, Avoided Cost Proceeding. Testified on the appropriate use of computer models to determine avoided cost of generation.

Nova Scotia Board of Commissioners of Public Utilities, 1989, Nova Scotia Power Rate Case. Testified on cost of service and rate design.

Nova Scotia Board of Commissioners of Public Utilities, 1990, Nova Scotia Power Rate Case. Testified on integrated resource planning, cost of service and rate design.

Nova Scotia Board of Commissioners of Public Utilities, 1993, Nova Scotia Power Rate Case. Testified on cost of service and rate design.

Board of Commissioners of Public Utilities of the Province of Newfoundland and Labrador, 1990. Newfoundland and Labrador Hydro rate case. Testified on integrated resource planning and rate design.

Board of Commissioners of Public Utilities of the Province of Newfoundland and Labrador, 1992, Newfoundland and Labrador Hydro rate case. Testified on Cost of Service and Rate Design.

Board of Commissioners of Public Utilities of the Province of Newfoundland and Labrador, 1992, Generic Hearing on Cost of Service and Rate Design.

Board of Commissioners of Public Utilities of the Province of Newfoundland and Labrador, 1995, In the Matter of an Inquiry Into Issues Relating to Rural Rate Subsidies.

Public Service Commission Colorado, 1994, testified on behalf of Public Service Company of Colorado on the proper use of dynamic programming models in the utility's integrated resource planning process.

Federal Energy Regulatory Commission, 1994, Merger Case, Testified on behalf of Central and Southwest utility concerning production cost merger benefits.

Nova Scotia Board of Commissioners of Public Utilities, 1995, Nova Scotia Power Rate Case. Testified on cost of service and rate design.

Board of Commissioners of Public Utilities of the Province of Newfoundland and Labrador, 1996, Newfoundland Power Rate Case, testified on cost of service and rate design.

Arkansas Public Service Commission, 1997, Arkansas Power and Light Rate Case, testified concerning the market clearing prices for power in deregulated markets and the relative competitive positions of various generators in such markets.

Board of Commissioners of Public Utilities of the Province of Newfoundland and Labrador, 2001, Newfoundland and Labrador Hydro rate case, on behalf of Newfoundland Power concerning Cost of Service and Rate Design.

Board of Commissioners of Public Utilities of the Province of Newfoundland and Labrador, 2003, Newfoundland and Labrador Hydro rate case, on behalf of Newfoundland Power concerning rate design and marginal costs.

Board of Commissioners of Public Utilities of the Province of Newfoundland and Labrador, 2003, Newfoundland Power rate case, concerning Cost of Service and Rate Design.

North Carolina Docket No. E-22, Sub 412. Draft testimony on behalf of Dominion North Carolina, February 2005, concerning rates to a large steel company. Case was settled before final evidence was submitted.

Board of Commissioners of Public Utilities of the Province of Newfoundland and Labrador, 2006, Newfoundland and Labrador Hydro rate case, on behalf of Newfoundland Power concerning rate design and marginal costs.

Board of Commissioners of Public Utilities of the Province of Newfoundland and Labrador, 2009, on behalf of Newfoundland Power concerning Newfoundland and Labrador Hydro's Industrial Rates.

Board of Commissioners of Public Utilities of the Province of Newfoundland and Labrador, 2014, on behalf of Newfoundland Power concerning Newfoundland and Labrador Hydro's proposal for a refund of the Newfoundland Power RSP Surplus.

Clients Mr Brockman has Performed Consulting Services for Include:

Ahlstrom Pyro Power

Alabama Electric Cooperative

Alberta Power Company

Balch and Bingham

Black and Veatch

California Energy Commission

Carolina Power and Light Company

Central and Southwest Company

Central Vermont Power Company

Chugach Electric Cooperative

Cincinnati Gas and Electric Company

Citibank

Commonwealth Edison Company

Duke Power Company

Enron

Entergy

Florida Public Service Commission

Georgia Power Company

Gainesville Gas Company

Hawaiian Electric Company

Howery and Simon

Hydro One

McKinsey and Company

Mission Energy

Nevada Power Company

New Brunswick Power Company

New York State Electric and Gas

Newfoundland Power

Niagara Mohawk

Nova Scotia Power Company

Oklahoma Gas and Electric Company

Ontario Power Generation

Pacific Gas and Electric Company

Public Service Company of Colorado

Public Service Company of New Mexico

Rochester Gas and Electric

SCANA

Southern California Edison

Tampa Electric Company

The City of Austin

The Southern Company

TransEnergie

West Florida Natural Gas Company

The World Bank