NEWFOUNDLAND POWER
A FORTIS COMPANY

Newfoundland Power Inc.

55 Kenmount Road
PO Box 8910
St. John's, Newfoundland
A1B 3P6
Business: (709) 737-5600
Facsimile: (709) 737-2974
www.newfoundlandpower.com

DELIVERED BY HAND

September 30, 2009

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 Application for Approval of the Rate Stabilization Plan components of the rates to be charged to Industrial Customers (the "Hydro Application").

Please find enclosed the original and eleven copies of Newfoundland Power's Prefiled Evidence and Exhibit of Mr. Larry Brockman in respect of the Hydro Application.

For convenience, the Prefiled Evidence is provided on three-hole punched paper.

A copy of this letter, together with enclosures, has been forwarded directly to the parties listed below. An electronic copy in Adobe format will follow.

If you have any questions regarding the enclosed, please contact the undersigned at your convenience.

Yours very truly,

Gerard M. Hayes
Senior Counsel

c. Geoffrey Young
Newfoundland & Labrador Hydro

Thomas Johnson
Consumer Advocate

Joseph Hutchings, Q.C.
Poole Althouse

Paul Coxworthy
Stewart McKelvey

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

IN THE MATTER OF an Application by Newfoundland and Labrador Hydro for the approval, pursuant to Section 70 (1) and 76 of the Act, of the Rate Stabilization Plan components of the rates to be charged to Industrial Customers.

Prefiled Evidence of Larry Brockman

Testimony on Behalf of Newfoundland Power

September 30, 2009

Brockman Consulting

At the hearing into Newfoundland and Labrador Hydro's 2009 Application for Approval of the Rate Stabilization components of the rates to be charged to Industrial Customers, Expert Evidence on behalf of Newfoundland Power will be provided 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 30 years experience as a power system planning engineer, rate designer, regulatory staff member and consultant. Mr. Brockman specializes in regulatory and system 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 8 previous occasions as an expert witness. He 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, 2003 and 2006 general rate referrals, as well as in Newfoundland and Labrador Hydro's 1992 generic cost of service hearing and the 1995 Rural Rate Inquiry.

Mr. Brockman also appeared as an expert witness on cost of service and rate design on behalf of Newfoundland Power in the Company's 1996 and 2003 General Rate Applications.

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

Contents

1.0 SUMMARY OF EVIDENCE

1.1 Background

The current IC Firm rates were initially approved for 2007 by Order No. P.U. 8 (2007). These rates have continued to apply on an interim basis since January 1, 2008.

Newfoundland and Labrador Hydro ("Hydro") has submitted an application to finalize Firm rates for the Industrial Customer ("IC") class (the "Application"). The Application proposes:

(i) the rates approved on an interim basis effective January 1, 2008 for the Industrial Customers be approved on a final basis; and

(ii) the RSP Adjustment for Teck Resources increase from -2.000¢ per kWh to -0.785¢ per kWh effective July 1, 2009.

Since 2006, a number of production shutdowns have occurred in the pulp and paper industry on the Island. These shutdowns have materially reduced the IC class load requirements since rates were approved by the Board for 2007. The reduced load requirements of the IC class have resulted in Hydro incurring lower production costs and receiving reduced revenue from energy sales.

The Load Variation Component of the Rate Stabilization Plan ("RSP") serves to ensure Hydro does not gain or lose from the mismatch between changes in production costs and energy revenues. This is achieved through transfers to or from the RSP to reflect the net impact of the load variations (the "Load Variation Transfer"). All Load Variation Transfers are currently assigned to the class in which the load variation occurred (the "Assignment Approach").

Hydro's letter to the Board accompanying the Application notes that a material credit balance in the RSP is accumulating as a result of Load Variation Transfers resulting from the significant decline in the IC class load. The forecast credit balance at year-end 2010 resulting from Load Variation Transfers is approximately $58 million.

Hydro is recommending that the portion of the RSP IC class balance resulting from the Load Variation Transfers be allocated between Newfoundland Power and the Industrial Customers based on energy ratios (the "Cost of Service Approach").

Newfoundland Power has asked me to assess, based on a review of generally accepted regulatory principles, (i) the appropriate approach to deal with the RSP balance resulting from the material decline in IC load relative to the 2007 test year, and (ii) the proposal to approve rates on a final basis for the IC class.

1.2 Conclusions

Based on my review, I have reached the following conclusions:

RSP Balance Disposition

- The Assignment Approach used for all Load Variation Transfers does not result in rates providing reasonable recovery of embedded costs for each class of customers, and can result in rate volatility for customers in the IC class.
- Disposition of 100% of the RSP Load Variation Transfers since the 2007 test year to the Industrial Customers is not consistent with generally accepted ratemaking principles.

- Hydro's recommended Cost of Service Approach for dealing with RSP Load Variation Transfers results in rates better reflecting costs and reduces potential rate volatility. This approach is also consistent with the current RSP allocation of fuel cost variances resulting from changes in fuel price and hydraulic production.
- The Cost of Service Approach is consistent with the proposed approach in the IC Rate Design Review Report, agreed to by all parties, to deal with load variations resulting from increases in production or the addition of a new customer.
- It is appropriate that the Board approve a revision to the RSP to require the use of the Cost of Service Approach to deal with Load Variation Transfers. While it may be conceptually sound to apply the Cost of Service Approach to Load Variation Transfers since January 1, 2007, the IC class rates did not become interim until January 1, 2008.
- It is appropriate that the Cost of Service Approach be used to determine the disposition of any balance in the RSP resulting from Load Variation Transfers that has accumulated since January 1, 2008 (i.e., since the IC Firm rates were made interim).

Approval of IC Rates

- I take no issue with the Board approving the proposed IC rates as final subject to the RSP balances for the IC class and Newfoundland Power being revised to reflect the use of the Cost of Service Approach in the RSP Load Variation Component, effective January 1, 2008.
- It is appropriate that the Board approve that Teck Resources pay the same rate as the remainder of the IC class.
- The operation of the RSP modified to reflect the Cost of Service Approach in the Load Variation Component is forecast to result in a large rate increase to the IC class in establishing rates for 2010.

- To reduce customer rate impacts when determining 2010 rates for the IC class, the Board should give consideration to: the forecast 2010 credits to the RSP that will result from IC load requirements continuing to be materially below the IC load requirements used in the 2007 test year; and a deviation from the approved approach for disposition of the forecast 2009 year-end credit balance in the hydraulic variation component of the RSP.

2.0 THE APPLICATION

2.1 Application Background

Hydro has submitted an application to finalize Firm rates for the IC class.

IC Firm rates include both a demand charge and a Firm Energy Charge.[1] The monthly demand charge is based on test year embedded costs and applies to the customers' annual declaration of Power on Order. The Firm Energy Charge is comprised of the Base Rate and the RSP Adjustment. The Base Rate is established based on the test year embedded costs. The RSP Adjustment is derived based on RSP balances and a fuel rider.[2] The Board normally approves, on an annual basis, a new Firm Energy Charge to be effective January 1st that reflects the most recently approved Base Rate and the current RSP Adjustment.

[1] There is also a Specifically Assigned Charge that differs by customer (effectively a customer charge). Specifically Assigned Charges are for plant in service in which the cost to be recovered is determined on an individual customer basis.

[2] The RSP Adjustment is derived from three components of the RSP, the Current Plan Balance, the Historical Plan Balance and a Fuel Rider.

The current IC Firm rates were initially approved for 2007 by Order No. P.U. 8 (2007).

Table 1 provides the components of the Firm Energy Charge for the IC class that were approved on a final basis for 2007.[3]

Table 1
2007 Firm Energy Charge Components

Base Rate			**3.676 ¢ per kWh**
RSP Adjustment			
	Historic Plan	1.215 ¢ per kWh	
	Current Plan	(2.000) ¢ per kWh	
	Fuel Rider	0.000 ¢ per kWh	
	Total		**(0.785) ¢ per kWh**
Firm Energy Charge			**2.891 ¢ per kWh**

Table 1 shows that the Firm Energy Charges for the IC class for 2007 were materially less than the Base Rate as a result of the RSP Adjustment of -0.785¢ per kWh.

The Firm Energy Charge for Teck Resources differed from that approved for the other Industrial Customers since the computation of the Teck Resources RSP Adjustment excluded the Historical Plan Balance of 1.215¢ per kWh.[4]

[3] Source: Board Order No. P.U. 8 (2007), Schedule A, page 5 of 8.

[4] In Order No. P.U. 1 (2007), the Board approved that the rates for Aur Resources, the operator of the Duck Pond Mine, should exclude the RSP Historical Plan Balance. The Duck Pond Mine was not in operation during the accumulation of the Historical Plan Balance. Teck Resources is now the operator of the Duck Pond Mine. The five-year collection period to recover the Historical Plan Balance ended as of December 31, 2007.

In December 2007, Hydro filed an application for the IC Firm rates to become interim effective January 1, 2008. The application for interim rates cited potential rate volatility in support for the application. The Board summarized the point in their Order as follows:

> *it may be prudent to delay establishing final rates for the Industrial Customers to allow for further analysis by Hydro and consideration of impact of the operation of the RSP in the context of the significant load change and the critical level of year end hydraulic balances, which are not available until after December 31, 2007.*[5]

The rates in effect for 2007 were approved for 2008 on an interim basis in Order No. P.U. 34 (2007). The effect of the interim rate approval was that the annual update to the RSP Adjustment did not occur, and the Firm rates approved for 2007 continued to be used in billing the Industrial Customers for 2008. By further orders of the Board, the interim rates have continued to apply for 2009.[6] In Order No. P.U. 6 (2009), the Board directed Hydro to make application to finalize the rates, rules and regulations for the Island Industrial Customers by June 30, 2009.

The Application was filed in accordance with Order No. P.U. 6 (2009).

2.2 Application Proposals

The Application proposes:

(i) the IC Firm rates approved on an interim basis effective January 1, 2008 for the Industrial Customers be approved on a final basis; and

(ii) the RSP Adjustment for Teck Resources increase from -2.000¢ per kWh to -0.785¢ per kWh effective July 1, 2009.

[5] Order No. P.U. 34 (2007), lines 20 to 28.
[6] Order No. P.U. 37 (2008) and Order No. P.U. 6 (2009)

Table 2 provides the components of the proposed Firm Energy Charge for the IC class.

Table 2
Proposed Firm Energy Charge Components

Base Rate	3.676 ¢ per kWh
RSP Adjustment	(0.785) ¢ per kWh
Firm Energy Rate	2.891 ¢ per kWh

The Application effectively proposes no change in the IC Firm rates except the rate for Teck Resources. For Teck Resources, the proposed RSP Adjustment increase from -2.000¢ per kWh to -0.785¢ per kWh will result in a 38% rate increase to Teck Resources.

The letter to the Board accompanying the Application notes that a material credit balance in the RSP is accumulating as a result of a significant decline in the IC class load. The Application provides no proposal for disposition of the RSP balance resulting from the load variation. However, the letter suggested the following:

> *the Board may wish to consider suspension of the existing load variation allocation rules and holding in abeyance current and future load variation amounts until such time as Hydro can develop a proposal to address the current anomalies in the RSP*.

2.3 Application Review

Newfoundland Power has asked me to assess on the basis of generally accepted regulatory principles: (i) the appropriate approach to deal with the RSP balance resulting from the material decline in IC load relative to the 2007 test year, and (ii) the proposal to approve rates on a final basis for the IC class.

In my assessment, I have relied upon data provided by Hydro through responses to requests for information. Where data has been relied upon, I have attempted to reference the sources. Some of the responses have been changed during the request for information process. Should additional changes occur, my estimates may also require changes.

3.0 THE RSP BALANCE

3.1 General

The RSP was originally established in 1986, primarily to smooth rate impacts for variations between actual and forecast test year fuel costs at the Holyrood Thermal Generating Station ("Holyrood").

The RSP provides for annual adjustments to customer rates to deal with the revenue requirement impacts of certain variations from test year forecasts.[7] These variations include changes in: (1) hydraulic production; (2) the price of No. 6 fuel used at Holyrood; and (3) the customer load requirements of Newfoundland Power and Industrial Customers.[8]

Cost variances from the test year forecast resulting from changes in hydraulic production and fuel prices are currently allocated in the RSP to Newfoundland Power and the Industrial Customers based on class energy consumption.

[7] Rate changes resulting from the operation of the RSP are normally implemented on July 1st for Newfoundland Power and on January 1st for the Industrial Customers.

[8] The RSP also includes the impact of certain variations in Hydro's rural revenues. This component specifically relates to the RSP Adjustment for Newfoundland Power.

Hydro's estimated earnings impacts relative to test year resulting from changes in customer load requirements are allocated in the RSP to the class in which the load variation occurs. These cost variances are dealt with through the RSP Load Variation Component.

3.2 System Load Reductions

Since 2006, a number of production shutdowns have occurred in the pulp and paper industry on the Island (the "Production Shutdowns"). The Production Shutdowns have materially reduced the IC class load requirements since the approval of the 2007 test year.

Table 3 shows the estimated load requirement reductions that resulted from the Production Shutdowns for the period 2007 to 2010.[9]

Table 3
Impacts of Production Shutdowns
(GWh)

	2007 Test Year	Variance			
		2007	2008	2009F	2010F
IC Class Load	894.3	(34.8)	(203.2)	(427.9)	(479.6)

Table 3 shows that, for the period 2009 to 2010, the Production Shutdowns amount to approximately 50% of the 2007 test year sales.

The reduced load requirements of the IC class have resulted in Hydro incurring lower production costs and receiving reduced revenues from energy sales.[10]

[9] Request for Information NP-NLH-10, page 2 of 3.

[10] The reduced load requirements may also have reduced demand revenues for Hydro if the load reductions are permanent in nature resulting in a reduced Power on Order for an Industrial Customer. However, the RSP Load Variation Component only deals with the impacts of reduced energy requirements.

Table 4 provides an estimate of the impact that the Production Shutdowns have on Hydro's energy revenues and production costs.

Table 4
Estimated Impact due to Production Shutdowns
($000)

	2007	2008	2009F	2010F	Total
Revenue Impact[11]	(1,279)	(7,470)	(15,730)	(17,630)	
Production Cost Impact[12]	(3,064)	(17,892)	(37,677)	(42,229)	
Net Impact	1,785	10,422	21,947	24,599	58,753

Table 4 shows that, for the period 2007 to 2010, there is a material mismatch between the revenue impact and the production cost impact due to the Production Shutdowns. Production cost reductions are forecast to exceed the revenue reductions by approximately $59 million on a cumulative basis over the period, solely as a result of the Production Shutdowns.

3.3 RSP Load Variation Component

The Load Variation Component of the RSP serves to ensure Hydro does not gain or lose from the mismatch between changes in production costs and energy revenues. This is achieved through transfers to or from the RSP to reflect the net impact of the load variations.

[11] The revenue impact includes the reduced revenue from the Base Energy charge. It is equal to 3.676¢ per kWh times reduced sales. This rate reflects the average embedded energy cost of both the low cost hydraulic generation and high cost thermal generation costs and was derived from the 2007 Cost of Service study approved for use in setting rates effective January 1, 2007.

[12] The reduced production cost is based on the 2007 test year Holyrood production costs of 8.805¢ per kWh times reduced energy sales. The cost impacts of variations in fuel price relative to test year are dealt with in another component of the RSP.

Table 5 provides the actual and forecast Load Variation Transfers for the period 2007 to 2010 for both IC load variations and Newfoundland Power load variations.

Table 5
RSP Load Variation Transfers (2007 - 2010F)
($000)

	2007	2008	2009F	2010F	Total
IC Class[13]	(6,262)[14]	(10,315)	(24,711)	(16,764)[15]	(58,052)
Newfoundland Power[16]	254	(26)	(171)	(123)	(66)

Table 5 shows that the Load Variation Transfers for the IC class from 2007 to 2010F total $58 million, an amount that can be primarily attributed to Production Shutdowns.

Table 5 also shows that the RSP load variations for Newfoundland Power are relatively small, totaling $66,000 for the period 2007 to 2010F. This can be attributed to the inclining block rate design that applies to Newfoundland Power.[17]

All Load Variation Transfers are assigned to the class in which the load variation occurred.[18] As a result, 100% of the Load Variation Transfers resulting from the material IC load reductions since January 1, 2007 have been assigned to the balance of the RSP attributable to the Industrial

[13] From response to Request for Information IC-NLH-4 and Response to Request for Information NP-NLH-4.
[14] In 2007, there was a 90 GWh reduction in sales relative to test year not specifically attributed to Production Shutdowns as a result of reduced sales to Corner Brook Pulp and Paper, Abitibi Grand Falls and Teck Resources (AUR) but partially offset by increased sales to North Atlantic Refining. The 2007 Load Variation Transfer of $6.2 million includes $4.5 million Load Variation Transfer reflecting this 90 GWH in reduced sales plus the $1.7 million in Load Variation Transfers resulting from Production Shutdowns as shown in Table 4.
[15] The 2010 forecast balance in Table 5 reflects an approximate 140 GWh increase in load requirements for Corner Brook Pulp and Paper compared to the load requirement impacts provided in Table 4. This difference appears to be due to the current uncertainty in the 2010 forecast load requirements for this customer.
[16] From response to Request for Information IC-NLH-4 and Response to Request for Information NP-NLH-4.
[17] Newfoundland Power has an inclining block rate design with the 2nd block priced at 8.805¢ per kWh to reflect the test year cost of fuel at Holyrood. As a result, revenue changes in step with fuel cost changes attributable to load variations.
[18] The current form of the Load Variation Component was implemented in 2003.

Customers. This substantially explains the June 2009 RSP balance attributed to the IC class showing a credit balance of $23.5 million.[19]

The 2010 IC load requirements are forecast to be materially below the IC load requirements used in the 2007 test year. As a result, the credits to the RSP resulting from Load Variation Transfers are forecast to continue for 2010, and will continue until rates for Newfoundland Power and the IC class are rebased to reflect a more current load forecast following a general rate application ("GRA").

3.4 Load Variation Transfer Disposition

Hydro has recommended that the cumulative effect of the Load Variation Transfers on the RSP balance ought to be allocated between Newfoundland Power and the Industrial Customers based on energy ratios.[20]

I have conducted an assessment of both the current Assignment Approach and Hydro's recommended Cost of Service Approach in dealing with the Load Variation Transfers in the RSP. My assessment of both approaches is based upon an analysis of embedded cost recovery, the review of the Load Variation Component presented in the 2006 Hydro report entitled *Review of the Operation of the Rate Stabilization Plan* (the "2006 RSP Review"), [21] and a review of the Hydro report filed in February 2008 entitled *Review of Industrial Customer Rate Design* (the "IC Rate Design Review Report").[22]

[19] A credit balance is a balance owed to customers.
[20] Response to Request for Information PUB-NLH-15 states: *The allocation of the load variation in this manner more closely aligns with the Cost of Service treatment and Hydro therefore considers this a more fair allocation method.* Hydro's proposal is further clarified in Response to Request for Information CA-NLH-26.
[21] The 2006 RSP Review was provided as an attachment to the current Application.
[22] The IC Rate Design Review Report was provided in response to Request for Information NP-NLH-6.

3.4.1 Embedded Cost Recovery

General

The Board's past practice (as well as generally accepted ratemaking theory) is that the fair and reasonable allocation of the revenue requirement among customer classes is determined based on the embedded cost of service methodology. The forecast test year load requirement for each customer class is a primary input used to determine the cost allocations.

To review the reasonableness of embedded cost recovery, I have: (i) compared how costs are allocated within the RSP against how costs are allocated in the cost of service study; (ii) reviewed which of the two approaches provides a better matching of rates and costs; and (iii) reviewed the potential for rate volatility under each approach.

Allocation of Energy Costs

Within the cost of service study, it is considered fair that all classes share the energy-related costs in proportion to their test year energy consumption. Energy-related costs include the cost of fuel at Holyrood.[23]

The fuel cost variances from test year resulting from fuel price fluctuations and changes in thermal production in response to changes in hydraulic (i.e., hydro-electric) production are currently allocated in the RSP based on class energy consumption. The allocation of fuel cost variances in the RSP between classes based on energy consumption is consistent with the allocation of energy costs in the cost of service study.

[23] The generation on the Island Interconnected system includes both low cost hydraulic generation and high cost thermal generation. A material change from the forecast test year load requirement in any one class can cause a material change in the cost of serving all classes due to the high energy cost associated with Holyrood fuel.

The RSP Load Variation Transfers reflect the impact of load variations on fuel costs and revenues. The Load Variation Transfers effectively represent either an over or under-recovery of fuel cost variances. It would be conceptually consistent to allocate Load Variation Transfers in the RSP between classes using the same approach as is used in the cost of service study.

The current approach of assigning the Load Variation Transfers to the class in which the load variations occur is inconsistent with: (i) the current RSP allocation of fuel cost variances resulting from changes in fuel price and hydraulic production and (ii) the allocation of fuel costs in the cost of service study.

Rates and Costs

It is a generally accepted regulatory principle that rates should reasonably reflect costs.

To assess the matching of rates and costs, I used the updated 2007 cost of service study reflecting the reduced IC load requirements to evaluate whether the Assignment Approach or the Cost of Service Approach results in rates that better reflect costs.

From the updated 2007 cost of service study, I compared the average cost for each customer to the average rate for each customer reflecting the Assignment Approach. The average rate is based on the average charge per kWh for each customer for the period January 1, 2007 to June 30, 2009, assuming the disposition of 100% of the June 30, 2009 IC RSP credit balance to the IC class on June 30, 2009.

Table 6 provides the results of this analysis for the existing customers in the IC class.

Table 6
Rates vs. Costs - Assignment Approach
(¢ per kWh for Jan. 2007 to June 2009)

	Average Rate[24]	Average Cost[25]	Difference	
			(¢ per kWh)	%
Corner Brook Pulp and Paper	2.857	5.70	(2.843)	(50)
North Atlantic Refining Limited	2.161	4.28	(2.119)	(50)
Teck Resources	1.254	4.72	(3.466)	(73)
Average	2.417	4.68	(2.263)	(48)

Table 6 shows that, using the Assignment Approach, the average rate charged to existing Industrial Customers over the last 2½ years would be approximately 50% of the updated average cost of service. This indicates that the Assignment Approach does not provide a reasonable matching of rates to costs for the IC class.

To further evaluate the matching of rates and costs, I reviewed the updated 2007 cost of service study to assess the changes in costs by class relative to the 2007 test year cost of service study.

[24] Response to Request for Information NP-NLH-13, Attachment 1. Assumes the June 30, 2009 balance related to the load variation component is allocated among each existing customer based on their most recent 12 months energy use and disbursed on that same date.

[25] Response to Request for Information CA-NLH-21. The unit costs are based upon the IC revenue requirement determined using the IC load assumptions set out in PUB-NLH-22.

Table 7 provides the results of this review.[26]

Table 7
Average Cost by Class
(¢ per kWh)

	2007 Test Year	2007 Update	Difference	
Class			**¢ per kWh**	**%**
Industrial	4.82	4.68	(0.14)	(2.9)
Newfoundland Power	6.48	6.07	(0.41)	(6.3)

The updated cost of service study indicates that, if the revised IC load projection was used in setting rates, there would be a reduction in rates of 2.9% for the IC class and 6.3% for Newfoundland Power.[27]

The change in costs for both Newfoundland Power and the IC class relative to the 2007 test year cost of service indicates that a better matching of rates and costs will result if the disposition of the RSP balance resulting from Load Variation Transfers is allocated between classes consistent with the Cost of Service Approach.

The use of the Assignment Approach does not provide as good a match of rates and costs for the IC class.

Rate Volatility

I also evaluated the two approaches to disposition of the Load Variation Transfers based on the potential for rate volatility.

[26] Request for Information CA-NLH-21.

[27] These cost reductions primarily result from reduced load requirements (both demand and energy) and the resulting reduction in fuel costs.

Two examples are provided to illustrate rate volatility effects: (i) the example of Vale Inco going into full production between test years and (ii) the proposed 38% rate increase in the Firm rate for Teck Resources.

Vale Inco

If Vale Inco requires its full annual operational load requirements prior to Hydro's next GRA, approximately $29 million per year in Load Variation Transfers would result.[28]

Under the current Assignment Approach, 100% of this $29 million would be reflected in a higher RSP Adjustment for the IC class. The RSP Adjustment for Newfoundland Power would not be affected under the Assignment Approach.

Table 8 provides an estimate of the impact on IC rates based on the Vale Inco load increase scenario.

Table 8
Illustrative IC Rate Impact – Vale Inco Load Increase
Assignment Approach

2007 IC Estimated Revenue[29]	$22.1 million
Vale Inco Estimated Revenue[30]	$26.8 million
Total Estimated IC Revenue	$48.9 million
IC Load Variation Transfer[31]	29.4 million
% IC Rate Change	60%

[28] 29.4 million = Vale Inco 2013 Load Forecast of 573,000,000 x (8.805¢ per kWh minus 3.676¢ per kWh). Source: Response to Request for Information NP-NLH-8.

[29] The 2007 pro-forma IC Revenue Requirement from PUB-NLH-22 which excludes Vale Inco.

[30] Based on a unit cost of 4.68¢ per kWh (from CA-NLH-21) times 573,000,000 kWh annual usage for Vale Inco (from NP-NLH-8).

[31] The IC Load Variation Transfer represents production costs in excess of the Vale Inco estimated energy revenue. Under the Assignment Approach, the $29.4 million Load Variation Transfer would be recovered through a revised annual IC RSP Adjustment.

Table 8 shows that, with the Assignment Approach, there would be an approximate 60% increase in rates to the IC class through the RSP Adjustment as a result of the Load Variation Transfers under the Vale Inco load increase scenario.

If the increased IC load requirement is dealt with through a GRA or using the Cost of Service Approach in the RSP Load Variation Component, the additional costs would be shared among all classes based upon their energy ratios.

Table 9 provides the estimated rate impacts for the IC Class and Newfoundland Power under the Cost of Service Approach for the Vale Inco load increase scenario.

Table 9
Illustrative IC Rate Impact – Vale Inco Load Increase
Cost of Service Approach

		IC Class	**Newfoundland Power**
Total Estimated Revenue	A	$48.9 million[32]	$299.0 million[33]
Energy Allocator[34]	B	17.7%	82.3%
Load Variation Transfer[35]	C=$29.4 million x B	$5.2 million	$24.2 million
% Rate Change	D= C ÷ A	10.6%	8.1%

Under the Cost of Service Approach, the estimated IC class rate increase of 10.6% resulting from the increased fuel costs is materially less than the estimated IC class rate increase of 60% that would result under the Assignment Approach.

[32] From Table 8.
[33] Source: Response to Request for Information CA-NLH-21.
[34] The energy allocators reflect the energy use of 487.2 GWh for the IC class excluding Vale Inco and 4,925.8 GWh for Newfoundland Power (both from NP-NLH-14) and 573 GWh for Vale Inco (from NP-NLH-8).
[35] For recovery through the annual RSP Adjustment.

Teck Resources

Teck Resources is currently served under a temporary reduced rate in accordance with Order No. P.U. 1 (2007).

Teck Resources currently has a -2.0¢ per kWh RSP Adjustment which when combined with the Base Rate results in a Firm Energy Charge of 1.676¢ per kWh.[36]

Table 10 provides the components of the Firm Energy Charge for Teck Resources.

Table 10
Teck Resources - Firm Energy Charge Components[37]

Base Rate			**3.676 ¢ per kWh**
RSP Adjustment			
	Historic Plan	0.000 ¢ per kWh	
	Current Plan	(2.000) ¢ per kWh	
	Fuel Rider	0.000 ¢ per kWh	
	Total		**(2.000) ¢ per kWh**
Energy Rate			**1.676 ¢ per kWh**

Approximately 70% of the RSP Adjustment (i.e., -1.4¢ per kWh) for Teck Resources can be attributed to the Load Variation Transfers resulting from the closure of the Abitibi Stephenville mill in 2006. Under the Assignment Approach, 100% of this Load Variation Transfer was credited to the Industrial Customers.[38]

[36] Teck Resources did not share in the Historical Plan Balance because the Duck Pond Mine was not a customer when the balance accumulated.
[37] Order No. P.U. 8 (2007), Schedule A, page 5 of 8.
[38] Response to Request for Information NP-NLH-20.

The proposed change in the RSP Adjustment, from -2.000¢ per kWh to -0.785¢ per kWh, is the basis for the proposed 38% rate increase to Teck Resources reflected in the Application.

If the Load Variation Component mechanics in 2006 had been consistent with the Cost of Service Approach currently recommended by Hydro, the RSP credit effect of the closure of Abitibi Stephenville mill would have been less than 0.2¢ per kWh and the current rate volatility concerns would not exist.[39]

3.4.2 The IC Rate Design Review

The IC Rate Design Review Report presented an agreement on a two-block rate structure for the IC class. The rate structure included a marginal cost based second block to improve the price signal and economic efficiency.[40]

There was agreement between Hydro and the Industrial Customers on the following general characteristics of the rate design:[41]

- The tail block or second block should be initially priced at Hydro's Test Year marginal cost of supply, and that second block price should be reviewed at each GRA.
- If customer loads remain at Test Year levels, the overall effect of the rate design should be revenue neutral compared to a single block embedded cost-based rate.

[39] Under the Cost of Service Approach approximately 10% of the Load Variation Transfer would have been credited to the IC class. 13.1% times 1.4¢ per kWh equals 0.18¢ per kWh. The 13.1% equals the 2006 IC load proportion at year-end based on the December 2006 RSP Activity Report.

[40] The IC Rate Design Review Report, a joint report of the IC class and Hydro, presented an alternative rate design for the IC class with a blocking structure similar to that in place for Newfoundland Power. The recommendations of the IC Rate Design Review Report have not yet been implemented. The IC Rate Design Review Report also identified some issues to be resolved before the rate structure could be implemented.

[41] IC Rate Design Review Report, page 9; Response to Request for Information NP-NLH-6.

- The rate design should ensure Industrial Customers have some portion of their load exposed to the marginal cost price signal in each month.

When addressing large load or block changes for the Industrial Customers, the IC Rate Design Review Report states:

> *When an existing customer changes its production process or otherwise materially increases output and therefore requires additional load, it may not be practical to price all energy sales at the tail block, or Holyrood rate. Such a rate structure may inhibit overall provincial economic growth.*[42]

To address this issue: Hydro and the IC class agreed that:

> *An IC will be able to apply to Hydro to have their first block energy adjusted to take account of significant changes to their business or output. The difference between the marginal cost of fuel and the energy revenue received should be recoverable by Hydro through an automatic rate adjustment.*[43]

The Assignment Approach in the Load Variation Component effectively prices all marginal usage by any customer of the IC class to the entire class through the RSP based on the test year Holyrood fuel price. The Assignment Approach conflicts with the accepted concept that the pricing for individual customers should reflect the marginal price.

The IC Rate Design Review Report presented a proposed solution to deal with pricing and cost recovery when a new Industrial Customer connects to the Island Interconnected system between

[42] IC Rate Design Review Report, page 10.

[43] IC Rate Design Review Report, page 1, bullet 3. Page 11 of the report also goes on to say: *When a new customer enters the system, it may not be practical to price all energy sales at the tail block, or Holyrood rate since this could result in barriers for new industry to develop in the province.*

test years. From a pricing perspective, that customer will be charged the test year average energy charge, in addition to regular IC demand charges, for all kilowatt-hours.[44]

Pricing a new Industrial Customer on an embedded cost basis would result in a cost recovery shortfall for Hydro, as the new load would be supplied through increased production at Holyrood and the revenue from the new customer would be based on embedded cost.[45]

To ensure reasonable cost recovery for Hydro, all parties including Hydro, the Industrial Customers, the Consumer Advocate and Newfoundland Power agreed that it would be reasonable to have an adjustment mechanism that adjusts rates for all customers on the Island Interconnected system.[46] The rate adjustment would result in rates for all classes increasing, based on the Cost of Service Approach, to permit Hydro to recover the additional fuel expenses net of the additional energy revenues resulting from the increased load requirements.

The agreement reached by all parties to the IC Rate Design Review Report on the approach to deal with system cost increases resulting from a new customer load is conceptually consistent with the Cost of Service Approach recommended by Hydro for disposition of the RSP balance resulting from Load Variation Transfers.

While the IC Rate Design Review Report only provided a solution to deal with a potential cost increase to the IC class, it should not matter whether the costs are increasing or decreasing when deciding on the fairness of a cost sharing approach. The rationale should be applied consistently.

[44] IC Rate Design Review Report, pages 11-12.
[45] As illustrated earlier in the Vale Inco example.
[46] IC Rate Design Review Report, page 12.

3.4.3 The RSP Review

The 2006 RSP Review, filed by Hydro at the 2006 GRA, identified a fairness issue with the Assignment Approach in dealing with Load Variation Transfers. Hydro proposed several changes to the RSP at its 2006 GRA, one of which was a proposal to use the Cost of Service Approach for the allocation of Load Variation Transfers between classes.

As a result of the 2006 GRA Settlement Agreement, all RSP issues were set aside for an RSP Review that was to be concluded through a technical conference open to all stakeholders by no later than October 31, 2007. Based on the timeframe agreed upon for the RSP Review, it was reasonable to anticipate that any changes resulting from the 2007 RSP Review would be implemented effective January 1, 2008.[47]

If the Board approves the use of the Cost of Service Approach for dealing with Load Variation Transfers on a go-forward or prospective basis (e.g., as of July 1, 2009), the customers of Newfoundland Power will be disadvantaged due to the regulatory lag of addressing Hydro's Load Variation Transfer recommendation presented at the 2006 GRA.

The 2007 RSP Review timeframe provided for in the 2006 GRA Settlement Agreement indicates it would be reasonable for the Board to approve that any Load Variation Transfers that have accumulated from January 1, 2008 (i.e., since the IC Firm rates were made interim) should be allocated based on the Cost of Service Approach.

[47] It is uncertain whether any resulting RSP change from the 2007 review would have caused a restatement of RSP balance attributable to the IC class for 2007.

3.5 Conclusion

Disposition of 100% of the RSP Load Variation Transfers since the 2007 test year to the Industrial Customers is not consistent with generally accepted ratemaking principles. The current Assignment Approach does not result in rates providing reasonable recovery of embedded costs for each class of customers and can result in rate volatility for customers in the IC class.

Hydro's recommended Cost of Service Approach for dealing with RSP Load Variation Transfers results in rates better reflecting costs and reduces potential rate volatility. The Cost of Service Approach is also consistent with the current RSP allocation of fuel cost variances resulting from changes in fuel price and hydraulic production.

The Cost of Service Approach is consistent with the proposed approach in the IC Rate Design Review Report, agreed to by all parties, to deal with load variations resulting from increases in production or the addition of a new customer.

It is appropriate that the Board approve a revision to the RSP to require the use of the Cost of Service Approach in dealing with Load Variation Transfers. While it may be conceptually sound to apply the Cost of Service Approach to Load Variation Transfers since January 1, 2007, the IC class rates did not become interim until January 1, 2008.

The use of the Cost of Service Approach effective January 1, 2008 would result in a better matching of revenues and costs from the time that the IC rates became interim than that provided using the Assignment Approach. This timeframe would also match the anticipated

implementation of Hydro's recommended change to be dealt with in the 2007 RSP Review provided for in the 2006 GRA Settlement Agreement.

It is appropriate that the Cost of Service Approach be used to determine the disposition of any balance in the RSP resulting from Load Variation Transfers that have accumulated since January 1, 2008.

4.0 PROPOSED IC RATES

4.1 General

The Application proposes:

(i) the rates approved on an interim basis effective January 1, 2008 for the Industrial Customers be approved on a final basis; and

(ii) the RSP Adjustment for Teck Resources increase from -2.000¢ per kWh to -0.785¢ per kWh effective July 1, 2009.

I take no issue with the Board approving the historical IC rates as final subject to the RSP balances for the IC class and Newfoundland Power being revised to reflect the use of the Cost of Service Approach to deal with Load Variation Transfers that have accumulated since January 1, 2008.

I also believe it is appropriate in this proceeding to look forward as to the potential impacts on the IC class if rates are permitted to be set effective January 1, 2010 in accordance with the RSP mechanics. Approval of Hydro's Application without consideration of the potential impacts on

2010 IC rates may result in potential rate volatility for IC customers, similar to that which prompted Hydro's request in 2007 to implement interim rates.

It is reasonable that the Board approve that Teck Resources pay the same rate as the remainder of the IC class. The RSP Adjustment for Teck Resources was intended to apply only until the recovery period for the Historical Plan Balance ended at December 31, 2007.

A large percentage rate impact for Teck Resources cannot be avoided but should not be unexpected given their current Firm Energy Charge is approximately 60% of that paid by the other customers in the class. Rate volatility is an accepted ratemaking consideration, but the Board must weigh it against the other considerations in a fair and balanced manner. In doing so, one should recognize what created the current status of the rates, and whether the customers should have expected that those rates would continue, especially if they are significantly below cost.

This Industrial Customer should have expected a material rate increase on January 1, 2008.[48]

4.2 2010 IC Rates

Hydro has recommended that the RSP Adjustment for 2010 be determined based upon the normal operation of the RSP.[49] This would normally be appropriate. However, customer impacts should be given consideration when determining the RSP Adjustment.

[48] Response to Request for Information NP-NLH-19 Attachments 5 and 16 provide copies of email correspondence between Hydro and the customer concerning the proposed rate change.

[49] Response to Request for Information CA-NLH-23(e).

Based on the responses to requests for information provided by Hydro, I have attempted to estimate the 2010 rate increase to the IC class based upon the operation of the RSP subsequent to the balances being adjusted to reflect the Cost of Service Approach in the Load Variation Component.

The current RSP Adjustment is -0.785¢ per kWh. The resetting of this RSP adjustment to zero would require an approximate $3.8 million increase to be recovered by IC rates.[50]

Based on Hydro's forecast of RSP balances at year-end 2009 excluding the Load Variation Component Balance, a recovery factor of approximately 1.8¢ per kWh would also be required to recover an approximate $9 million historical balance.[51]

There is currently no fuel rider reflected in the RSP Adjustment. However, based on the forecast fuel price used to set rates for Newfoundland Power, a fuel rider for the IC class of 0.655¢ to recover approximately $3.2 million in forecast additional fuel costs could result.[52]

There are two factors that will partially offset these increases: (i) the credit balance in the RSP attributable to the IC class resulting from Load Variation Transfers as of December 31, 2009; and (ii) a forecast year-end credit balance in the RSP resulting from hydro production exceeding the test year forecast (i.e., the hydraulic variation balance).

[50] Estimated based on 0.785¢ per kWh times 487.2 GWh IC class sales used to determine the updated 2007 IC revenue requirement of $22.1 million from PUB-NLH-22.

[51] Current IC 2009 year-end forecast RSP balance of ($35.4) million from NP-NLH-4, Attachment 1, page 2 of 2 less the IC 2009 year-end balance attributable to Load Variation Transfers of ($44.4) million from PUB-NLH-25 (rev 1), page 2 of 2.

[52] 0.655¢ per kWh estimated fuel rider from NP-NLH-15 times 487.2 GWh IC class sales from PUB-NLH-22.

Table 11 provides an estimate of the RSP credit to the Industrial Customers based on the Cost of Service Approach for disposition of the RSP balance resulting from Load Variation Transfers since January 1, 2008.

Table 11
Estimated IC Class Credit from Load Variations

		2007	2008	2009F	Total
RSP Load Variation ($millions)[53]	A	6.3	10.3	24.7	41.3
Estimated Finance Costs ($millions)[54]	B	1.1	1.2	0.7	3.0
Total($millions)	C=A+B	7.4	11.5	25.4	44.3
Allocation Factor[55]	D	100%	11.4%	9.2%	
IC Class Allocation ($millions)	E=DxC	7.4	1.3	2.3	11.0

Table 11 shows there will be an estimated $11.0 million credit to the RSP balance for the IC class to reduce the rate increase from updating the RSP Adjustment.

At the end of each year, 25% of the RSP hydraulic variation balance and 100% of the associated annual financing charges are allocated to customers in the computation of the RSP Adjustment. Hydro has forecast a $543,000 credit to the IC class at year-end 2009 from the hydraulic variation balance.[56]

[53] Table 5.
[54] Estimated from responses to Requests for Information NP-NLH-4 and NP-NLH-13.
[55] The allocation factors for 2008 and 2009 for the IC class are based on information provided in response to Request for Information CA-NLH-15 and the monthly RSP activity reports filed by Hydro. The allocation factor of 100% for 2007 reflects the Assignment Approach in the RSP Load Variation Component.
[56] Request for Information CA-NLH-15, Attachment 1, page 4 of 4.

Table 12 provides the revenue impact of both the current RSP Adjustment of -0.785¢ per kWh and a projected 2010 RSP Adjustment for the IC class based upon the normal operation of the RSP at year-end 2009.

Table 12
Revenue Impact of 2010 RSP Adjustment on IC Rates

		Estimated Annual Impact ($millions)	RSP Adjustment (¢ per kWh)
Current RSP Adjustment	A	**-3.8**[57]	**-0.785**
Current Balance Recovery[58]	B	$9.2	
Fuel Rider[59]	C	$3.2	
2009 Year-end Load Variation[60]	D	(11.0)	
2009 Hydraulic Transfer[61]	E	(0.5)	
Projected RSP Adjustment	F=B+C+D+E	**0.9**	**0.185**[62]
Increase	**F-A**	**4.7**	**0.958**

Table 12 shows that the current RSP Adjustment provides an annual savings of $3.8 million to the IC class.

Table 12 also shows that RSP Adjustment is projected to be 0.185¢ per kWh for 2010. This will result in an increase in the RSP Adjustment of approximately 1¢ per kWh. The increased RSP Adjustment corresponds to an approximate rate increase of $4.7 million or 21% for the IC class.[63] This is a large rate increase.[64]

[57] Estimated based on 487.2 GWh IC class sales from PUB-NLH-22 times -0.785¢ per kWh.
[58] Excluding load variation impacts. Current IC 2009 year-end forecast RSP balance of ($35.4) million from NP-NLH-4, Attachment 1, page 2 of 2 less the IC 2009 year-end balance attributable to Load Variation Transfers of ($44.4) million from PUB-NLH-25 (rev 1), page 2 of 2.
[59] 0.655¢ per kWh estimated fuel rider from NP-NLH-15 times 487.2 GWh IC class sales from PUB-NLH-22.
[60] From Table 11.
[61] Request for Information CA-NLH-15, Attachment 1, page 4 of 4.
[62] 0.185 = $0.9 million divided by 487.2 GWh.
[63] 21% = $4.7 million divided by $22.1 million estimated annual revenues from PUB-NLH-22.
[64] The projected rate impact will be higher for Teck Resources.

There are a couple of options available to reduce the customer rate impacts.

(i) RSP credits resulting from Load Variation Transfers are forecast to continue in 2010 as a result of continued reduced IC load relative to the 2007 test year. It may be appropriate to give consideration to the 2010 forecast Load Variation Transfers in setting the 2010 RSP Adjustment. This would reduce the estimated RSP Adjustment by approximately 0.27¢ per kWh and the rate increase impact by $1.3 million or 6%.[65]

(ii) A full disposition of the hydraulic variation credit balance could be proposed to further reduce the rate impact on the Industrial Customers. This would further reduce the estimated RSP Adjustment by approximately 0.23¢ per kWh and the rate increase impact by $1.1 million or 5%.[66]

The combined effect of utilizing both these options would result in the projected RSP Adjustment decreasing from 0.185¢ per kWh to approximately -0.3¢ per kWh for 2010.[67]

The resulting increase in the RSP Adjustment from -0.785¢ per kWh to -0.3¢ per kWh change would result in a rate impact of $2.3 million or approximately 10% for the IC class.[68]

[65] $1.3 million = $16.8 million forecast 2010 balance from Load Variation Transfers (NP-NLH-4) times 8% average energy allocator (CA-NLH-15). 0.27¢ per kWh = $1.3 million divided by 487.2 GWh and 6% = $1.3 million divided by $22.1 million estimated annual revenues from PUB-NLH-22.

[66] It is estimated that the IC portion of utilizing the full hydraulic variation balance will increase the IC RSP credit balance by $1.1 million (based on CA-NLH-15 and IC-NLH-4, Attachment 3, page 4). 0.23¢ per kWh = $1.1 million divided by 487.2 GWh and 5% = $1.1 million divided by $22.1 million estimated annual revenues.

[67] 0.3¢ per kWh is approximately equal to 0.185¢ per kWh from Table 12 + -0.27¢ per kWh for 2010 Load Variation Transfers + -0.23¢ per kWh for 100% disposition of hydraulic variation balance at year-end 2009.

[68] $2.3 million = $4.7 million increased revenue from Table 12 less $1.3million reduced rate change impact from reflecting 2010 Load Variation Transfers less $1.1 million reduced rate change impact as a result of 100% disposition of hydraulic variation balance at year-end 2009. 10% is approximately equal to $2.3 million divided by $22.1 million estimated annual revenues from PUB-NLH-22.

Adopting these modifications to the computation of the 2010 RSP Adjustment will enable Hydro to implement a cost-based rate for the IC class while giving reasonable consideration to the resulting customer impacts.

4.3 Conclusion

I take no issue with the Board approving the current IC rates as final for 2008 and 2009, subject to the RSP balances for the IC class and Newfoundland Power being revised to reflect the use of the Cost of Service Approach in the RSP Load Variation Component, effective January 1, 2008.

It is appropriate that the Firm Energy Rate for Teck Resources be the same as the Firm Energy Rate for the other Industrial Customers.

Customer rate impacts should be considered when proposing the RSP Adjustment to be implemented for IC customers for 2010.

To reduce customer rate impacts when determining 2010 rates for the IC class, the Board should give consideration to: (i) the forecast 2010 credits to the RSP that will result from IC load requirements continuing to be materially below the IC load requirements used in the 2007 test year; and (ii) a deviation from the approved approach for disposition of the forecast 2009 year-end credit balance in the hydraulic variation component of the RSP.

Personal Profile	
Name	Larry B. Brockman
Present Position	President, Brockman Consulting
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.
Qualifications Summary	Mr. Brockman has over 30 years experience as a utility planner, consultant, regulatory staff member, educator, rate designer, and expert witness. He specializes in strategic planning, regulatory assistance, competitive market assessments, bid evaluation processes, merger and acquisition analysis, cost of service, and rate design, and computer simulation, to help utilities and IPPs meet their strategic goals and maintain competitive advantage.
Prior Experience	During his career, Mr. Brockman has helped perform, and manage numerous consulting projects, including: ***Cost of Service and Rate Design*** Numerous cost of service and rate design investigations for Canadian and US utilities, examining the utilities' marginal and embedded cost-of-service and rate design procedures for their ability to meet the utilities' strategic and regulatory goals. In many of these examinations, Mr. Brockman has appeared as an expert witness. A Study of Entergy Mississippi's Formula Rate Plan, a Performance Based Ratemaking Approach, in support of testimony on changes needed to improve the plan. Built computer simulation model of utility's annual financial performance used in the study. Analysis of methods and witness support used by Georgia Power Company for inclusion of Purchased Power Expenses for a 2006 Fuel Adjustment Clause Proceeding.

	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. ***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 over 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. ***Financial Analysis and Asset Valuation*** Construction of detailed utility financial simulation models to forecast regional bulk-power prices and profits for use by Independent Power Producers (IPPs) and power marketers 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. ***Strategic Planning*** Analysis and witness support of Duke, Progress Energy, and Dominion North Carolina's 2005 Integrated Resource Plans for reasonableness and conformance with accepted Commission policy. 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 for use by investor owned and rural electric cooperatives, to ensure that winning bids are consistent with the utility's business goals and objectives. ***Computer Simulation of Power Systems*** Mr. Brockman is an expert in the use of utility simulation software for: resource planning; operations; and financial analysis including: PROMOD; PROVIEW; PROSCREEN II; PMDAM; EVALUATOR; GEMAPS, IREMM, and power flow programs. ***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 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. ***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. Responsible for annual revenues of $3.5 Million in 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. Testified on Cost of Service and Rate Design. Board of Commissioners of Public Utilities of the Province of Newfoundland and Labrador, 2003, Newfoundland Power rate case. Testified on Cost of Service and Rate Design
Clients Served	Mr. Brockman's clients have included: Ahlstrom Pyro Power Alabama Electric Cooperative Alberta Power Company Balch and Bingham 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