NEWFOUNDLAND AND LABRADOR BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

WRITTEN EVIDENCE

OF

JAMES H. VANDER WEIDE, PH.D.

FOR

NEWFOUNDLAND POWER INC.

MARCH 2012

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TABLE OF CONTENTS

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I. Introduction

Q 1 What is your name, occupation, and business address?

A 1 My name is James H. Vander Weide. I am Research Professor of Finance and Economics at Duke University, Fuqua School of Business. I am also President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to corporate clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina 27705.

Q 2 Please summarize your qualifications.

A 2 I graduated from Cornell University with a Bachelor's Degree in Economics and from Northwestern University with a Ph.D. in Finance. After joining the faculty of the School of Business at Duke University, I was named Assistant Professor, Associate Professor, Professor, and then Research Professor. I have published research in the areas of finance and economics and taught courses in these fields at Duke for more than thirty-five years. I am now retired from my teaching duties at Duke.

Q 3 Have you previously testified on financial and economic issues?

A 3 Yes. As an expert on financial and economic theory and practice, I have participated in more than 400 regulatory and legal proceedings before the National Energy Board, the Canadian Radio-Television and Telecommunications Commission, the public service commissions of forty-three states and four Canadian provinces, the U.S. Congress, the Federal Energy Regulatory Commission, the Federal Communications Commission, the National Telecommunications and Information Administration, the insurance commissions of five states, the Iowa State Board of Tax Review, the National Association of Securities Dealers, and the North Carolina Property Tax Commission. In addition, I have prepared expert testimony in proceedings before the U.S. Tax Court, the U.S. District Court for the District of Nebraska; the U.S. District Court for the

District of New Hampshire; the U.S. District Court for the District of Northern Illinois; the U.S. District Court for the Eastern District of North Carolina; the Montana Second Judicial District Court, Silver Bow County; the U.S. District Court for the Northern District of California; the Superior Court, North Carolina; the U.S. Bankruptcy Court for the Southern District of West Virginia; and the U. S. District Court for the Eastern District of Michigan. A summary of my research, teaching, and other professional experience is presented in Appendix 1, Exhibit 18.

Q 4 What is the purpose of your testimony?

A 4 I have been asked by Newfoundland Power Inc. ("Newfoundland Power" or "NP") to prepare an independent: (1) appraisal of the fairness of the returns provided by the Automatic Adjustment Formula ("the ROE Formula") of the Newfoundland and Labrador Board of Commissioners of Public Utilities ("the Board"); and (2) estimate of Newfoundland Power's cost of equity.

II. The Fair Rate of Return Standard

Q 5 Are you familiar with the fair rate of return standard?

A 5 Yes. The fair rate of return standard is a benchmark for determining whether a public utility's allowed rate of return is just and reasonable. According to the fair rate of return standard, a utility's allowed return is considered to be fair if it is: (1) equal to the returns investors expect to earn on other investments of comparable risk; (2) sufficient to allow the regulated firm to attract capital on reasonable terms; and (3) sufficient to allow the regulated firm to maintain its financial integrity.

Q 6 What is the economic definition of the required rate of return, or cost of capital, associated with particular investment decisions, such as the decision to invest in electric utility facilities?

A 6 The economic definition of the cost of capital is similar to the definition of a fair return, namely, the cost of capital is the return investors expect to receive on alternative investments of comparable risk.

Q 7 How does the cost of capital affect a firm's investment decisions?

A 7 From an economic perspective, a firm should only invest in a specific project if the expected return on the investment is greater than or equal to the company's cost of capital. Thus, the cost of capital serves as a hurdle rate for the firm's investment decisions.

Q 8 How does the cost of capital affect investors' willingness to invest in a company?

A 8 The cost of capital measures the return investors can expect on investments of comparable risk. The cost of capital also measures the investor's required rate of return on investment because rational investors will not invest in a particular investment opportunity if the expected return on that opportunity is less than the cost of capital. Thus, the cost of capital is a hurdle rate for both investors and the firm.

Q 9 Do all investors have the same position in the firm?

A 9 No. Bond investors have a fixed claim on a firm's assets and income that must be paid prior to any payment to the firm's equity investors. Since the firm's equity investors have a residual claim on the firm's assets and income, equity investments are riskier than bond investments. Thus, the cost of equity exceeds the cost of debt.

Q 10 What is the overall or average cost of capital?

A 10 The overall or average cost of capital is a weighted average of the cost of debt and cost of equity, where the weights are the percentages of debt and equity in a firm's capital structure.

Q 11 Can you illustrate the calculation of the overall or weighted average cost of capital?

A 11 Yes. Assume that the cost of debt is 6 percent, the cost of equity is 11 percent, and the percentages of debt and equity in the firm's capital structure are 50 percent and 50 percent, respectively. Then the weighted

average cost of capital is expressed by .50 times 6 percent plus .50 times 11 percent, or 8.5 percent.[1]

Q 12 How do economists define the cost of equity?

A 12 Economists define the cost of equity as the return investors expect to receive on alternative equity investments of comparable risk. Since the return on an equity investment of comparable risk is not a contractual return, the cost of equity is more difficult to measure than the cost of debt. However, as I have already noted, the cost of equity is greater than the cost of debt. The cost of equity, like the cost of debt, is both forward looking and market based.

Q 13 How do economists measure the percentages of debt and equity in a firm's capital structure?

A 13 Economists measure the percentages of debt and equity in a firm's capital structure by first calculating the market value of the firm's debt and the market value of its equity. The percentage of debt is then calculated by the ratio of the market value of debt to the combined market value of debt and equity, and the percentage of equity by the ratio of the market value of equity to the combined market values of debt and equity. For example, if a firm's debt has a market value of $25 million and its equity has a market value of $75 million, then its total market capitalization is $100 million, and its capital structure contains 25 percent debt and 75 percent equity.

Q 14 Why do economists measure a firm's capital structure in terms of the market values of its debt and equity?

A 14 Economists measure a firm's capital structure in terms of the market values of its debt and equity because: (1) the weighted average cost of capital is defined as the return investors expect to earn on a portfolio of the company's debt and equity securities; (2) investors measure the

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[1] The weighted average cost of capital may be calculated on either an after-tax or a before-tax basis. The difference between these calculations is that the after-tax cost of debt is used to calculate the weighted average cost of capital in an after-tax calculation. For simplicity, I present a before-tax calculation of the weighted average cost of capital in this example.

expected return and risk on their portfolios using market value weights, not book value weights; and (3) market values are the best measures of the amounts of debt and equity investors have invested in the company on a going forward basis.

Q 15 Why do investors measure the expected return and risk on their investment portfolios using market value weights rather than book value weights?

A 15 Investors measure the expected return and risk on their investment portfolios using market value weights because they calculate the expected return by dividing the expected future value of the investment by the current value of the investment, and market value is the best measure of the current value of the investment. From the point of view of investors, the historical cost or book value of their investment is entirely irrelevant to the current risk and return on their portfolios because if they were to sell their investments, they would receive market value, not historical cost. Thus, the expected return and risk can only be measured in terms of market values.

Q 16 Does the required rate of return on an investment vary with the risk of that investment?

A 16 Yes. Since investors are averse to risk, they require a higher rate of return on investments with greater risk.

Q 17 Do investors consider future industry changes when they estimate the risk of a particular investment?

A 17 Yes. Investors consider all the risks that a firm might incur over the future life of the company, including both business and financial risks.

Q 18 Are these economic principles regarding the fair return on capital recognized in any Supreme Court cases?

A 18 Yes. These economic principles regarding the fair rate of return on capital are recognized in at least one Canadian and two United States Supreme Court cases: (1) *Northwestern Utilities Ltd. v. Edmonton*, (1929); (2) *Bluefield Water Works and Improvement Co. v. Public Service Commission*; and (3) *Federal Power Commission v. Hope Natural Gas*

Co. In *Northwestern Utilities Ltd. v. Edmonton*, Mr. Justice Lamont states:

> The duty of the Board was to fix fair and reasonable rates; rates which, under the circumstances, would be fair to the consumer on the one hand, and which, on the other hand, would secure to the company a fair return for the capital invested. By a fair return is meant that the company will be allowed as large a return on the capital invested in its enterprise (which will be net to the company) as it would receive if it were investing the same amount in other securities possessing an attractiveness, stability and certainty equal to that of the company's enterprise. [*Northwestern Utilities Ltd. v. Edmonton*, [1929] S.C.R. 186.]

The Court clearly recognizes here that a regulated utility must be allowed to earn a return on the value of its property that is at least equal to its cost of capital.

III. Business and Financial Risks

Q 19 What is the difference between business and financial risk?

A 19 Business risk is the variability in return on investment that equity investors experience from a company's business operations when the company is financed entirely with equity. Financial risk is the additional variability in return on investment that equity investors experience due to the company's use of debt financing, or leverage.

Q 20 What are the primary determinants of an electric utility's business risk?

A 20 The business risk of investing in electric utility companies such as Newfoundland Power is caused by: (1) demand uncertainty; (2) operating expense uncertainty; (3) investment cost uncertainty; (4) high operating leverage; and (5) regulatory uncertainty.

Q 21 How does demand uncertainty affect an electric utility's business risk?

A 21 Demand uncertainty affects an electric utility's business risk through its impact on the variability of the company's revenues and its return on investment. The greater the uncertainty in demand, the greater is the uncertainty in the company's revenues and its return on investment.

Q 22 What causes the demand for electricity to be uncertain?

A 22 Demand uncertainty is caused by: (a) the strong dependence of electric demand on the state of the economy, population growth, and weather patterns; (b) the sensitivity of demand to changes in rates; and (c) the ability of some customers to conserve energy. Demand uncertainty is a problem for electric utilities because utilities need to plan for infrastructure additions in advance of demand.

Q 23 Does Newfoundland Power experience demand uncertainty?

A 23 Yes. As explained in the Company's evidence, Newfoundland Power experiences demand uncertainty associated with the aging of its customer base, the movement of rural customers to urban centers, and the potential long-run decline of the Newfoundland population.

Q 24 Why are an electric utility's operating expenses uncertain?

A 24 Operating expense uncertainty arises as a result of: (a) the prospect of increasing employee health care and pension expenses; (b) uncertainty regarding the cost of purchased power; (c) variability in maintenance costs and the costs of materials; (d) uncertainty over outages of the transmission and distribution systems, as well as storm-related expenses; (e) the prospect of increased expenses for security; and (f) high volatility in fuel prices or interruptions in fuel supply.

Q 25 Does Newfoundland Power experience operating expense uncertainty?

A 25 Yes. Newfoundland Power experiences operating expense uncertainty arising, for example, from storm-related expenses.

Q 26 Why are utility investment costs uncertain?

A 26 The electric utility business requires large investments in the plant and equipment required to deliver electricity to customers. The future amounts of required investments in plant and equipment are uncertain as a result of: (a) demand uncertainty; (b) uncertainty in the costs of construction materials and labor; and (c) uncertainty in the amount of additional investments to ensure the reliability of the company's transmission and distribution networks. Furthermore, the risk of investing in electric utility facilities is increased by the irreversible nature of the company's investments in utility plant and equipment.

Q 27 You note above that high operating leverage contributes to the business risk of electric utilities. What is operating leverage?

A 27 Operating leverage is the increased sensitivity of a company's earnings to sales variability that arises when some of the company's costs are fixed.

Q 28 How do economists measure operating leverage?

A 28 Economists typically measure operating leverage by the ratio of a company's fixed expenses to its operating margin (revenues minus variable expenses).

Q 29 How does operating leverage affect a company's business risk?

A 29 Operating leverage affects a company's business risk through its impact on the variability of the company's profits or income. Generally speaking, the higher a company's operating leverage, the higher is the variability of the company's operating profits.

Q 30 Do electric utilities typically experience high operating leverage?

A 30 Yes. The electric utility business requires a large commitment to fixed costs in relation to the operating margin on sales, a situation known as high operating leverage. The relatively high degree of fixed costs in the electric utility business arises primarily from the average electric utility's large investment in fixed plant and equipment. High operating leverage causes the average electric utility's operating income to be highly sensitive to demand and revenue fluctuations.

Q 31 Does regulation create uncertainty for electric utilities?

A 31 Yes. Investors' perceptions of the business and financial risks of electric utilities are strongly influenced by their views of the quality of regulation. Investors are painfully aware that regulators in some jurisdictions have been unwilling at times to set rates that allow companies an opportunity to recover their cost of service in a timely manner and earn a fair and reasonable return on investment. As a result of the perceived increase in regulatory risk, investors will demand a higher rate of return for electric utilities operating in those jurisdictions. On the other hand, if investors perceive that regulators will provide a reasonable opportunity for the

company to maintain its financial integrity and earn a fair rate of return on its investment, investors will view regulatory risk as minimal.

Q 32 Do utilities generally have cost recovery mechanisms that reduce their business and regulatory risks?

A 32 Yes. Utilities typically have cost recovery mechanisms such as fuel cost adjustment clauses and weather normalization clauses that reduce the uncertainty in a company's ability to recover some of their major prudently incurred expenses.

Q 33 What cost recovery mechanisms are available to Newfoundland Power?

A 33 Newfoundland Power has cost recovery mechanisms for the recovery of prudently incurred purchased power costs and future employee benefit costs.

Q 34 How do Newfoundland Power's cost recovery mechanisms compare to the cost recovery mechanisms available to other electric utilities?

A 34 Newfoundland Power's cost recovery mechanisms are typical for electric utilities throughout North America.

Q 35 What is financial leverage?

A 35 Financial leverage is the additional sensitivity of a company's earnings to sales variability that arises when a company uses fixed cost debt financing.

Q 36 How do economists measure financial leverage?

A 36 As discussed above, economists generally measure financial leverage by the percentages of debt and equity in a company's market value capital structure. Companies with a high percentage of debt compared to equity are considered to have high financial leverage.

Q 37 Does financial leverage affect the risk of investing in an electric utility's stock?

A 37 Yes. High debt leverage is a source of additional risk to utility stock investors because it increases the percentage of the firm's costs that are fixed, and the presence of higher fixed costs increases the variability of the equity investors' return on investment.

Q 38 How does Newfoundland Power's allowed equity ratio compare to that of other Canadian and U.S. utilities?

A 38 Newfoundland Power has an allowed equity ratio of 45 percent. Deemed equity ratios for regulated utilities in Canada are generally in the range 37 percent to 45 percent. The average allowed equity ratio for U.S. utilities is approximately 49 percent. These data support the conclusion that Newfoundland Power has slightly less financial risk than the average regulated Canadian utility and slightly more financial risk than the average U.S. regulated utility.

Q 39 What conclusion do you reach from your analysis of business and financial risks?

A 39 I conclude that Newfoundland Power is an average risk utility.

IV. The ROE Formula

Q 40 Are you familiar with the Board's ROE formula for Newfoundland Power?

A 40 Yes. The Board's ROE formula for Newfoundland Power has two parts: (1) an estimate of Newfoundland Power's cost of equity in a specific year, based on the application of the Capital Asset Pricing Model ("CAPM"); and (2) an automatic adjustment formula that "adjusts" the cost of equity in subsequent years for changes in the forecast interest rate on long-term Canadian government bonds.

Q 41 What is the CAPM?

A 41 The CAPM is an equilibrium model of the security markets in which the expected or required return on a given security is equal to the risk-free rate of interest, plus the company equity "beta," times the market risk premium:

Cost of equity = Risk-free rate + Equity beta x Market risk premium

The risk-free rate in this equation is the expected rate of return on a risk-free government security, the equity beta is a measure of the company's risk relative to the market as a whole, and the market risk premium is the premium investors require to invest in the market basket of all securities compared to the risk-free security.

Q 42 When did the Board last apply the CAPM to estimate Newfoundland Power's cost of equity?

A 42 The Board last applied the CAPM to estimate Newfoundland Power's cost of equity for 2010 in Order No. P. U. 43 (2009).

Q 43 What CAPM cost of equity did the Board find for Newfoundland Power in Order No. P. U. 43?

A 43 The Board found a CAPM cost of equity equal to 8.6 percent, based on a forecast long-term Canada government bond yield equal to 4.5 percent, an equity beta equal to 0.60, a market risk premium equal to 6.0 percent, and an allowance for financing flexibility equal to 0.50 percent (8.6 = 4.5 + 0.60 x 6 + 0.50).

Q 44 Did the Board rely entirely on the results of the CAPM to estimate Newfoundland Power's cost of equity for 2010?

A 44 No. The Board adjusted its 8.6 percent CAPM cost of equity result upward to 9.0 percent, based on its review of (1) the results of other cost of equity methodologies; (2) recent decisions of other regulators in Canada; and (3) Newfoundland Power's credit metrics.

Q 45 You mention that the Board's ROE formula also includes an automatic adjustment formula. Does the Board consider the continued use of the automatic adjustment formula in Order No. P. U. 43?

A 45 Yes. In Order No. P. U. 43, the Board concludes that the automatic adjustment formula should be continued in 2011 and 2012. As the Order states:

> Formulaic approaches to the determination of a return on equity do not allow for the exercise of discretion based on a comprehensive review of all the relevant circumstances at the time. The Board believes that the benefit of a cost of capital hearing must be weighed against the significant costs to customers. While it is clear that financial market conditions were unstable in late 2008 and early 2009 Newfoundland Power did not demonstrate that the use of the automatic adjustment formula is inappropriate for future years. Discontinuing the formula at this time would in the Board's view, be an excessive response to financial market conditions which, while severe in the fall of 2008 and spring of 2009, appear to be settling. The Board believes that it is appropriate to continue to use a formula to adjust

> Newfoundland Power's return on rate base for several years following a full review in a general rate application. Therefore the Board will order the continued use of the automatic adjustment formula for 2011 and 2012. [P. U. 43, p. 29]

Q 46 What is the Board's most recent ROE Formula for Newfoundland Power?

A 46 The Board's most recent ROE Formula is given by the equation:

$$ROE = 9.00\% + [0.80 \times (RFR - 4.50)]$$

where:

- 9.00 is the return on equity approved for rate making purposes in 2010;
- 0.80 is the adjustment coefficient for the change in the forecast risk-free rate;
- RFR is the risk-free rate; and
- 4.50 is the risk-free rate approved by the Board for the 2010 Test Year.

Q 47 The ROE Formula uses an adjustment coefficient equal to 0.80. How should this coefficient be interpreted?

A 47 The 0.80 adjustment coefficient reflects the Board's opinion that Newfoundland Power's required ROE changes by eighty percent of the forecasted change in long-term Canada government bond yields. Specifically, the 0.80 adjustment coefficient suggests that Newfoundland Power's required ROE increases by eighty basis points when the forecasted long-term Canada bond yield increases by one hundred basis points and declines by eighty basis points when the forecasted long-term Canada bond yield decreases by one hundred basis points.

Q 48 What does a 0.80 adjustment coefficient suggest about the equity investor's required risk premium on an investment in Newfoundland Power?

A 48 The 0.80 adjustment coefficient suggests that the equity investor's equity risk premium increases by twenty basis points when the interest rate on long-term Canada bonds declines by one hundred basis points.

Q 49 How is the risk-free rate determined in the ROE formula?

A 49 The risk-free rate is determined by adding the average of the three-month and twelve-month forecast of ten-year Government of Canada Bonds as published by Consensus Forecasts in the preceding November to the average observed spread between ten-year and thirty-year Government of Canada Bonds for all trading days in the preceding October.

Q 50 What is the value of the forecast risk-free rate at November 2011?

A 50 At November 2011, the forecast risk-free rate is 3.06 percent.

Q 51 Using a 3.06 percent forecast yield on long-term Canada bonds, what ROE is obtained using the ROE Formula?

A 51 The ROE Formula produces an ROE equal to 7.85 percent. This result is calculated as follows: 7.85 = 9.00 + [0.80 x (3.06 – 4.50)].

Q 52 What equity risk premium is suggested by the ROE Formula?

A 52 The ROE Formula indicates an equity risk premium equal to 4.79 percent (7.85 – 3.06 = 4.79).

V. Tests of the Fairness of the 7.85 Percent Formula ROE

Q 53 Have you performed any tests of the fairness of the 7.85 percent allowed ROE provided by the ROE Formula?

A 53 Yes. I have performed five tests of the fairness of the 7.85 percent ROE provided by the ROE Formula. First, I have examined evidence on the experienced returns achieved by equity investors in two groups of Canadian utilities compared to interest rates on long-term Canada bonds. My studies indicate that the average experienced equity risk premium on an investment in Canadian utility stocks, 6.7 percent (see Table 1), is approximately 190 basis points higher than the 4.79 percent risk premium produced by the ROE Formula. This evidence supports the conclusion that the ROE Formula does not provide a fair ROE for Newfoundland Power.

Second, I have examined evidence on the allowed rates of return on equity and allowed common equity ratios for U.S. electric and natural gas utilities. My studies indicate that average allowed rates of return on equity for U.S. utilities since 2009 are in the range 10.0 percent to 10.4 percent, and the average allowed equity ratio is approximately 49 percent. Since

the ROE Formula currently produces a 7.85 percent ROE on an allowed equity ratio of 45 percent, this evidence supports the conclusion that the ROE Formula fails to provide returns that are commensurate with returns on other investments of comparable risk.

Third, I have examined evidence on the sensitivity of the forward-looking, or ex ante, required equity risk premium on utility stocks to changes in interest rates. The ROE Formula suggests that Newfoundland Power's required ROE declines by eighty basis points when the risk-free rate declines by one hundred basis points. Contrary to the eighty-basis-point decline provided by the ROE Formula, my studies indicate that NP's required ROE declines by less than fifty basis points for every one hundred basis point decline in the risk-free rate. From my ex ante risk premium studies, I find that the forward-looking required equity risk premium on utility stocks, 7.7 percent, is almost three hundred basis points higher than the 4.79 percent risk premium suggested by the ROE Formula. This evidence further supports the conclusion that the ROE Formula does not provide a fair ROE for Newfoundland Power.

Fourth, I have examined evidence on the sensitivity of the equity risk premium implied by U.S. utility allowed rates of return on equity to changes in the interest rate on long-term government bonds. My studies indicate that U.S. utility allowed ROEs are significantly less sensitive to changes in interest rates on long-term government bonds than the allowed ROE established by the ROE Formula. Specifically, while the ROE Formula reduces the allowed ROE by eighty basis points when the forecasted yield to maturity on long-term government bonds declines by one hundred basis points, U.S. regulators typically reduce the allowed ROE by approximately fifty basis points when the yield to maturity on long-term government bonds declines by one hundred basis points. This evidence also supports the conclusion that the ROE Formula is not working.

Fifth, I have examined evidence on the volatility of returns on Canadian utility stocks compared to the volatility of returns on the

Canadian market index. My studies indicate that the volatility of returns on Canadian utility stocks exceeds or approximates the volatility of returns on the Canadian market index. Because investors demand a higher return for bearing more risk, this evidence also supports the conclusion that the equity risk premium on Canadian utility stocks is higher than the equity risk premium implied by the ROE Formula.

A. Evidence on Experienced Equity Risk Premiums on Investments in Canadian Utility Stocks

Q 54 How do you measure the experienced equity risk premium on an investment in Canadian utility stocks?

A 54 I measure the experienced equity risk premium on an investment in Canadian utility stocks from data on returns earned by investors in Canadian utility stocks compared to interest rates on long-term Canada bonds.

Q 55 How do you measure the return experienced by investors in Canadian utility stocks?

A 55 I measure the return experienced by investors in Canadian utility stocks from historical data on returns earned by investors in: (1) the S&P/TSX utilities stock index**[2]**; and (2) a basket of Canadian utility stocks created by BMO Capital Markets ("BMO CM").

Q 56 What companies are currently included in these indices of Canadian utility stock performance?

A 56 The companies currently included in the S&P/TSX utilities stock index are Atco Ltd., Atlantic Power Corporation, Algonquin Power & Utilities Corp., Capital Power Corporation, Canadian Utilities Limited, Emera

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[2] The legacy S&P/TSX utilities index was discontinued by Standard & Poor's in Spring 2002 when Standard & Poor's introduced a new S&P/TSX Composite utilities index that included the GICs 5500 utilities. Standard & Poor's provided total return index value data going back to 1999. The historical data on returns earned by investors in the S&P/TSX utilities index therefore includes total returns on the S&P/TSX legacy utilities index through 1998 and total returns on the new S&P/TSX composite utilities index from 1999 through 2011.

Incorporated, Fortis Inc., Just Energy Group Inc., Northland Power Inc., and TransAlta Corporation.

The BMO CM basket of utility and pipeline companies includes Canadian Utilities Ltd., Emera Inc., Enbridge Inc., Fortis Inc., and TransCanada Corporation. The BMO CM basket also includes return data for Westcoast Energy Inc. until December 2001, Terasen Inc. through July 2005, and Pacific Northern Gas through December 2010.

Q 57 What time periods are covered in your Canadian utility stock return data?

A 57 The S&P/TSX utilities stock return data cover the period 1956 through 2011, and the BMO CM stock return data cover the period 1983 through 2011.

Q 58 Why do you analyze investors' experienced returns over such long time periods?

A 58 I analyze investors' experienced returns over long time periods because experienced returns over short periods can deviate significantly from expectations. However, I also recognize that experienced returns over long periods may deviate from expected returns if the data in some portion of the long time period are unreliable.

Q 59 Would your study provide different risk premium results if you had included different time periods?

A 59 Yes. The risk premium results vary somewhat depending on the historical time period chosen. My policy is to go back as many years as it is possible to obtain reliable data. With regard to the S&P/TSX utilities index, the data begin in 1956, and for the BMO CM utility stock data set, the data begin in 1983.

Q 60 Why do you choose two sets of Canadian utilities stock return performance data rather than simply relying entirely on either the S&P/TSX utilities stock index data or the BMO CM utility stock data set?

A 60 I choose two sets of Canadian utility stock return performance data because each data set provides different information on Canadian utility stock returns. The S&P/TSX utilities index is valuable because it provides information on the returns experienced by investors in a portfolio of

Canadian utility stocks over a relatively long period of time. However, six of the ten companies included in the S&P/TSX utility index operate mainly in non-traditional utility markets. The BMO CM utility stock return database is valuable because it provides information on the experienced returns for a sample of Canadian companies that receive a significantly higher percentage of revenues from traditional utility operations than the companies in the S&P/TSX index. However, the time period covered is not as long as the period covered by the S&P/TSX utility index.

Q 61 How are the experienced returns on an investment in each utility data set calculated?

A 61 The experienced returns on an investment in each utility data set are calculated from the historical record of stock prices and dividends for the companies in the data set. From the historical record of stock prices and dividends, the index sponsors construct an index of investors' wealth at the end of each period, assuming a $100 investment in the index at the time the index was constructed. An annual rate of return is calculated from the wealth index by dividing the wealth index at the end of each period by the wealth index at the beginning of the period and subtracting one [$r_t = (W_t \div W_{t-1}) - 1$].

Q 62 How do you measure the interest rate earned on long-term Canada bonds in your experienced, or ex post, risk premium studies?

A 62 I use the interest rate data on long-term Canada bonds reported by the Bank of Canada.

Q 63 What average risk premium results do you obtain from your analysis of returns experienced by investors in Canadian utility stocks?

A 63 The average experienced risk premium is 6.7 percent, as shown below in Table 1. (The annual data that produce these results are shown in Exhibit 1 and Exhibit 2). This 6.7 percent risk premium is approximately 190 basis points higher than the 4.79 percent risk premium suggested by the ROE Formula.

TABLE 1
EX POST RISK PREMIUM RESULTS

COMPARABLE GROUP	PERIOD OF STUDY	AVERAGE STOCK RETURN	AVERAGE BOND YIELD	RISK PREMIUM
S&P/TSX Utilities	1956 – 2011	11.99	7.33	4.7
BMO CM Utilities Stock Data Set	1983 – 2011	16.01	7.24	8.8
Average				6.7

Q 64 What conclusions do you draw from your experienced, or ex post, risk premium studies about the required risk premium on an investment in Canadian utility stocks?

A 64 My ex post risk premium studies provide evidence that investors require an equity return that is at least 6.7 percentage points above the interest rate on long-term Canada bonds.

Q 65 Do you have any evidence that the required equity risk premium may actually be greater than 6.7 percentage points?

A 65 Yes. I provide evidence below that the required equity risk premium increases when interest rates decline and decreases when interest rates rise. Since the expected 3.06 percent yield on long Canada bonds is significantly less than the 7.3 percent average yield on long Canada bonds over the period of my ex post risk premium studies, the current required equity risk premium should be significantly higher than the average 6.7 percent equity risk premium I obtain from my ex post risk premium studies.

Q 66 How does your evidence on the experienced equity risk premium support your conclusion that the ROE Formula fails to provide a fair return on equity for Newfoundland Power?

A 66 My evidence supports my conclusion that the ROE Formula fails to provide a fair return on equity for Newfoundland Power because it suggests that investors require an equity risk premium on Canadian utility stocks equal to 6.7 percent, a value that is approximately 190 basis points higher than the risk premium suggested by the ROE Formula.

B. Evidence on Recent Allowed Rates of Return on Equity for U.S. Utilities

Q 67 Do you have evidence on recent allowed rates of return on equity for U.S. utilities?

A 67 Yes. I have evidence on recent allowed rates of return on equity for U.S. electric and natural gas utilities from January 2009 through December 2011. Since January 2009, the average allowed ROE for electric utilities is 10.4 percent, and for natural gas utilities, 10.1 percent. In 2011, the average allowed ROE for electric utilities is 10.3 percent, and for natural gas utilities, 10.0 percent (see Exhibit 3 and Exhibit 4).

Q 68 Why do you examine data on allowed rates of return on equity for U.S. utilities rather than Canadian utilities?

A 68 I examine data on allowed rates of return on equity for U.S. utilities rather than Canadian utilities because allowed rates of return on equity for U.S. utilities are based on cost of equity studies for utilities at the time of each case rather than on an ROE formula such as the ROE Formula. Thus, recent allowed rates of return on equity for U.S. utilities are an independent test of whether the ROE Formula provides a fair ROE for Newfoundland Power.

Q 69 Are allowed rates of return on equity the best measure of the cost of equity at each point in time?

A 69 No. Since the cost of equity is determined by investors in the marketplace, not by regulators, the cost of equity is best measured using market models such as the equity risk premium and the discounted cash flow model. However, as noted above, because allowed rates of return in non-formula jurisdictions are based on regulators' judgments regarding the cost of equity and fair rate of return, they provide additional information on the fairness of the ROE provided by the ROE Formula.

Q 70 How do the average allowed ROEs for U.S. electric and natural gas utilities compare to the ROE implied by the ROE Formula?

A 70 The average allowed rates of return on equity for U.S. utilities are in the range 10.0 percent to 10.4 percent. As noted above, the ROE Formula

currently provides an ROE equal to 7.85 percent. Thus, the average allowed returns for the U.S. utilities exceed the ROE provided by the ROE Formula by 215 to 255 basis points.

Q 71 Can the difference between allowed ROEs for U.S. utilities and the ROE provided by the ROE Formula be explained by differences in business risk?

A 71 No. The business risk of electric and natural gas utilities is approximately the same in the U.S. as it is in Canada.

Q 72 Why is the business risk of electric and natural gas utilities approximately the same in the U.S. as it is in Canada?

A 72 The business risk of electric and natural gas utilities is similar in the U.S. and Canada because: (1) U.S. electric and natural gas utilities rely on essentially the same electric and natural gas technologies to deliver their services to the public as electric and gas utilities in Canada; (2) the economics of electric and natural gas transmission and distribution is similar in the U.S. and Canada; and (3) U.S. electric and gas utilities are regulated under similar cost-based regulatory structures and fair rate of return principles as Canadian utilities.

Q 73 Some observers have argued that Canadian utilities have lower regulatory risk than U.S. utilities because Canadian regulators generally make greater use of cost adjustment and revenue stabilization mechanisms than U.S. regulators. Do you agree with this argument?

A 73 No. U.S. utilities have many cost adjustment and revenue stabilization mechanisms similar to those of Canadian utilities. For example, many U.S. natural gas distribution companies have cost adjustment mechanisms for the cost of purchased gas, and revenue stabilization mechanisms for weather normalization and declining customer usage. In addition, U.S. natural gas utilities increasingly have rate designs that allow them to recover higher percentages of their fixed costs through fixed monthly rates rather than through variable rates. Many U.S. electric utilities have cost adjustment mechanisms for costs of fuel and purchased power, environmental expenses, demand-side management program

costs, renewables expenses, and new generation plant investment; and revenue stabilization mechanisms for conservation and weather normalization. Some electric utilities have cost adjustment mechanisms for storm damage expenses and FERC-approved transmission expenses.

Q 74 Do cost recovery and revenue stabilization mechanisms guarantee that a public utility will earn its cost of equity?

A 74 No. Regulatory risk is associated with the possibility that a utility will be unable to earn its required rate of return as a result of regulation. Although cost recovery and revenue stabilization mechanisms generally reduce the gap between a utility's actual and allowed returns, they do not necessarily reduce the gap between a utility's actual and required returns. To the extent that they are regulated through formula ROEs, Canadian utilities may face greater regulatory risk than U.S. utilities because formula ROEs may be more likely to differ from the market cost of equity than ROEs based on market evidence in each rate proceeding.

Q 75 How does the financial risk of Canadian utilities compare to the financial risk of U.S. utilities?

A 75 Canadian utilities have greater financial risk than U.S. utilities because U.S. utilities generally have average allowed equity ratios in the range 48 percent to 52 percent (see Exhibit 5 and Exhibit 6), whereas Canadian utilities generally have allowed equity ratios in the range 37 percent to 45 percent.

Q 76 What conclusions do you draw from your evidence that allowed ROEs for comparable U.S. utilities are significantly higher than the ROE provided by the ROE Formula?

A 76 My evidence on allowed ROEs for U.S. utilities provides further support for the conclusion that the ROE Formula fails to provide a fair rate of return on equity for Newfoundland Power.

C. Evidence on the Sensitivity of the Forward-looking Required Equity Risk Premium on Utility Stocks to Changes in Interest Rates

Q 77 How do you study the sensitivity of the forward-looking required equity risk premium on utility stocks to changes in interest rates?

A 77 I study the sensitivity of the forward-looking required equity risk premium on utility stocks to changes in interest rates in two steps. First, I estimate the forward-looking required equity risk premium on utility stocks in each month of my study period. Second, I perform a statistical regression analysis of the relationship between changes in the required equity risk premium and changes in interest rates.

Q 78 Please describe how you measure the forward-looking required equity risk premium on an equity investment in utility stocks in each month of your study period.

A 78 My estimate of the required equity risk premium is based on studies of the discounted cash flow ("DCF") expected return on a comparable group of utilities in each month of my study period compared to the interest rate on long-term government bonds. Specifically, for each month in my study period, I calculate the risk premium using the equation,

$$RP_{COMP} = DCF_{COMP} - I_B$$

where:

RP_{COMP} = the required risk premium on an equity investment in the comparable companies,

DCF_{COMP} = average DCF expected rate of return on a portfolio of comparable companies; and

I_B = the yield to maturity on an investment in long-term U.S. Treasury bonds.

Q 79 Please describe the DCF model you use to estimate the forward-looking, or ex ante, required risk premium on an equity investment in utility stocks.

A 79 The DCF model is based on the assumption that investors value an asset on the basis of the future cash flows they expect to receive from owning the asset. Under the assumption that future cash flows grow at a

constant rate, *g*, the resulting cost of equity equation is $k = D_1/P_s + g$, where *k* is the cost of equity, D_1 is the equivalent future value of the next four quarterly dividends at the end of the year, P_s is the current price of the stock, and *g* is the constant annual growth rate in earnings, dividends, and book value per share. A complete description of my approach to calculating the DCF-estimated cost of equity for my comparable group of utilities is contained in Exhibit 19, Appendix 2.

Q 80 What comparable companies do you use in your forward-looking equity risk premium studies?

A 80 I use the Moody's group of 24 electric utilities because they are a widely-followed group of utilities and the use of this constant group greatly simplifies the data collection task required to estimate the ex ante risk premium over the months of my study. Simplifying the data collection task is desirable because my forward-looking equity risk premium studies require that the DCF model be estimated for every company in every month of the study period. In addition, all the utilities in my study: (1) pay dividends; (2) have I/B/E/S growth forecasts; (3) are not in the process of being acquired; (4) have a Value Line Safety Rank of 1, 2, or 3; and (5) have investment grade bond ratings.

Q 81 Why do you use U.S. utilities rather than Canadian utilities in your forward-looking, or ex ante, risk premium studies?

A 81 My ex ante risk premium studies rely on the DCF model to determine the expected risk premium on utility stocks. As noted above, the DCF model requires estimates of investors' growth expectations, which are best measured from the average of analysts' growth forecasts for each company. The difficulty with using Canadian utilities is that there are very few, if any, analysts' growth forecasts available for each Canadian utility over the twelve year time period of my study.

Q 82 How do you test whether your forward-looking required equity risk premium estimates are sensitive to changes in interest rates?

A 82 To test whether my estimated monthly equity risk premiums are sensitive to changes in interest rates, I perform a regression analysis of the

relationship between the forward-looking equity risk premium and the yield to maturity on 20-year U.S. Treasury bonds using the equation:

$$RP_{COMP} = a + (b \times I_B) + e$$

where:

RP_{COMP} = risk premium on comparable company group;

I_B = yield to maturity on long-term U.S. Treasury bonds;

e = a random residual; and

a, b = coefficients estimated by the regression procedure.

Q 83 What does your regression analysis reveal regarding the sensitivity of the forward-looking required equity risk premium to changes in interest rates?

A 83 My regression analysis reveals that the forward-looking required equity risk premium increases by more than fifty basis points when the yield to maturity on long-term government bonds declines by one hundred basis points. These results suggest that, contrary to the eighty-basis point decline in the cost of equity that is implied by the ROE Formula, the cost of equity for utilities declines by less than fifty basis points when the yield on long-term government bonds declines by one hundred basis points. A more detailed description of my regression analysis is contained in Exhibit 20, Appendix 3. The risk premium data used in the regression analysis are shown in Exhibit 7.

Q 84 What risk premium estimate do you obtain from your forward-looking risk premium studies?

A 84 I obtain a forward-looking risk premium equal to 7.7 percent (see Exhibit 20, Appendix 3).

Q 85 What do your forward-looking equity risk premium studies imply about the return on equity provided by the ROE Formula?

A 85 Like my studies of experienced risk premiums on Canadian utility stocks, my forward-looking equity risk premium studies indicate that the ROE Formula fails to provide a fair return on equity for Newfoundland Power.

D. Evidence on the Sensitivity of the Allowed Equity Risk Premium for U.S. Utilities to Changes in Interest Rates

Q 86 How do you define the allowed equity risk premium for U.S. utilities?

A 86 I define the allowed equity risk premium as the difference between the average allowed return on equity for U.S. utilities and the yield to maturity on long-term U.S. Treasury bonds.

Q 87 How do you test whether the allowed equity risk premium is sensitive to changes in interest rates?

A 87 I test whether the allowed equity risk premium, and, hence, the allowed ROE, is sensitive to changes in interest rates by performing a regression analysis of the relationship between the allowed equity risk premium and the yield to maturity on 20-year U.S. Treasury bonds over the period 1988 through 2011. Recall that the sensitivity of the allowed equity risk premium to changes in interest rates is equal to the sensitivity of the allowed ROE to interest rate changes minus one hundred basis points. For example, if the equity risk premium increases by fifty basis points when interest rates decline by one hundred basis points, then the allowed equity return would decline by fifty basis points when interest rates decline by one hundred basis points.

Q 88 What are the results of your regression analysis?

A 88 I find that when the yield to maturity on long-term government bonds decreases by one hundred basis points, the allowed equity risk premium increases by approximately fifty basis points. This result indicates that the allowed ROE for U.S. utilities decreases by approximately fifty basis points when the yield to maturity on long-term government bonds declines by one hundred basis points. In contrast, the ROE Formula causes the allowed ROE to decline by eighty basis points when the yield on long Canada bonds declines by one hundred basis points. The allowed ROE

and equity risk premium data in my study and my regression results are shown in Exhibit 8.

Q 89 You note that your regression results indicate that the equity risk premium varies inversely with interest rates. What forecast allowed equity risk premium result do you obtain from your regression studies when the interest rate on long-term government bonds is 3.06 percent?

A 89 I obtain a forecast allowed equity risk premium equal to 6.8 percent. This forecast allowed equity risk premium for U.S. utilities is two hundred basis points higher than the 4.79 percent basis point equity risk premium determined from the ROE Formula at November 2011.

Q 90 What conclusions do you reach from your analysis of the sensitivity of allowed U.S. equity risk premiums to changes in interest rates?

A 90 I conclude that the ROE Formula underestimates the cost of equity for Newfoundland Power.

E. Evidence on the Relative Risk of Returns on Canadian Utility Stocks Compared to the Canadian Market Index

Q 91 What data do you examine on the relative risk of Canadian utility stocks compared to the risk of the Canadian stock market as a whole?

A 91 I examine the standard deviation, or volatility, of utility stock returns compared to the standard deviation, or volatility, of the returns on the TSX market index.

Q 92 What is the standard deviation, or volatility, of returns on Canadian utility stocks compared to the standard deviation of returns on the Canadian market index?

A 92 As shown below, over comparable annual time periods, the standard deviation of returns for Canadian utility stocks has exceeded or approximated the standard deviation of returns for the Canadian market index.

TABLE 2
STANDARD DEVIATION OF ANNUAL RETURNS
BMO CM UTILITIES STOCK DATA SET,
S&P/TSX UTILITIES, AND S&P/TSX COMPOSITE

PERIOD	BMO CM UTILITIES STOCK DATA SET	S&P/TSX UTILITIES INDEX	S&P/TSX COMPOSITE
1983 – 2011	16.41	17.40	16.58
1956 – 2011		15.26	16.67

Q 93 What conclusions do you draw from your evidence that the standard deviation of annual returns on Canadian utility stocks has exceeded or approximated the standard deviation of returns on the Canadian market as a whole?

A 93 I conclude that the risk of Canadian utility stocks compared to the risk of the Canadian stock market as a whole is greater than is implied by the ROE formula. Specifically, while the ROE Formula implies that Canadian utility stocks are only half as risky as the stock market as a whole (the ROE Formula assumes a beta equal to 0.60 for Canadian utility stocks), my evidence indicates that Canadian utility stocks have approximately the same risk as the Canadian stock market as a whole.

Q 94 What conclusions do you draw from your tests of the fairness of the results produced by the Board's ROE Formula?

A 94 I conclude that the Board's ROE Formula produces an ROE that fails to satisfy the fair rate of return standard. Thus, I conclude that the Board's ROE Formula should be suspended.

VI. Newfoundland Power's Cost of Equity

A. Comparable-risk Companies

Q 95 How do you estimate Newfoundland Power's cost of equity?

A 95 I estimate Newfoundland Power's cost of equity by first identifying companies of similar risk to Newfoundland Power and then applying several standard cost of equity methodologies to data for these companies.

Q 96 What criteria do you use to select companies whose risk is similar to that of Newfoundland Power?

A 96 I use the following criteria to select groups of similar risk companies: (1) must have stock that is publicly traded; (2) must have sufficient available data to reasonably apply standard cost of equity estimation techniques; (3) must be comparable in risk; and (4) taken together, must constitute a relatively large sample of companies.

Q 97 Why must comparable companies be publicly traded?

A 97 Comparable companies must be publicly traded because information on a company's stock price is a key input in standard cost of equity estimation methods. If the company is not publicly traded, the information required to estimate the cost of equity will not be available.

Q 98 Why is data availability a concern in estimating the cost of equity for Newfoundland Power?

A 98 Data availability is a concern because standard cost of equity estimation methods like the equity risk premium and the DCF require estimates of inputs, such as the required risk premium and the expected growth rate, that are inherently uncertain. If there is insufficient data available to estimate these inputs, there is little basis for arriving at a reasonable estimate of the cost of equity for the comparable risk companies.

Q 99 What companies do you consider as potential risk-comparable companies for the purpose of estimating the cost of equity for Newfoundland Power?

A 99 I consider two groups of Canadian utilities and two groups of U.S. utilities.

Q 100 What two groups of Canadian utilities do you consider?

A 100 I consider the small group of Canadian utilities included in the BMO CM's basket of utility and pipeline companies and a larger group consisting of the companies in the S&P/TSX utilities index.

Q 101 What companies are included in the BMO CM basket of Canadian utility stocks?

A 101 As noted above, the BMO CM basket of utility and pipeline companies includes Canadian Utilities Ltd., Emera Inc., Enbridge Inc., Fortis Inc., and TransCanada Corporation.

Q 102 Does the BMO CM basket of Canadian utilities include all large publicly-traded Canadian utilities with a significant percentage of assets devoted to regulated utility services?

A 102 Yes. The five companies in the BMO CM basket of Canadian utilities are the only large publicly-traded Canadian utilities with a significant percentage of assets devoted to regulated utility services.

Q 103 Can you provide a general overview of the business operations of the companies in the BMO CM basket of Canadian utilities?

A 103 Yes. The business operations of the companies in the BMO CM basket of Canadian utilities may be summarized as follows.

Canadian Utilities Ltd. An international energy company with business operations in Canada, Great Britain, and Australia. Major business segments include Utilities (pipelines, natural gas and electricity transmission and distribution), Energy (power generation, natural gas gathering, processing, storage, and liquids extraction); Structure & Logistics (manufacturing, logistics, and noise abatement); and Technologies (business systems solutions). Canadian Utilities has approximately 68 percent of total assets devoted to its utilities segment.

Emera Inc. Invests in electricity generation, transmission, and distribution, gas transmission, and utility energy services. Its business segments include NSPI, Maine Utility Operations, Caribbean Utility Operations, and Brunswick Pipelines. Emera has approximately 56 percent of total assets associated with its electric utility operations in Nova Scotia and an additional 26 percent associated with its electric utility operations in Maine and the Caribbean.

Enbridge Inc. A leader in energy transportation and distribution in North America and internationally. Enbridge has approximately 38 percent of its total assets associated with its Liquids Pipelines segment and 25 percent of total assets are associated with its Gas Distribution segment.

Fortis Inc. Invests in regulated electric and gas utility operations, non-regulated electric generation operations, and real estate operations.

Fortis Inc. has approximately 85 percent of its total assets associated with its Canadian utility operations. Fortis Inc. is the parent of Newfoundland Power.

TransCanada Corp. Operates the most extensive natural gas pipeline in Canada, owns and operates large natural gas and oil pipeline systems in North America, and invests in unregulated power projects. TransCanada has approximately 48 percent of its total assets associated with its natural gas pipeline operations, 19 percent with its oil pipeline operations, and 29 percent with its power generation and energy infrastructure operations.

Specific segment information for each of these companies is shown in Exhibit 9.

Q 104 What are the advantages of using the BMO CM basket of Canadian utilities as risk comparables for the purpose of estimating the cost of equity for Newfoundland Power?

A 104 The primary advantage of the BMO CM basket of Canadian utilities is that it only includes Canadian companies that receive a significant portion of their revenues from regulated utility operations. The primary disadvantage of the BMO CM basket of Canadian utilities is that three of the five companies also have significant investment in unregulated operations; and some of their investments in regulated operations are pipeline operations rather than electric or natural gas utility operations.

Q 105 What companies are included in the S&P/TSX utilities index?

A 105 The companies currently included in the S&P/TSX utilities stock index are Atco Ltd., Atlantic Power Corporation, Algonquin Power & Utilities Corp., Capital Power Corporation, Canadian Utilities Limited, Emera Incorporated, Fortis Inc., Just Energy Group Inc., Northland Power Inc., and TransAlta Corporation.

Q 106 Are any of the companies in the S&P/TSX utilities index related to one another?

A 106 Yes. Atco Ltd. is a utility holding company that owns 52 percent of Canadian Utilities Limited. Since Atco has a majority interest in Canadian

Utilities and only a small amount of assets that are not jointly owned with Canadian Utilities, Atco's financial statements reflect essentially the same information as Canadian Utilities' financial statements.

Q 107 The S&P/TSX utilities index contains six other companies that are not included in the BMO CM basket of Canadian utilities. Can you provide a general overview of the companies in the S&P/TSX utilities index that are not included either directly or indirectly in the BMO CM basket of Canadian utilities?

A 107 Yes. The business operations of these six companies can be summarized as follows.

Atlantic Power Corporation. An independent electric power producer that owns interests in a diversified portfolio of independent non-utility power generation projects and one transmission line in the United States.

Algonquin Power & Utilities Corp. Owns and operates a diversified portfolio of renewable energy and utility businesses through its subsidiary companies. Algonquin has two business segments: Algonquin Power Company generates and sells electric energy; and Liberty Utilities provides utility services related to electricity, natural gas, water, and wastewater. Algonquin has approximately 68 percent of its total assets that are related to its unregulated electric power generation and marketing segment and 21 percent related to its utilities segment.

Capital Power Corporation. An independent North American power producer that develops, acquires, and operates power generation from a variety of energy sources.

Just Energy Group Inc. Primarily involved in the sale of natural gas, electricity, and green energy products to residential and commercial customers under long-term contracts in the United States and Canada.

Northland Power Inc. Operates power generating stations and wind farms, sells electricity and steam, and implements environmental and monitoring systems.

TransAlta Corporation. A wholesale power generator and marketer with operations in Canada, the United States, and Australia.

Exhibit 10 shows segment information for the two companies in the S&P/TSX Utilities index with regulated utility operations that are not in the BMO CM data set. The remaining six companies' total assets are only associated with unregulated business operations.

Q 108 What are the advantages of using the S&P/TSX utilities index as comparables in this proceeding?

A 108 The primary advantage of using the S&P/TSX utilities index is that there are more companies in the index and return data for this index is available for a longer period of time than for the BMO CM basket of utility stocks. The primary disadvantage is that six of the ten companies in this group do not have a significant percentage of assets devoted to regulated utility service.

Q 109 What are the advantages of using U.S. utility groups to estimate the cost of equity for Newfoundland Power?

A 109 The primary advantages of using my U.S. utility groups to estimate Newfoundland Power's cost of equity are that: (1) they include a significantly larger sample of companies with traditional utility operations than my Canadian groups; (2) reasonable estimates of expected growth rates are available for these companies, whereas the same data are not available for the Canadian utilities; and (3) historical data for the U.S. utilities are available for a much longer length of time than for the Canadian utilities.

Q 110 What percent of total assets in your U.S. electric utility group are devoted to regulated utility services?

A 110 On average, the companies in my U.S. electric utility group have 85 percent of total assets associated with regulated utility operations (see Exhibit 11).

Q 111 What percent of total assets in your U.S. natural gas utility group are devoted to regulated utility services?

A 111 Approximately 84 percent of total assets of my U.S. natural gas utility group are devoted to regulated utility services (see Exhibit 12).

Q 112 What are the average bond ratings for the companies in your U.S. utility groups?

A 112 The average bond rating for the companies in my U.S. electric utility group is BBB+, and the average bond rating for the companies in my U.S. natural gas group is A (see Exhibit 13).

Q 113 What do bond ratings measure?

A 113 Bond ratings measure the risk that a company will be unable to pay the interest and principal on its debt. Hence, bond ratings are frequently considered to be a measure of the likelihood of a company declaring bankruptcy.

Q 114 Are bond ratings a reasonable measure of the risk of investing in a company's stock?

A 114 No. As discussed above, the risk of investing in a company's stock is best measured by the expected variability in the return on the stock investment.

Q 115 Do you have evidence that bond ratings are a poor indicator of the risk of investing in a company's equity?

A 115 Yes. I have examined the average allowed rate of return on equity for U.S. electric utilities in different bond rating categories, based on decisions beginning January 2010 through February 2012, to determine whether the allowed ROE depends on the utility's bond rating. If bond ratings are an indicator of the risk of investing in a utility's equity, one would expect that there would be an inverse relationship between a utility's bond rating and its allowed ROE, that is, that utilities with higher bond ratings would have lower allowed ROEs and vice versa. However, I find no difference in allowed ROEs for utilities in different bond rating categories (see Table 3 below).

TABLE 3
COMPARISON OF ALLOWED RATES OF RETURN
TO BOND RATING CATEGORY

BOND RATING CATEGORY	NUMBER OF COMPANIES IN CATEGORY	RETURN ON EQUITY	EQUITY RATIO
A- and above	55	10.3	50.7
BBB+	39	10.2	48.6
BBB	39	10.3	47.9
BBB-	28	10.1	48.5
Below investment grade	11	10.0	47.5
Total/Average	172	10.2	49.1

Q 116 Based on the evidence you have reviewed, should the Board give weight to cost of equity results for U.S. utilities?

A 116 Yes. As discussed above, the U.S. utilities included in my cost of equity studies are comparable in risk to the Canadian utilities. Furthermore, the U.S. utilities included in my studies are more involved in traditional utility operations than most of the companies included in the Canadian utilities indices. In addition, the sample of U.S. regulated utilities is significantly larger than the sample of Canadian regulated utilities, and the data required to estimate the cost of equity are more readily available for the U.S. utilities than for the Canadian utilities. For these reasons, the U.S. data provide important information on the cost of equity for Newfoundland Power and should be considered along with Canadian-specific evidence to estimate the cost of equity for Newfoundland Power.

Q 117 Has the National Energy Board ("NEB") determined that cost of equity evidence for U.S. utilities is useful in determining the cost of equity for Trans Québec & Maritimes Pipeline Inc. ("TQM")?

A 117 Yes. In Decision RH-1-2008 the Board finds:

> In light of the Board's views expressed above on the integration of U.S. and Canadian financial markets, the problems with comparisons to either Canadian negotiated or litigated returns, and the Board's view that risk differences between Canada and the U.S. can be understood and accounted for, the Board is of the view that U.S. comparisons are very informative for determining a fair return for TQM for 2007 and 2008. [RH-1-2008 at 71.]

B. Estimating the Cost of Equity

Q 118 What methods do you use to estimate the cost of equity for Newfoundland Power?

A 118 I use two generally accepted methods: the equity risk premium and the discounted cash flow ("DCF"). The equity risk premium method assumes that the investor's required rate of return on an equity investment is equal to the interest rate on a long-term bond plus an additional equity risk premium to compensate the investor for the risks of investing in equities compared to bonds. The DCF method assumes that the current market price of a firm's stock is equal to the discounted value of all expected future cash flows.

1. Equity Risk Premium Method

Q 119 Please describe the equity risk premium method.

A 119 The equity risk premium method is based on the principle that investors expect to earn a return on an equity investment that reflects a "premium" over and above the return they expect to earn on an investment in a portfolio of bonds. This equity risk premium compensates equity investors for the additional risk they bear in making equity investments versus bond investments.

Q 120 How do you measure the required risk premium on an equity investment in your comparable risk companies?

A 120 I use two methods to estimate the required risk premium on an equity investment in my comparable risk companies. The first is called the ex post risk premium method and the second is called the ex ante risk premium method.

a) Ex Post Risk Premium

Q 121 Please describe your ex post risk premium method for measuring the required risk premium on an equity investment.

A 121 My ex post risk premium method measures the required risk premium on an equity investment in Newfoundland Power from historical data on the returns experienced by investors in Canadian utility stocks compared to investors in long-term Canada bonds.

Q 122 How do you measure the returns experienced by investors in Canadian utility stocks?

A 122 I measure the returns experienced by investors in Canadian utility stocks from historical data on returns earned by investors in: (1) the S&P/TSX utilities stock index; and (2) a basket of Canadian utility stocks created by the BMO CM.

Q 123 Does your ex post risk premium cost of equity study use the same investor experienced return data that you discussed above when you described your tests of the reasonableness of the results of the ROE Formula?

A 123 Yes, it does.

Q 124 How do you measure the forecast bond yield for your ex post risk premium studies?

A 124 I measure the forecast bond yield from information on the forecast yield on long-term Canada bonds as reported by Consensus Economics.

Q 125 What average risk premium results do you obtain from your analysis of returns experienced by investors in Canadian utility stocks?

A 125 As shown above in Table 1 and duplicated in Table 4 below, I obtain an average experienced risk premium equal to 6.7 percent (the annual data that produce these results are shown in Exhibit 1 and Exhibit 2).

TABLE 4
EX POST RISK PREMIUM RESULTS

COMPARABLE GROUP	PERIOD OF STUDY	AVERAGE STOCK RETURN	AVERAGE BOND YIELD	RISK PREMIUM
S&P/TSX Utilities	1956 – 2011	11.99	7.33	4.7
BMO CM Utilities Stock Data Set	1983 – 2011	16.01	7.24	8.8
Average				6.7

Q 126 What conclusions do you draw from your ex post risk premium analyses about your comparable companies' cost of equity?

A 126 My studies provide evidence that investors in these companies require an equity return equal to at least 6.7 percentage points above the interest

rate on long-term Canada bonds. The Consensus Economics forecast interest rate on long-term Canada bonds for 2012 as of November 2011 is 3.06 percent. Adding a 6.7 percentage point risk premium to an expected yield of 3.06 percent on long-term Canada bonds and including a fifty-basis point allowance for flotation costs and financial flexibility produces an expected return on equity equal to 10.3 percent from my ex post risk premium studies.

b) Ex Ante Risk Premium Method

Q 127 Please describe your ex ante risk premium approach for measuring the required risk premium on an equity investment in Newfoundland Power.

A 127 My ex ante risk premium method is based on studies of the expected return on a comparable group of electric utilities in each month of my study period compared to the interest rate on long-term government bonds.

Q 128 Does your ex ante risk premium cost of equity study use the same forward looking, or ex ante, risk premium data that you discussed above when you described your analysis of the sensitivity of the forward looking required equity risk premium on utility stocks to changes in interest rates?

A 128 Yes, it does.

Q 129 What risk premium estimate do you obtain from your ex ante risk premium studies?

A 129 I obtain an ex ante risk premium estimate equal to 7.67 percent.

Q 130 What cost of equity result do you obtain from your ex ante risk premium studies?

A 130 As described above, in the ex ante risk premium approach, one must add the expected interest rate on long-term government bonds to the estimated risk premium to calculate the cost of equity. Since Newfoundland Power is a Canadian utility, I estimate the expected yield on long-term government bonds using the forecast interest rate on long-term Canada bonds, 3.06 percent. Adding this 3.06 percent interest rate to my 7.67 percent ex ante risk premium estimate, I obtain a cost of equity estimate equal to 10.7 percent (3.06 + 7.67 = 10.73). A more

detailed description of my ex ante risk premium approach and results is described in Exhibit 7 and Exhibit 20, Appendix 3. (As discussed in Exhibit 20, Appendix 3, my ex ante risk premium studies include an allowance for financial flexibility approximately equal to twenty-five basis points.)

2. Discounted Cash Flow Model

Q 131 How do you use the DCF model to estimate the cost of equity on an investment in your comparable risk companies?

A 131 I apply the DCF model to the Value Line electric and natural gas utilities shown in Exhibit 14 and Exhibit 15.

Q 132 How do you select your comparable groups of Value Line utilities?

A 132 I select all the Value Line electric and natural gas utilities that: (1) pay dividends during every quarter and did not decrease dividends during any quarter of the past two years; (2) have at least two I/B/E/S growth forecasts; (3) are not in the process of being acquired; (4) have a Value Line Safety Rank of 1, 2, or 3; and (5) have an investment grade bond rating.

Q 133 Why do you eliminate companies that have either decreased or eliminated their dividend during the past two years?

A 133 The DCF model requires the assumption that dividends will grow at a constant positive rate into the indefinite future. If a company has decreased its dividend in recent years, an assumption that the company's dividend will grow at the same positive rate into the indefinite future is questionable.

Q 134 Why do you eliminate companies that have fewer than two analysts' estimates included in the I/B/E/S mean forecast?

A 134 The DCF model also requires a reliable estimate of a company's expected future growth. For most companies, the I/B/E/S mean growth forecast is the best available estimate of the growth term in the DCF Model. However, the I/B/E/S estimate may be less reliable if the mean estimate is based on the input of only one analyst. On the basis of my

professional judgment, I believe that at least two analysts' estimates are a reasonable minimum number.

Q 135 Why do you eliminate companies that are in the process of being acquired?

A 135 I eliminate companies that are in the process of being acquired because a merger announcement generally increases the target company's stock price, but not the acquiring company's stock price. Analysts' growth forecasts for the target company, on the other hand, are necessarily related to the company as it currently exists. The use of a stock price that includes the growth-enhancing prospects of potential mergers in conjunction with growth forecasts that do not include the growth-enhancing prospects of potential mergers produces DCF results that tend to distort a company's cost of equity.

Q 136 Please summarize the results of your application of the DCF model to your comparable groups of companies.

A 136 My application of the DCF model to my comparable group of electric utilities produces a result of 10.1 percent without an allowance for financial flexibility and 10.6 percent including a fifty-basis-point allowance for financial flexibility; and to my comparable group of natural gas utilities, a result of 9.4 percent without a financial flexibility allowance and 9.9 percent including a fifty-basis-point allowance for financial flexibility(see Exhibit 14 and Exhibit 15). The average DCF result including a fifty-basis-point allowance for financial flexibility for my two comparable groups is 10.3 percent.

Q 137 Based on your application of the equity risk premium and DCF methods to your comparable risk companies, what is your conclusion regarding your comparable risk companies' cost of equity?

A 137 I conservatively conclude that my comparable companies' cost of equity is 10.4 percent. As shown below in Table 5, 10.4 percent is the simple average of the cost of equity results I obtain from my cost of equity models.

TABLE 5
SUMMARY OF COST OF EQUITY RESULTS

METHOD	COST OF EQUITY
Ex Post Risk Premium	10.3
Ex Ante Risk Premium	10.7
Discounted Cash Flow	10.3
Average	10.4

VII. Comparable Risk Utilities Have Higher Allowed Equity Ratios than Newfoundland Power.

Q 138 What common equity ratio did the Board approve for Newfoundland Power in its most recent cost of capital order?

A 138 The Board approved a 45 percent equity ratio for Newfoundland Power.

Q 139 How does the approved equity ratio for Newfoundland Power compare to approved equity ratios for U.S. utilities?

A 139 As noted above and as shown in Exhibit 5 and Exhibit 6, the average approved equity ratio for U.S. electric and natural gas utilities during the period 2009 through 2011 is 49 percent. Thus, the average approved equity ratio for U.S. utilities is higher than the approved equity ratio for Newfoundland Power.

Q 140 How does the approved equity ratio for Newfoundland Power compare to market value equity ratios for electric and natural gas utilities in your U.S. utility groups?

A 140 The average market value equity ratio for the electric utilities is approximately 59 percent, and, for natural gas utilities, 67 percent (see Exhibit 16 and Exhibit 17).

Q 141 Why do you present evidence on market value equity ratios for U.S. utilities as well as book value equity ratios?

A 141 I present evidence on market value equity ratios as well as book value equity ratios because financial risk depends on the market value percentages of debt and equity in a company's capital structure rather than on the book value percentages of debt and equity in the company's capital structure.

Q 142 How does the business risk of Newfoundland Power compare to the average business risk of U.S. electric and natural gas utilities?

A 142 As discussed above, the business risk of Newfoundland Power is approximately equal to the average business risk of U.S. electric and natural gas utilities.

Q 143 How does the financial risk of Newfoundland Power compare to the average financial risk of U.S. electric and natural gas utilities?

A 143 Since Newfoundland Power has an allowed equity ratio of 45 percent, and the U.S. electric and natural gas utilities have average allowed equity ratios of 49 percent, the financial risk of U.S. electric and natural gas utilities is less than the financial risk of Newfoundland Power. This conclusion is further supported by the observation that the average market value equity ratio for U.S. electric utilities is approximately 59 percent, and for natural gas utilities, 67 percent. This observation is important because financial risk is best measured using market value equity ratios rather than book value equity ratios.

VIII. Summary and Recommendations

Q 144 Please summarize your written evidence in this proceeding.

A 144 My written evidence may be summarized as follows:

1. Experienced equity risk premiums on investments in Canadian utility stocks average 6.7 percent, whereas the ROE Formula implies an equity risk premium of only 4.79 percent.
2. U.S. utilities' cost of equity data provide important information on the cost of equity for Newfoundland Power.
3. The U.S. utilities included in my studies are more involved in traditional utility operations than most of the companies included in the Canadian utilities indices.
4. The sample of U.S. regulated utilities is larger than the sample of Canadian regulated utilities, and the data required to estimate the cost of equity are more readily available for the U.S. utilities than for the Canadian utilities.

5. Recent average allowed returns on equity for U.S. utilities are in the range 10.0 percent to 10.4 percent, whereas the ROE Formula implies an ROE equal to 7.85 percent based on capital market data at November 2011.
6. The forward-looking required ROE on utility stocks is less sensitive to changes in government bond yields than is implied by the ROE Formula.
7. The allowed ROE for U.S. utilities is less sensitive to changes in government bond yields than is implied by the ROE Formula.
8. The risk of investing in Canadian utility stocks is higher relative to the Canadian stock market as a whole than is implied by the ROE Formula.
9. The cost of equity for investments in comparable risk utilities is 10.4 percent based on ex post risk premium, ex ante risk premium, and discounted cash flow studies.
10. Allowed equity ratios for U.S. utilities are approximately 49 percent, whereas the allowed equity ratio for Newfoundland Power is 45 percent.
11. The business risk of Newfoundland Power is approximately equal to the average business risk of my groups of Canadian and U.S. utilities.
12. The average financial risk of Newfoundland Power is slightly less than the average financial risk of regulated Canadian utilities and slightly greater than the average financial risk of my U.S. utility groups.

Q 145 What conclusion do you reach from this evidence?

A 145 I conclude that: (1) the Board should suspend its ROE Formula for Newfoundland Power; (2) the Board should examine cost of equity evidence based on proxy groups of U.S. utilities as well as Canadian utilities; and (3) Newfoundland Power should be allowed to earn a rate of return on equity equal to 10.4 percent.

Q 146 Does this conclude your written evidence?

A 146 Yes, it does.

EXHIBIT 1
EXPERIENCED RISK PREMIUMS ON
S&P/TSX CANADIAN UTILITIES STOCK INDEX
1956—2011

LINE NO.	YEAR	S&P/TSX CANADIAN UTILITIES STOCK INDEX TOTAL RETURN	YIELD LONG-TERM CANADA BOND	RISK PREMIUM
1	1956	0.17	3.63	-3.45
2	1957	-3.43	4.11	-7.54
3	1958	9.81	4.15	5.66
4	1959	0.21	5.08	-4.86
5	1960	26.81	5.19	21.62
6	1961	19.17	5.05	14.12
7	1962	-0.72	5.11	-5.83
8	1963	6.19	5.09	1.10
9	1964	21.59	5.18	16.41
10	1965	4.23	5.21	-0.98
11	1966	-13.17	5.69	-18.86
12	1967	5.07	5.94	-0.87
13	1968	7.41	6.75	0.66
14	1969	-8.62	7.58	-16.20
15	1970	23.34	7.91	15.43
16	1971	4.29	6.95	-2.66
17	1972	-0.44	7.23	-7.68
18	1973	-4.14	7.56	-11.70
19	1974	14.38	8.90	5.48
20	1975	5.75	9.04	-3.28
21	1976	15.02	9.18	5.84
22	1977	19.00	8.70	10.30
23	1978	27.28	9.27	18.01
24	1979	12.61	10.21	2.40
25	1980	5.74	12.48	-6.74
26	1981	-0.55	15.22	-15.77
27	1982	35.90	14.26	21.65
28	1983	40.97	11.79	29.17
29	1984	24.31	12.75	11.56
30	1985	10.04	11.04	-1.00
31	1986	11.48	9.52	1.96
32	1987	1.07	9.95	-8.88
33	1988	5.63	10.22	-4.59
34	1989	22.07	9.92	12.15
35	1990	0.58	10.85	-10.28

LINE NO.	YEAR	S&P/TSX CANADIAN UTILITIES STOCK INDEX TOTAL RETURN	YIELD LONG-TERM CANADA BOND	RISK PREMIUM
36	1991	27.02	9.76	17.25
37	1992	-2.24	8.77	-11.00
38	1993	23.52	7.85	15.67
39	1994	-6.04	8.63	-14.68
40	1995	18.44	8.28	10.16
41	1996	32.68	7.50	25.18
42	1997	37.33	6.42	30.91
43	1998	36.55	5.47	31.09
44	1999	-27.14	5.69	-32.83
45	2000	50.06	5.89	44.17
46	2001	10.83	5.78	5.05
47	2002	6.33	5.66	0.67
48	2003	24.94	5.28	19.66
49	2004	9.42	5.08	4.34
50	2005	38.29	4.39	33.90
51	2006	7.01	4.30	2.71
52	2007	11.89	4.34	7.55
53	2008	-20.46	4.04	-24.50
54	2009	19.00	3.89	15.11
55	2010	18.39	3.66	14.73
56	2011	6.47	3.21	3.26
57	Average	11.99	7.33	4.66

EXHIBIT 2
EXPERIENCED RISK PREMIUMS ON BMO CAPITAL MARKETS UTILITIES STOCK DATA SET
1983—2011

LINE NO.	YEAR	BMO CAPITAL MARKETS UTILITIES & PIPELINE TOTAL RETURN	YIELD LONG-TERM CANADA BOND	RISK PREMIUM
1	1983	25.84	11.79	14.05
2	1984	6.89	12.75	-5.86
3	1985	20.09	11.04	9.04
4	1986	-1.22	9.52	-10.74
5	1987	11.98	9.95	2.03
6	1988	6.67	10.22	-3.56
7	1989	23.80	9.92	13.88
8	1990	10.00	10.85	-0.86
9	1991	12.92	9.76	3.16
10	1992	0.75	8.77	-8.02
11	1993	33.00	7.85	25.15
12	1994	-1.22	8.63	-9.85
13	1995	15.13	8.28	6.85
14	1996	31.66	7.50	24.15
15	1997	50.16	6.42	43.74
16	1998	4.12	5.47	-1.34
17	1999	-24.11	5.69	-29.80
18	2000	59.57	5.89	53.69
19	2001	16.05	5.78	10.27
20	2002	14.46	5.66	8.80
21	2003	28.74	5.28	23.46
22	2004	15.56	5.08	10.48
23	2005	33.36	4.39	28.97
24	2006	17.77	4.30	13.47
25	2007	4.90	4.34	0.57
26	2008	-4.21	4.04	-8.25
27	2009	20.24	3.89	16.35
28	2010	5.39	3.66	1.73
29	2011	25.89	3.21	22.68
30	Average	16.01	7.24	8.77

EXHIBIT 3
ALLOWED RETURNS ON EQUITY
U.S. ELECTRIC UTILITIES
2009 – 2011[3]

LINE NO.	COMPANY	STATE	ORDER DATE	ALLOWED ROE
1	Nevada Power Co.	Nevada	23-Dec-11	10.19
2	Northern States Power Co – WI	Wisconsin	22-Dec-11	10.40
3	Black Hills Colorado Electric	Colorado	22-Dec-11	9.90
4	Northern IN Public Svc Co.	Indiana	21-Dec-11	10.20
5	Upper Peninsula Power Co.	Michigan	20-Dec-11	10.20
6	Columbus Southern Power Co.	Ohio	14-Dec-11	10.00
7	Ohio Power Co.	Ohio	14-Dec-11	10.30
8	Appalachian Power Co.	Virginia	30-Nov-11	10.90
9	Detroit Edison Co.	Michigan	20-Oct-11	10.50
10	Kentucky Utilities Co.	Virginia	12-Oct-11	10.30
11	South Carolina Electric & Gas	South Carolina	30-Sep-11	11.00
12	PacifiCorp	Wyoming	22-Sep-11	10.00
13	Oncor Electric Delivery Co.	Texas	19-Aug-11	10.25
14	Interstate Power & Light Co.	Minnesota	12-Aug-11	10.35
15	PacifiCorp	Utah	11-Aug-11	10.00
16	Public Service Co. of NM	New Mexico	8-Aug-11	10.00
17	Fitchburg Gas & Electric Light	Massachusetts	1-Aug-11	9.20
18	Union Electric Co.	Missouri	13-Jul-11	10.20
19	Oklahoma Gas and Electric Co.	Arkansas	17-Jun-11	9.95
20	Orange & Rockland Utlts Inc.	New York	16-Jun-11	9.20
21	MDU Resources Group Inc.	North Dakota	8-Jun-11	10.75
22	Commonwealth Edison Co.	Illinois	24-May-11	10.50
23	Pacific Gas and Electric Co.	California	13-May-11	11.35
24	KCP&L Greater Missouri Op Co	Missouri	4-May-11	10.00
25	KCP&L Greater Missouri Op Co	Missouri	4-May-11	10.00
26	Southern Indiana Gas & Elec Co	Indiana	27-Apr-11	10.40
27	Unitil Energy Systems Inc.	New Hampshire	26-Apr-11	9.67
28	Otter Tail Power Co.	Minnesota	25-Apr-11	10.74
29	Kansas City Power & Light	Missouri	12-Apr-11	10.00
30	Appalachian Power Co.	West Virginia	30-Mar-11	10.00
31	PacifiCorp	Washington	25-Mar-11	9.80
32	Virginia Electric & Power Co.	Virginia	22-Mar-11	12.30
33	Virginia Electric & Power Co.	Virginia	22-Mar-11	12.30
34	Hawaiian Electric Co.	Hawaii	25-Feb-11	10.00
35	CenterPoint Energy Houston	Texas	3-Feb-11	10.00
36	Western Massachusetts Electric	Massachusetts	31-Jan-11	9.60
37	Niagara Mohawk Power Corp.	New York	20-Jan-11	9.30
38	Texas-New Mexico Power Co.	Texas	20-Jan-11	10.13
39	Delmarva Power & Light Co.	Delaware	18-Jan-11	10.00

[3] Data from Regulatory Research Associates, SNL Financial, February 17, 2012.

LINE NO.	COMPANY	STATE	ORDER DATE	ALLOWED ROE
40	Wisconsin Public Service Corp.	Wisconsin	13-Jan-11	10.30
41	Madison Gas and Electric Co.	Wisconsin	12-Jan-11	10.30
42	Public Service Co. of OK	Oklahoma	5-Jan-11	10.15
43	Georgia Power Co.	Georgia	29-Dec-10	11.15
44	PacifiCorp	Idaho	27-Dec-10	9.90
45	Upper Peninsula Power Co.	Michigan	21-Dec-10	10.30
46	Sierra Pacific Power Co.	Nevada	20-Dec-10	10.60
47	Portland General Electric Co.	Oregon	17-Dec-10	10.00
48	Interstate Power & Light Co.	Iowa	15-Dec-10	10.44
49	PacifiCorp	Oregon	14-Dec-10	10.13
50	Virginia Electric & Power Co.	North Carolina	13-Dec-10	10.70
51	NorthWestern Energy Division	Montana	9-Dec-10	10.25
52	Baltimore Gas and Electric Co.	Maryland	6-Dec-10	9.86
53	Entergy Texas Inc.	Texas	1-Dec-10	10.13
54	Kansas City Power & Light	Kansas	22-Nov-10	10.00
55	Avista Corp.	Washington	19-Nov-10	10.20
56	Consumers Energy Co.	Michigan	4-Nov-10	10.70
57	ALLETE (Minnesota Power)	Minnesota	2-Nov-10	10.38
58	Hawaii Electric Light Co	Hawaii	28-Oct-10	10.70
59	Indiana Michigan Power Co.	Michigan	14-Oct-10	10.35
60	UNS Electric Inc.	Arizona	30-Sep-10	9.75
61	South Carolina Electric & Gas	South Carolina	30-Sep-10	11.00
62	NY State Electric & Gas Corp.	New York	16-Sep-10	10.00
63	Rochester Gas & Electric Corp.	New York	16-Sep-10	10.00
64	Hawaiian Electric Co.	Hawaii	14-Sep-10	10.70
65	PacifiCorp	California	3-Sep-10	10.60
66	Northern IN Public Svc Co.	Indiana	25-Aug-10	9.90
67	Potomac Electric Power Co.	Maryland	6-Aug-10	9.83
68	Black Hills Colorado Electric	Colorado	4-Aug-10	10.50
69	Maui Electric Company Ltd	Hawaii	30-Jul-10	10.70
70	Appalachian Power Co.	Virginia	15-Jul-10	10.53
71	South Carolina Electric & Gas	South Carolina	15-Jul-10	10.70
72	Wisconsin Electric Power Co.	Michigan	1-Jul-10	10.25
73	Connecticut Light & Power Co.	Connecticut	30-Jun-10	9.40
74	Public Service Co. of NH	New Hampshire	28-Jun-10	9.67
75	Kentucky Power Co.	Kentucky	28-Jun-10	10.50
76	Central Hudson Gas & Electric	New York	16-Jun-10	10.00
77	Public Service Electric Gas	New Jersey	7-Jun-10	10.30
78	Entergy Arkansas Inc.	Arkansas	28-May-10	10.20
79	Union Electric Co.	Missouri	28-May-10	10.10
80	Rockland Electric Company	New Jersey	12-May-10	10.30
81	Atlantic City Electric Co.	New Jersey	12-May-10	10.30
82	Ameren Illinois	Illinois	29-Apr-10	10.06
83	Ameren Illinois	Illinois	29-Apr-10	9.90
84	Ameren Illinois	Illinois	29-Apr-10	10.26
85	MDU Resources Group Inc.	Wyoming	27-Apr-10	10.00

LINE NO.	COMPANY	STATE	ORDER DATE	ALLOWED ROE
86	Puget Sound Energy Inc.	Washington	2-Apr-10	10.10
87	Consolidated Edison Co. of NY	New York	25-Mar-10	10.15
88	Florida Power & Light Co.	Florida	17-Mar-10	10.00
89	Virginia Electric & Power Co.	Virginia	11-Mar-10	12.30
90	Virginia Electric & Power Co.	Virginia	11-Mar-10	12.30
91	Virginia Electric & Power Co.	Virginia	11-Mar-10	11.90
92	Florida Power Corp.	Florida	5-Mar-10	10.50
93	Kentucky Utilities Co.	Virginia	4-Mar-10	10.50
94	Potomac Electric Power Co.	District of Columbia	2-Mar-10	9.63
95	Idaho Power Co.	Oregon	24-Feb-10	10.18
96	PacifiCorp	Utah	18-Feb-10	10.60
97	Narragansett Electric Co.	Rhode Island	9-Feb-10	9.80
98	Duke Energy Carolinas LLC	South Carolina	27-Jan-10	10.70
99	Kansas Gas and Electric Co.	Kansas	27-Jan-10	10.40
100	Westar Energy Inc.	Kansas	27-Jan-10	10.40
101	PacifiCorp	Oregon	26-Jan-10	10.13
102	Detroit Edison Co.	Michigan	11-Jan-10	11.00
103	Interstate Power & Light Co.	Iowa	4-Jan-10	10.80
104	Delmarva Power & Light Co.	Maryland	30-Dec-09	10.00
105	Avista Corp.	Washington	22-Dec-09	10.20
106	Madison Gas and Electric Co.	Wisconsin	22-Dec-09	10.40
107	Northern States Power Co - WI	Wisconsin	22-Dec-09	10.40
108	Wisconsin Electric Power Co.	Wisconsin	18-Dec-09	10.40
109	Wisconsin Power and Light Co	Wisconsin	18-Dec-09	10.40
110	Upper Peninsula Power Co.	Michigan	16-Dec-09	10.90
111	Arizona Public Service Co.	Arizona	16-Dec-09	11.00
112	Duke Energy Carolinas LLC	North Carolina	7-Dec-09	10.70
113	Public Service Co. of CO	Colorado	3-Dec-09	10.50
114	Massachusetts Electric Co.	Massachusetts	30-Nov-09	10.35
115	Otter Tail Power Co.	North Dakota	25-Nov-09	10.75
116	Southwestern Electric Power Co	Arkansas	24-Nov-09	10.25
117	Sierra Pacific Power Co.	California	3-Nov-09	10.70
118	Consumers Energy Co.	Michigan	2-Nov-09	10.70
119	Northern States Power Co. - MN	Minnesota	23-Oct-09	10.88
120	Cleco Power LLC	Louisiana	14-Oct-09	10.70
121	Oncor Electric Delivery Co.	Texas	31-Aug-09	10.25
122	Avista Corp.	Idaho	17-Jul-09	10.50
123	Duke Energy Ohio Inc.	Ohio	8-Jul-09	10.63
124	Nevada Power Co.	Nevada	24-Jun-09	10.80
125	Central Hudson Gas & Electric	New York	22-Jun-09	10.00
126	Idaho Power Co.	Idaho	29-May-09	10.50
127	Public Service Co. of NM	New Mexico	28-May-09	10.50
128	Oklahoma Gas and Electric Co.	Arkansas	20-May-09	10.25
129	ALLETE (Minnesota Power)	Minnesota	4-May-09	10.74
130	Tampa Electric Co.	Florida	30-Apr-09	11.25
131	Consolidated Edison Co. of NY	New York	24-Apr-09	10.00

LINE NO.	COMPANY	STATE	ORDER DATE	ALLOWED ROE
132	PacifiCorp	Utah	21-Apr-09	10.61
133	Entergy New Orleans Inc.	Louisiana	2-Apr-09	11.10
134	Southern California Edison Co.	California	12-Mar-09	11.50
135	Indiana Michigan Power Co.	Indiana	4-Mar-09	10.50
136	United Illuminating Co.	Connecticut	4-Feb-09	8.75
137	Idaho Power Co.	Idaho	30-Jan-09	10.50
138	Union Electric Co.	Missouri	27-Jan-09	10.76
139	Cleveland Elec Illuminating Co	Ohio	21-Jan-09	10.50
140	Ohio Edison Co.	Ohio	21-Jan-09	10.50
141	Toledo Edison Co.	Ohio	21-Jan-09	10.50
142	Appalachian Power Co.	Virginia	14-Jan-09	10.60
143	Public Service Co. of OK	Oklahoma	14-Jan-09	10.50
144	Average 2009	Average 2009		10.5
145	Average 2010	Average 2010		10.4
146	Average 2011	Average 2011		10.3
147	Average 2009 - 2011	Average 2009 – 2011		10.4

EXHIBIT 4
ALLOWED RETURNS ON EQUITY
U.S. NATURAL GAS UTILITIES
2009 – 2011[4]

LINE NO.	COMPANY	STATE	ORDER DATE	ALLOWED ROE
1	Northern States Power Co - WI	Wisconsin	22-Dec-11	10.40
2	Virginia Natural Gas Inc.	Virginia	20-Dec-11	10.00
3	Southwest Gas Corp.	Arizona	13-Dec-11	9.50
4	Washington Gas Light Co.	Maryland	14-Nov-11	9.60
5	Public Service Co. of CO	Colorado	1-Sep-11	10.10
6	Fitchburg Gas & Electric Light	Massachusetts	1-Aug-11	9.20
7	Yankee Gas Services Co.	Connecticut	29-Jun-11	8.83
8	Delmarva Power & Light Co.	Delaware	21-Jun-11	10.00
9	Consumers Energy Co.	Michigan	26-May-11	10.50
10	Pacific Gas and Electric Co.	California	13-May-11	11.35
11	Washington Gas Light Co.	Virginia	21-Apr-11	10.00
12	CenterPoint Energy Resources	Texas	18-Apr-11	10.05
13	New England Gas Company	Massachusetts	31-Mar-11	9.45
14	Avista Corp.	Oregon	10-Mar-11	10.10
15	Wisconsin Public Service Corp.	Wisconsin	13-Jan-11	10.30
16	Madison Gas and Electric Co.	Wisconsin	12-Jan-11	10.30
17	SEMCO Energy Inc.	Michigan	6-Jan-11	10.35
18	SourceGas Distribution LLC	Wyoming	23-Dec-10	9.92
19	Sierra Pacific Power Co.	Nevada	20-Dec-10	10.10
20	Columbia Gas of Virginia Inc	Virginia	17-Dec-10	10.10
21	Texas Gas Service Co.	Texas	14-Dec-10	10.33
22	NorthWestern Energy Division	Montana	9-Dec-10	10.25
23	Baltimore Gas and Electric Co.	Maryland	6-Dec-10	9.56
24	Northern States Power Co. - MN	Minnesota	6-Dec-10	10.09
25	SourceGas Distribution LLC	Colorado	1-Dec-10	10.00
26	Avista Corp.	Washington	19-Nov-10	10.20
27	Atlanta Gas Light Co.	Georgia	3-Nov-10	10.75
28	Boston Gas Co.	Massachusetts	2-Nov-10	9.75
29	Colonial Gas Co.	Massachusetts	2-Nov-10	9.75
30	Delta Natural Gas Co.	Kentucky	21-Oct-10	10.40
31	South Jersey Gas Co.	New Jersey	16-Sep-10	10.30
32	Consolidated Edison Co. of NY	New York	16-Sep-10	9.60
33	NY State Electric & Gas Corp.	New York	16-Sep-10	10.00
34	Rochester Gas & Electric Corp.	New York	16-Sep-10	10.00
35	Black Hills Nebraska Gas	Nebraska	17-Aug-10	10.10
36	Public Service Electric Gas	New Jersey	18-Jun-10	10.30
37	Central Hudson Gas & Electric	New York	16-Jun-10	10.00
38	Michigan Consolidated Gas Co.	Michigan	3-Jun-10	11.00
39	Chattanooga Gas Company	Tennessee	24-May-10	10.05

[4] Data from Regulatory Research Associates, SNL Financial, February 17, 2012.

LINE NO.	COMPANY	STATE	ORDER DATE	ALLOWED ROE
40	Consumers Energy Co.	Michigan	17-May-10	10.55
41	Ameren Illinois	Illinois	29-Apr-10	9.40
42	Ameren Illinois	Illinois	29-Apr-10	9.19
43	Ameren Illinois	Illinois	29-Apr-10	9.40
44	Questar Gas Co.	Utah	8-Apr-10	10.35
45	Puget Sound Energy Inc.	Washington	2-Apr-10	10.10
46	UNS Gas Inc.	Arizona	1-Apr-10	9.50
47	Atmos Energy Corp.	Georgia	31-Mar-10	10.70
48	MidAmerican Energy Co.	Illinois	24-Mar-10	10.13
49	SourceGas Distribution LLC	Nebraska	9-Mar-10	9.60
50	CenterPoint Energy Resources	Texas	23-Feb-10	10.50
51	Missouri Gas Energy	Missouri	10-Feb-10	10.00
52	Atmos Energy Corp.	Texas	26-Jan-10	10.40
53	North Shore Gas Co.	Illinois	21-Jan-10	10.33
54	Peoples Gas Light & Coke Co.	Illinois	21-Jan-10	10.23
55	CenterPoint Energy Resources	Minnesota	11-Jan-10	10.24
56	Duke Energy Kentucky Inc.	Kentucky	29-Dec-09	10.38
57	Avista Corp.	Washington	22-Dec-09	10.20
58	Madison Gas and Electric Co.	Wisconsin	22-Dec-09	10.40
59	Wisconsin Electric Power Co.	Wisconsin	18-Dec-09	10.40
60	Wisconsin Gas LLC	Wisconsin	18-Dec-09	10.50
61	Wisconsin Power and Light Co	Wisconsin	18-Dec-09	10.40
62	Pivotal Utility Holdings Inc.	New Jersey	17-Dec-09	10.30
63	Michigan Gas Utilities Corp	Michigan	16-Dec-09	10.75
64	ONEOK Inc.	Oklahoma	14-Dec-09	10.50
65	Hope Gas Inc	West Virginia	20-Nov-09	9.45
66	Columbia Gas of Massachusetts	Massachusetts	30-Oct-09	9.95
67	Southwest Gas Corp.	Nevada	28-Oct-09	10.15
68	Southwest Gas Corp.	Nevada	28-Oct-09	10.15
69	Avista Corp.	Oregon	26-Oct-09	10.10
70	Orange & Rockland Utlts Inc.	New York	16-Oct-09	10.40
71	Southern Connecticut Gas Co.	Connecticut	17-Jul-09	9.26
72	Avista Corp.	Idaho	17-Jul-09	10.50
73	CT Natural Gas Corp.	Connecticut	30-Jun-09	9.31
74	Minnesota Energy Resources	Minnesota	29-Jun-09	10.21
75	Central Hudson Gas & Electric	New York	22-Jun-09	10.00
76	Black Hills Iowa Gas Utility	Iowa	3-Jun-09	10.10
77	EnergyNorth Natural Gas Inc.	New Hampshire	29-May-09	9.54
78	Florida Public Utilities Co.	Florida	27-May-09	10.85
79	Niagara Mohawk Power Corp.	New York	15-May-09	10.20
80	Peoples Gas System	Florida	5-May-09	10.75
81	Entergy New Orleans Inc.	Louisiana	2-Apr-09	10.75
82	Northern Illinois Gas Co.	Illinois	25-Mar-09	10.17
83	Atmos Energy Corp.	Tennessee	9-Mar-09	10.30
84	New England Gas Company	Massachusetts	2-Feb-09	10.05
85	Michigan Gas Utilities Corp	Michigan	13-Jan-09	10.45

LINE NO.	COMPANY	STATE	ORDER DATE	ALLOWED ROE
86	Average 2009			10.2
87	Average 2010			10.1
88	Average 2011			10.0
89	Average 2009 – 2011			10.1

EXHIBIT 5
ALLOWED EQUITY RATIOS
U.S. ELECTRIC UTILITIES
2009 – 2011[5]

LINE NO.	COMPANY	STATE	ORDER DATE	EQUITY RATIO(%)
1	Nevada Power Co.	Nevada	23-Dec-11	44.38
2	Black Hills Colorado Electric	Colorado	22-Dec-11	49.10
3	Northern States Power Co - WI	Wisconsin	22-Dec-11	52.59
4	Northern IN Public Svc Co.	Indiana	21-Dec-11	46.53
5	Upper Peninsula Power Co.	Michigan	20-Dec-11	45.74
6	Columbus Southern Power Co.	Ohio	14-Dec-11	50.64
7	Ohio Power Co.	Ohio	14-Dec-11	53.79
8	Appalachian Power Co.	Virginia	30-Nov-11	42.69
9	Kentucky Utilities Co.	Virginia	12-Oct-11	53.37
10	South Carolina Electric & Gas	South Carolina	30-Sep-11	54.67
11	PacifiCorp	Wyoming	22-Sep-11	52.30
12	Oncor Electric Delivery Co.	Texas	19-Aug-11	40.00
13	Interstate Power & Light Co.	Minnesota	12-Aug-11	47.74
14	PacifiCorp	Utah	11-Aug-11	51.90
15	Public Service Co. of NM	New Mexico	8-Aug-11	51.28
16	Fitchburg Gas & Electric Light	Massachusetts	1-Aug-11	42.88
17	Union Electric Co.	Missouri	13-Jul-11	52.24
18	Orange & Rockland Utlts Inc.	New York	16-Jun-11	48.00
19	MDU Resources Group Inc.	North Dakota	8-Jun-11	53.34
20	Commonwealth Edison Co.	Illinois	24-May-11	47.28
21	Pacific Gas and Electric Co.	California	13-May-11	52.00
22	KCP&L Greater Missouri Op Co	Missouri	4-May-11	46.58
23	KCP&L Greater Missouri Op Co	Missouri	4-May-11	46.58
24	Southern Indiana Gas & Elec Co	Indiana	27-Apr-11	43.46
25	Unitil Energy Systems Inc.	New Hampshire	26-Apr-11	45.45
26	Otter Tail Power Co.	Minnesota	25-Apr-11	51.70
27	Kansas City Power & Light	Missouri	12-Apr-11	46.30
28	Appalachian Power Co.	West Virginia	30-Mar-11	42.20
29	PacifiCorp	Washington	25-Mar-11	49.10
30	Virginia Electric & Power Co.	Virginia	22-Mar-11	49.37
31	Virginia Electric & Power Co.	Virginia	22-Mar-11	49.37
32	Hawaiian Electric Co.	Hawaii	25-Feb-11	55.81
33	CenterPoint Energy Houston	Texas	3-Feb-11	45.00
34	Western Massachusetts Electric	Massachusetts	31-Jan-11	50.70
35	Niagara Mohawk Power Corp.	New York	20-Jan-11	48.00
36	Texas-New Mexico Power Co.	Texas	20-Jan-11	45.00
37	Delmarva Power & Light Co.	Delaware	18-Jan-11	47.52
38	Wisconsin Public Service Corp.	Wisconsin	13-Jan-11	51.65
39	Madison Gas and Electric Co.	Wisconsin	12-Jan-11	58.06

[5] Data from Regulatory Research Associates, SNL Financial, February 17, 2012.

LINE NO.	COMPANY	STATE	ORDER DATE	EQUITY RATIO(%)
40	Public Service Co. of OK	Oklahoma	5-Jan-11	45.84
41	PacifiCorp	Idaho	27-Dec-10	52.10
42	Upper Peninsula Power Co.	Michigan	21-Dec-10	50.42
43	Sierra Pacific Power Co.	Nevada	20-Dec-10	44.11
44	Portland General Electric Co.	Oregon	17-Dec-10	50.00
45	Kansas City Power & Light	Kansas	22-Nov-10	49.66
46	Avista Corp.	Washington	19-Nov-10	46.50
47	Consumers Energy Co.	Michigan	4-Nov-10	41.59
53	ALLETE (Minnesota Power)	Minnesota	2-Nov-10	54.29
54	Hawaii Electric Light Co	Hawaii	28-Oct-10	51.19
55	Indiana Michigan Power Co.	Michigan	14-Oct-10	44.14
56	UNS Electric Inc.	Arizona	30-Sep-10	45.76
57	South Carolina Electric & Gas	South Carolina	30-Sep-10	53.52
58	NY State Electric & Gas Corp.	New York	16-Sep-10	48.00
59	Rochester Gas & Electric Corp.	New York	16-Sep-10	48.00
60	Hawaiian Electric Co.	Hawaii	14-Sep-10	55.10
61	PacifiCorp	California	3-Sep-10	52.20
62	Northern IN Public Svc Co.	Indiana	25-Aug-10	49.95
63	Potomac Electric Power Co.	Maryland	6-Aug-10	48.87
64	Black Hills Colorado Electric	Colorado	4-Aug-10	52.00
65	Maui Electric Company Ltd	Hawaii	30-Jul-10	54.89
66	South Carolina Electric & Gas	South Carolina	15-Jul-10	52.96
67	Appalachian Power Co.	Virginia	15-Jul-10	41.53
68	Wisconsin Electric Power Co.	Michigan	1-Jul-10	47.61
69	Connecticut Light & Power Co.	Connecticut	30-Jun-10	49.20
70	Public Service Co. of NH	New Hampshire	28-Jun-10	52.40
71	Central Hudson Gas & Electric	New York	16-Jun-10	48.00
72	Public Service Electric Gas	New Jersey	7-Jun-10	51.20
73	Union Electric Co.	Missouri	28-May-10	51.26
74	Atlantic City Electric Co.	New Jersey	12-May-10	49.10
75	Rockland Electric Company	New Jersey	12-May-10	49.85
76	Ameren Illinois	Illinois	29-Apr-10	43.55
77	Ameren Illinois	Illinois	29-Apr-10	43.61
78	Ameren Illinois	Illinois	29-Apr-10	48.67
79	MDU Resources Group Inc.	Wyoming	27-Apr-10	49.77
80	Puget Sound Energy Inc.	Washington	2-Apr-10	46.00
81	Consolidated Edison Co. of NY	New York	25-Mar-10	48.00
82	Florida Power & Light Co.	Florida	17-Mar-10	47.00
83	Virginia Electric & Power Co.	Virginia	11-Mar-10	47.41
84	Virginia Electric & Power Co.	Virginia	11-Mar-10	47.71
85	Florida Power Corp.	Florida	5-Mar-10	46.74
86	Kentucky Utilities Co.	Virginia	4-Mar-10	53.62
87	Potomac Electric Power Co.	District of Columbia	2-Mar-10	46.18
88	Idaho Power Co.	Oregon	24-Feb-10	49.80
89	PacifiCorp	Utah	18-Feb-10	51.00
90	Narragansett Electric Co.	Rhode Island	9-Feb-10	42.75

LINE NO.	COMPANY	STATE	ORDER DATE	EQUITY RATIO(%)
91	Kansas Gas and Electric Co.	Kansas	27-Jan-10	50.13
92	Westar Energy Inc.	Kansas	27-Jan-10	50.13
93	Duke Energy Carolinas LLC	South Carolina	27-Jan-10	53.00
94	PacifiCorp	Oregon	26-Jan-10	51.00
95	Interstate Power & Light Co.	Iowa	4-Jan-10	49.52
96	Delmarva Power & Light Co.	Maryland	30-Dec-09	49.87
97	Avista Corp.	Washington	22-Dec-09	46.50
98	Northern States Power Co - WI	Wisconsin	22-Dec-09	52.30
99	Madison Gas and Electric Co.	Wisconsin	22-Dec-09	55.34
100	Wisconsin Power and Light Co	Wisconsin	18-Dec-09	50.38
101	Wisconsin Electric Power Co.	Wisconsin	18-Dec-09	53.02
102	Upper Peninsula Power Co.	Michigan	16-Dec-09	49.52
103	Arizona Public Service Co.	Arizona	16-Dec-09	53.79
104	Duke Energy Carolinas LLC	North Carolina	7-Dec-09	52.50
105	Public Service Co. of CO	Colorado	3-Dec-09	58.56
106	Massachusetts Electric Co.	Massachusetts	30-Nov-09	49.99
107	Otter Tail Power Co.	North Dakota	25-Nov-09	53.30
108	Sierra Pacific Power Co.	California	3-Nov-09	43.71
109	Northern States Power Co. - MN	Minnesota	23-Oct-09	52.47
110	Cleco Power LLC	Louisiana	14-Oct-09	51.00
111	Oncor Electric Delivery Co.	Texas	31-Aug-09	40.00
112	Avista Corp.	Idaho	17-Jul-09	50.00
113	Duke Energy Ohio Inc.	Ohio	8-Jul-09	51.59
114	Nevada Power Co.	Nevada	24-Jun-09	44.15
115	Central Hudson Gas & Electric	New York	22-Jun-09	47.00
116	Idaho Power Co.	Idaho	29-May-09	49.27
117	Public Service Co. of NM	New Mexico	28-May-09	50.47
118	ALLETE (Minnesota Power)	Minnesota	4-May-09	54.79
119	Tampa Electric Co.	Florida	30-Apr-09	47.49
120	Consolidated Edison Co. of NY	New York	24-Apr-09	48.00
121	PacifiCorp	Utah	21-Apr-09	51.00
122	Southern California Edison Co.	California	12-Mar-09	48.00
123	Indiana Michigan Power Co.	Indiana	4-Mar-09	45.80
124	United Illuminating Co.	Connecticut	4-Feb-09	50.00
125	Idaho Power Co.	Idaho	30-Jan-09	49.27
126	Union Electric Co.	Missouri	27-Jan-09	52.01
127	Cleveland Elec Illuminating Co	Ohio	21-Jan-09	49.00
128	Ohio Edison Co.	Ohio	21-Jan-09	49.00
129	Toledo Edison Co.	Ohio	21-Jan-09	49.00
130	Public Service Co. of OK	Oklahoma	14-Jan-09	44.10
131	Appalachian Power Co.	Virginia	14-Jan-09	41.53
132	Average 2009			49.5
133	Average 2010			49.0
134	Average 2011			48.8
135	Average 2009 - 2011			49.1

EXHIBIT 6
ALLOWED EQUITY RATIOS
U.S. NATURAL GAS UTILITIES
2009 – 2011[6]

LINE NO.	COMPANY	STATE	ORDER DATE	EQUITY RATIO(%)
1	Northern States Power Co - WI	Wisconsin	22-Dec-11	52.59
2	Virginia Natural Gas Inc.	Virginia	20-Dec-11	45.36
3	Southwest Gas Corp.	Arizona	13-Dec-11	52.30
4	Washington Gas Light Co.	Maryland	14-Nov-11	57.88
5	Public Service Co. of CO	Colorado	1-Sep-11	56.00
6	Fitchburg Gas & Electric Light	Massachusetts	1-Aug-11	42.88
7	Yankee Gas Services Co.	Connecticut	29-Jun-11	52.20
8	Pacific Gas and Electric Co.	California	13-May-11	52.00
9	Washington Gas Light Co.	Virginia	21-Apr-11	55.70
10	CenterPoint Energy Resources	Texas	18-Apr-11	55.44
11	New England Gas Company	Massachusetts	31-Mar-11	50.17
12	Avista Corp.	Oregon	10-Mar-11	50.00
13	Wisconsin Public Service Corp.	Wisconsin	13-Jan-11	51.65
14	Madison Gas and Electric Co.	Wisconsin	12-Jan-11	58.06
15	SourceGas Distribution LLC	Wyoming	23-Dec-10	50.34
16	Sierra Pacific Power Co.	Nevada	20-Dec-10	44.11
17	Columbia Gas of Virginia Inc	Virginia	17-Dec-10	42.70
18	Texas Gas Service Co.	Texas	14-Dec-10	59.24
19	NorthWestern Energy Division	Montana	9-Dec-10	48.00
20	Baltimore Gas and Electric Co.	Maryland	6-Dec-10	51.93
21	Northern States Power Co. - MN	Minnesota	6-Dec-10	52.46
22	SourceGas Distribution LLC	Colorado	1-Dec-10	50.48
23	Avista Corp.	Washington	19-Nov-10	46.50
24	Northern IN Public Svc Co.	Indiana	4-Nov-10	46.29
25	Atlanta Gas Light Co.	Georgia	3-Nov-10	51.00
26	Boston Gas Co.	Massachusetts	2-Nov-10	50.00
27	Colonial Gas Co.	Massachusetts	2-Nov-10	50.00
28	Delta Natural Gas Co.	Kentucky	21-Oct-10	44.49
29	Consolidated Edison Co. of NY	New York	16-Sep-10	48.00
30	NY State Electric & Gas Corp.	New York	16-Sep-10	48.00
31	Rochester Gas & Electric Corp.	New York	16-Sep-10	48.00
32	South Jersey Gas Co.	New Jersey	16-Sep-10	51.20
33	Black Hills Nebraska Gas	Nebraska	17-Aug-10	52.00
34	Public Service Electric Gas	New Jersey	18-Jun-10	51.20
35	Central Hudson Gas & Electric	New York	16-Jun-10	48.00
36	Chattanooga Gas Company	Tennessee	24-May-10	46.06
37	Ameren Illinois	Illinois	29-Apr-10	43.55
38	Ameren Illinois	Illinois	29-Apr-10	43.61

[6] Data from Regulatory Research Associates, SNL Financial, February 17, 2012.

LINE NO.	COMPANY	STATE	ORDER DATE	EQUITY RATIO(%)
39	Ameren Illinois	Illinois	29-Apr-10	48.67
40	Questar Gas Co.	Utah	8-Apr-10	52.91
41	Puget Sound Energy Inc.	Washington	2-Apr-10	46.00
42	UNS Gas Inc.	Arizona	1-Apr-10	49.90
43	Atmos Energy Corp.	Georgia	31-Mar-10	47.70
44	MidAmerican Energy Co.	Illinois	24-Mar-10	47.08
45	SourceGas Distribution LLC	Nebraska	9-Mar-10	49.96
46	CenterPoint Energy Resources	Texas	23-Feb-10	55.60
47	Missouri Gas Energy	Missouri	10-Feb-10	38.66
48	Atmos Energy Corp.	Texas	26-Jan-10	48.91
49	North Shore Gas Co.	Illinois	21-Jan-10	56.00
50	Peoples Gas Light & Coke Co.	Illinois	21-Jan-10	56.00
51	CenterPoint Energy Resources	Minnesota	11-Jan-10	52.55
52	Duke Energy Kentucky Inc.	Kentucky	29-Dec-09	49.90
53	Avista Corp.	Washington	22-Dec-09	46.50
54	Madison Gas and Electric Co.	Wisconsin	22-Dec-09	55.34
55	Wisconsin Gas LLC	Wisconsin	18-Dec-09	46.62
56	Wisconsin Power and Light Co	Wisconsin	18-Dec-09	50.38
57	Wisconsin Electric Power Co.	Wisconsin	18-Dec-09	53.02
58	Pivotal Utility Holdings Inc.	New Jersey	17-Dec-09	47.89
59	Michigan Gas Utilities Corp	Michigan	16-Dec-09	47.27
60	ONEOK Inc.	Oklahoma	14-Dec-09	55.30
61	Hope Gas Inc	West Virginia	20-Nov-09	42.34
62	Columbia Gas of Massachusetts	Massachusetts	30-Oct-09	53.57
63	Southwest Gas Corp.	Nevada	28-Oct-09	47.09
64	Southwest Gas Corp.	Nevada	28-Oct-09	47.09
65	Avista Corp.	Oregon	26-Oct-09	50.00
66	Orange & Rockland Utlts Inc.	New York	16-Oct-09	48.00
67	Avista Corp.	Idaho	17-Jul-09	50.00
68	Southern Connecticut Gas Co.	Connecticut	17-Jul-09	52.00
69	CT Natural Gas Corp.	Connecticut	30-Jun-09	52.52
70	Minnesota Energy Resources	Minnesota	29-Jun-09	48.77
71	Central Hudson Gas & Electric	New York	22-Jun-09	47.00
72	Black Hills Iowa Gas Utility	Iowa	3-Jun-09	51.38
73	EnergyNorth Natural Gas Inc.	New Hampshire	29-May-09	50.00
74	Florida Public Utilities Co.	Florida	27-May-09	42.17
75	Niagara Mohawk Power Corp.	New York	15-May-09	43.70
76	Peoples Gas System	Florida	5-May-09	48.51
77	Northern Illinois Gas Co.	Illinois	25-Mar-09	51.07
78	Atmos Energy Corp.	Tennessee	9-Mar-09	48.12
79	New England Gas Company	Massachusetts	2-Feb-09	34.19
80	Michigan Gas Utilities Corp	Michigan	13-Jan-09	46.49
81	Average 2009			48.5
82	Average 2010			49.1
83	Average 2011			52.3
84	Average 2009 - 2011			49.4

EXHIBIT 7
COMPARISON OF DCF EXPECTED RETURN ON AN INVESTMENT IN ELECTRIC UTILITIES TO THE INTEREST RATE ON LONG-TERM GOVERNMENT BONDS

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
1	Sep-99	0.1155	0.0650	0.0505
2	Oct-99	0.1159	0.0666	0.0493
3	Nov-99	0.1190	0.0648	0.0542
4	Dec-99	0.1234	0.0669	0.0565
5	Jan-00	0.1219	0.0686	0.0533
6	Feb-00	0.1267	0.0654	0.0613
7	Mar-00	0.1311	0.0638	0.0673
8	Apr-00	0.1235	0.0618	0.0617
9	May-00	0.1225	0.0655	0.0570
10	Jun-00	0.1240	0.0628	0.0612
11	Jul-00	0.1245	0.0620	0.0625
12	Aug-00	0.1226	0.0602	0.0624
13	Sep-00	0.1163	0.0609	0.0554
14	Oct-00	0.1169	0.0604	0.0565
15	Nov-00	0.1190	0.0598	0.0592
16	Dec-00	0.1164	0.0564	0.0600
17	Jan-01	0.1192	0.0565	0.0627
18	Feb-01	0.1202	0.0562	0.0640
19	Mar-01	0.1206	0.0549	0.0657
20	Apr-01	0.1231	0.0578	0.0653
21	May-01	0.1277	0.0592	0.0685
22	Jun-01	0.1284	0.0582	0.0702
23	Jul-01	0.1293	0.0575	0.0718
24	Aug-01	0.1300	0.0558	0.0742
25	Sep-01	0.1319	0.0553	0.0766
26	Oct-01	0.1311	0.0534	0.0777
27	Nov-01	0.1294	0.0533	0.0761
28	Dec-01	0.1291	0.0576	0.0715
29	Jan-02	0.1272	0.0569	0.0703
30	Feb-02	0.1284	0.0561	0.0723
31	Mar-02	0.1246	0.0593	0.0653
32	Apr-02	0.1226	0.0585	0.0641
33	May-02	0.1235	0.0581	0.0654
34	Jun-02	0.1252	0.0565	0.0687
35	Jul-02	0.1336	0.0551	0.0785
36	Aug-02	0.1298	0.0519	0.0779
37	Sep-02	0.1270	0.0487	0.0783
38	Oct-02	0.1289	0.0500	0.0789

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
39	Nov-02	0.1240	0.0504	0.0736
40	Dec-02	0.1224	0.0501	0.0723
41	Jan-03	0.1194	0.0502	0.0692
42	Feb-03	0.1231	0.0487	0.0744
43	Mar-03	0.1211	0.0482	0.0729
44	Apr-03	0.1169	0.0491	0.0678
45	May-03	0.1094	0.0452	0.0642
46	Jun-03	0.1045	0.0434	0.0611
47	Jul-03	0.1071	0.0492	0.0579
48	Aug-03	0.1063	0.0539	0.0524
49	Sep-03	0.1027	0.0521	0.0506
50	Oct-03	0.1008	0.0521	0.0487
51	Nov-03	0.0983	0.0517	0.0466
52	Dec-03	0.0944	0.0511	0.0433
53	Jan-04	0.0920	0.0501	0.0419
54	Feb-04	0.0915	0.0494	0.0421
55	Mar-04	0.0911	0.0472	0.0439
56	Apr-04	0.0924	0.0516	0.0408
57	May-04	0.0961	0.0546	0.0415
58	Jun-04	0.0960	0.0545	0.0415
59	Jul-04	0.0952	0.0524	0.0428
60	Aug-04	0.0965	0.0507	0.0458
61	Sep-04	0.0950	0.0489	0.0461
62	Oct-04	0.0952	0.0485	0.0467
63	Nov-04	0.0917	0.0489	0.0428
64	Dec-04	0.0919	0.0488	0.0431
65	Jan-05	0.0923	0.0477	0.0446
66	Feb-05	0.0916	0.0461	0.0455
67	Mar-05	0.0917	0.0489	0.0428
68	Apr-05	0.0922	0.0475	0.0447
69	May-05	0.0908	0.0456	0.0452
70	Jun-05	0.0910	0.0435	0.0475
71	Jul-05	0.0897	0.0448	0.0449
72	Aug-05	0.0899	0.0453	0.0446
73	Sep-05	0.0922	0.0451	0.0471
74	Oct-05	0.0933	0.0474	0.0459
75	Nov-05	0.0980	0.0483	0.0497
76	Dec-05	0.0979	0.0473	0.0506
77	Jan-06	0.0979	0.0465	0.0514
78	Feb-06	0.1070	0.0473	0.0597
79	Mar-06	0.1053	0.0491	0.0562
80	Apr-06	0.1075	0.0522	0.0553
81	May-06	0.1087	0.0535	0.0552
82	Jun-06	0.1117	0.0529	0.0588

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
83	Jul-06	0.1110	0.0525	0.0585
84	Aug-06	0.1072	0.0508	0.0564
85	Sep-06	0.1111	0.0493	0.0618
86	Oct-06	0.1074	0.0494	0.0580
87	Nov-06	0.1078	0.0478	0.0600
88	Dec-06	0.1071	0.0478	0.0593
89	Jan-07	0.1096	0.0495	0.0601
90	Feb-07	0.1085	0.0493	0.0592
91	Mar-07	0.1094	0.0481	0.0613
92	Apr-07	0.1042	0.0495	0.0547
93	May-07	0.1068	0.0498	0.0570
94	Jun-07	0.1123	0.0529	0.0594
95	Jul-07	0.1130	0.0519	0.0611
96	Aug-07	0.1104	0.0500	0.0604
97	Sep-07	0.1078	0.0484	0.0594
98	Oct-07	0.1084	0.0483	0.0601
99	Nov-07	0.1116	0.0456	0.0660
100	Dec-07	0.1132	0.0457	0.0675
101	Jan-08	0.1193	0.0435	0.0758
102	Feb-08	0.1133	0.0449	0.0684
103	Mar-08	0.1170	0.0436	0.0734
104	Apr-08	0.1159	0.0444	0.0715
105	May-08	0.1162	0.0460	0.0702
106	Jun-08	0.1136	0.0474	0.0662
107	Jul-08	0.1172	0.0462	0.0710
108	Aug-08	0.1191	0.0453	0.0738
109	Sep-08	0.1185	0.0432	0.0753
110	Oct-08	0.1280	0.0445	0.0835
111	Nov-08	0.1312	0.0427	0.0885
112	Dec-08	0.1301	0.0318	0.0983
113	Jan-09	0.1241	0.0346	0.0895
114	Feb-09	0.1269	0.0383	0.0886
115	Mar-09	0.1286	0.0378	0.0908
116	Apr-09	0.1266	0.0384	0.0882
117	May-09	0.1242	0.0422	0.0820
118	Jun-09	0.1220	0.0451	0.0769
119	Jul-09	0.1174	0.0438	0.0736
120	Aug-09	0.1158	0.0433	0.0725
121	Sep-09	0.1152	0.0414	0.0738
122	Oct-09	0.1153	0.0416	0.0737
123	Nov-09	0.1196	0.0424	0.0772
124	Dec-09	0.1095	0.0440	0.0655
125	Jan-10	0.1112	0.0450	0.0662
126	Feb-10	0.1091	0.0448	0.0643

LINE NO.	DATE	DCF	BOND YIELD	RISK PREMIUM
127	Mar-10	0.1076	0.0449	0.0627
128	Apr-10	0.1111	0.0453	0.0658
129	May-10	0.1093	0.0411	0.0682
130	Jun-10	0.1088	0.0395	0.0693
131	Jul-10	0.1078	0.0380	0.0698
132	Aug-10	0.1057	0.0352	0.0705
133	Sep-10	0.1059	0.0347	0.0712
134	Oct-10	0.1044	0.0352	0.0692
135	Nov-10	0.1051	0.0382	0.0669
136	Dec-10	0.1053	0.0417	0.0636
137	Jan-11	0.1044	0.0428	0.0616
138	Feb-11	0.1041	0.0442	0.0599
139	Mar-11	0.1044	0.0427	0.0617
140	Apr-11	0.0977	0.0428	0.0549
141	May-11	0.0994	0.0401	0.0593
142	Jun-11	0.0992	0.0391	0.0601
143	Jul-11	0.0968	0.0395	0.0573
144	Aug-11	0.1006	0.0324	0.0682
145	Sep-11	0.0972	0.0283	0.0689
146	Oct-11	0.0998	0.0287	0.0711
147	Nov-11	0.0982	0.0272	0.0710
148	Dec-11	0.0984	0.0267	0.0717
149	Jan-12	0.0977	0.0270	0.0707

Notes: See written evidence above and Exhibit 20, Appendix 3, for a description of the ex ante methodology and data employed. Government bond yield data are from Ibbotson Associates. DCF results are calculated using a quarterly DCF model as follows:

d_0 = Latest quarterly dividend per Thomson Reuters
P_0 = Average of the monthly high and low stock prices for each month per Thomson Reuters
FC = Flotation costs expressed as a percent of gross proceeds
g = I/B/E/S forecast of future earnings growth for each month
k = Cost of equity using the quarterly version of the DCF model

$$k = \left[\frac{d_0 (1+g)^{\frac{1}{4}}}{P_0 (1-FC)} + (1+g)^{\frac{1}{4}} \right]^4 - 1$$

EXHIBIT 8
IMPLIED ALLOWED EQUITY RISK PREMIUM[7]

YEAR	AVERAGE ALLOWED RETURN ELECTRIC UTILITIES	20-YEAR U.S. TREASURY BOND	RISK PREMIUM
1988	12.80	9.12	3.68
1989	12.97	8.59	4.38
1990	12.70	8.83	3.87
1991	12.54	8.19	4.35
1992	12.09	7.56	4.53
1993	11.46	6.69	4.77
1994	11.21	7.54	3.67
1995	11.58	6.90	4.68
1996	11.40	6.84	4.57
1997	11.33	6.66	4.67
1998	11.77	5.69	6.08
1999	10.72	6.23	4.49
2000	11.58	6.14	5.44
2001	11.07	5.61	5.46
2002	11.21	5.42	5.79
2003	10.96	4.95	6.02
2004	10.81	5.02	5.79
2005	10.51	4.62	5.89
2006	10.32	4.98	5.34
2007	10.30	4.87	5.43
2008	10.41	4.34	6.07
2009	10.52	4.13	6.39
2010	10.37	3.97	6.40
2011	10.25	3.54	6.71

IMPLIED ALLOWED EQUITY RISK PREMIUM
REGRESSION RESULTS

1	INTERCEPT COEFFICIENT	8.356
2	Slope Coefficient	(0.520)
3	Canada Forecast LT Yield	3.06
4	Slope x Bond Yield	-1.590
5	Forecast Risk Premium (Line 1 + Line 4)	6.77

[7] Average annual allowed returns on equity from Regulatory Research Associates, SNL Financial; yield on long-term U.S. Treasury bonds from Ibbotson Associates.

EXHIBIT 9
SEGMENT INFORMATION
BMO CM CANADIAN UTILITIES COMPANIES

Canadian Utilities Limited

Segment Assets ($Canadian millions)						
Year	Total	Utilities	Energy	ATCO Australia	Corporate and Other	Intersegment Eliminations
2011	$11,696	$7,903	$1,891	$1,340	$728	-$166

Percentage of Total Assets						
Year	Total	Utilities	Energy	ATCO Australia	Corporate and Other	Intersegment Eliminations
2011	100.00%	68%	16%	11%	6%	-1%

SEGMENT INFORMATION
BMO CM CANADIAN UTILITIES COMPANIES

Emera Incorporated

Segment Assets ($Canadian millions)						
Year	Total	NSPI	Maine Utility Operations	Caribbean Utility Operations	Brunswick Pipeline	Other
2011	$6,924	$3,897	$963	$849	$546	$669

Percentage of Total Assets						
Year	Total	NSPI	Maine Utility Operations	Caribbean Utility Operations	Brunswick Pipeline	Other
2011	100.00%	56%	14%	12%	8%	10%

SEGMENT INFORMATION
BMO CM CANADIAN UTILITIES COMPANIES

Enbridge Inc.

Segment Assets ($Canadian millions)						
Year	Total	Liquids Pipelines	Gas Distribution	Gas Pipelines, Processing, & Energy Services	Sponsored Investments	Corporate
2011	$30,220	$11,508	$7,594	$5,536	$3,833	$1,749

Percentage of Total Assets						
Year	Total	Liquids Pipelines	Gas Distribution	Gas Pipelines, Processing, & Energy Services	Sponsored Investments	Corporate
2011	100.00%	38%	25%	18%	13%	6%

SEGMENT INFORMATION
BMO CM CANADIAN UTILITIES COMPANIES

Fortis Inc.

Segment Assets ($Canadian millions)						
Year	Total	Regulated Gas Utilities - Canadian	Regulated Electric Utilities - Canadian	Regulated Electric Utilities - Caribbean	Non-Regulated - Fortis Generation	Non-Regulated Fortis Properties
2011	$13,471	$5,316	$6,143	$856	$542	$614

Percentage of Total Assets						
Year	Total	Regulated Gas Utilities - Canadian	Regulated Electric Utilities - Canadian	Regulated Electric Utilities - Caribbean	Non-Regulated - Fortis Generation	Non-Regulated Fortis Properties
2011	100.00%	39%	46%	6%	4%	5%

SEGMENT INFORMATION
BMO CM CANADIAN UTILITIES COMPANIES

TransCanada Corporation

Segment Assets ($Canadian millions)					
Year	Total	Natural Gas Pipelines	Oil Pipelines	Energy	Corporate
2011	$48,995	$23,669	$9,439	$14,276	$1,611

Percentage of Total Assets					
Year	Total	Natural Gas Pipelines	Oil Pipelines	Energy	Corporate
2011	100.00%	48%	19%	29%	3%

EXHIBIT 10
SEGMENT INFORMATION
S&P/TSX UTILITIES

ATCO Limited

Segment Assets ($Canadian millions)						
Year	Total	Structures & Logistics	Utilities	Energy	ATCO Australia	Corporate & Other
2011	$12,555	$721	$7,903	$1,891	$1,340	$700

Percentage of Total Assets						
Year	Total	Structures & Logistics	Utilities	Energy	ATCO Australia	Corporate & Other
2011	100.00%	6%	63%	15%	11%	6%

SEGMENT INFORMATION
S&P/TSX UTILITIES

Algonquin Power & Utilities Corp.

Segment Assets ($Canadian millions)				
Year	*Total*	*Algonquin Power*	*Liberty Utilities*	*Corporate*
2010	*$981*	*$663*	*$206*	*$112*

Percentage of Total Assets				
Year	*Total*	*Algonquin Power*	*Liberty Utilities*	*Corporate*
2010	*100.00%*	*68%*	*21%*	*11%*

EXHIBIT 11
PERCENT OF TOTAL ASSETS
FOR REGULATED UTILITY SERVICES
U.S. ELECTRIC UTILITY GROUP

COMPANY	% REGULATED ASSETS
Alliant Energy	87%
Amer. Elec. Power	97%
Avista Corp.	91%
CenterPoint Energy	72%
Consol. Edison	89%
Dominion Resources	63%
DTE Energy	81%
Duke Energy	77%
G't Plains Energy	100%
Integrys Energy	83%
NextEra Energy	54%
Northeast Utilities	95%
OGE Energy	77%
Pepco Holdings	73%
Pinnacle West Capital	99%
Portland General	100%
PPL Corp.	62%
SCANA Corp.	77%
Sempra Energy	66%
Southern Co.	93%
TECO Energy	94%
UIL Holdings	99%
Vectren Corp.	98%
Westar Energy	100%
Wisconsin Energy	92%
Xcel Energy Inc.	95%
Average	**85%**

EXHIBIT 12
PERCENT OF TOTAL ASSETS
FOR REGULATED UTILITY SERVICES
U.S. NATURAL GAS GROUP

COMPANY	% REGULATED ASSETS
AGL Resources	80%
NiSource Inc.	77%
Northwest Nat. Gas	90%
Piedmont Natural Gas Company, Inc.	97%
Questar Corporation	80%
South Jersey Inds.	77%
WGL Holdings Inc.	89%
Average	**84%**

EXHIBIT 13
STANDARD & POOR'S BOND RATINGS
U.S. ELECTRIC AND NATURAL GAS UTILITY GROUPS

LINE NO.	COMPANY	S&P BOND RATING	S&P BOND RATING (NUMERICAL)
1	Alliant Energy	BBB+	6
2	Amer. Elec. Power	BBB	7
3	Avista Corp.	BBB	7
4	CenterPoint Energy	BBB+	6
5	Consol. Edison	A-	5
6	Dominion Resources	A-	5
7	DTE Energy	BBB+	6
8	Duke Energy	A-	5
9	G't Plains Energy	BBB	7
10	Integrys Energy	BBB+	6
11	NextEra Energy	A-	5
12	Northeast Utilities	BBB	7
13	OGE Energy	BBB+	6
14	Pepco Holdings	BBB+	6
15	Pinnacle West Capital	BBB	7
16	Portland General	BBB	7
17	PPL Corp.	BBB	7
18	SCANA Corp.	BBB+	6
19	Sempra Energy	BBB+	6
20	Southern Co.	A	4
21	TECO Energy	BBB	7
22	UIL Holdings	BBB	7
23	Vectren Corp.	A-	5
24	Westar Energy	BBB	7
25	Wisconsin Energy	A-	5
26	Xcel Energy Inc.	A-	5
27	Average	BBB+	6

STANDARD & POOR'S BOND RATINGS
U.S. ELECTRIC AND NATURAL GAS UTILITY GROUPS

LINE NO.	COMPANY	S&P BOND RATING	S&P BOND RATING (NUMERICAL)
1	AGL Resources	AA	1
2	NiSource Inc.	BBB-	8
3	Northwest Nat. Gas	A+	3
4	Piedmont Natural Gas	A	4
5	Questar Corp.	A	4
6	South Jersey Inds.	BBB+	6
7	WGL Holdings Inc.	AA-	2
8	Average	A	4

EXHIBIT 14
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR VALUE LINE ELECTRIC UTILITIES

LINE NO.	COMPANY	D_0	P_0	GROWTH	COST OF EQUITY
1	Alliant Energy	0.450	42.342	4.90%	9.3%
2	Amer. Elec. Power	0.470	39.740	3.80%	8.8%
3	Avista Corp.	0.275	25.108	4.50%	9.2%
4	CenterPoint Energy	0.198	19.613	5.73%	10.1%
5	Consol. Edison	0.605	59.441	3.59%	7.9%
6	Dominion Resources	0.493	51.313	3.66%	7.8%
7	DTE Energy	0.588	52.638	3.84%	8.5%
8	Duke Energy	0.250	21.025	3.87%	8.9%
9	G't Plains Energy	0.213	21.043	4.10%	8.4%
10	Integrys Energy	0.680	52.067	9.40%	15.4%
11	NextEra Energy	0.550	57.710	5.77%	10.0%
12	Northeast Utilities	0.275	34.678	6.82%	10.3%
13	OGE Energy	0.393	53.477	7.80%	11.0%
14	Pepco Holdings	0.270	19.703	4.80%	10.8%
15	Pinnacle West Capital	0.525	46.877	5.02%	9.9%
16	Portland General	0.265	24.763	5.88%	10.6%
17	PPL Corp.	0.350	29.033	8.40%	13.9%
18	SCANA Corp.	0.485	43.512	4.48%	9.3%
19	Sempra Energy	0.480	54.193	7.43%	11.4%
20	Southern Co.	0.473	44.483	5.88%	10.6%
21	TECO Energy	0.220	18.522	4.93%	10.0%
22	UIL Holdings	0.432	34.345	4.05%	9.5%
23	Vectren Corp.	0.350	29.000	5.50%	10.8%
24	Westar Energy	0.320	27.711	5.20%	10.2%
25	Wisconsin Energy	0.300	33.546	7.65%	11.3%
26	Xcel Energy Inc.	0.260	26.440	4.87%	9.1%
27	Average				10.1%

Notes:

d_0	=	Most recent quarterly dividend
d_1,d_2,d_3,d_4	=	Next four quarterly dividends, calculated by multiplying the last four quarterly dividends per *Value Line* by the factor (1 + g)
P_0	=	Average of the monthly high and low stock prices during the three months ending January 2012 per Thomson Reuters
FC	=	Flotation costs expressed as a percent of gross proceeds
g	=	I/B/E/S forecast of future earnings growth January 2012
k	=	Cost of equity using the quarterly version of the DCF model:

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0} + g$$

EXHIBIT 15
SUMMARY OF DISCOUNTED CASH FLOW ANALYSIS
FOR VALUE LINE NATURAL GAS UTILITIES

LINE NO.	COMPANY	D_0	P_0	GROWTH	COST OF EQUITY
1	AGL Resources	0.450	40.950	3.73%	8.4%
2	NiSource Inc.	0.230	22.687	8.37%	13.0%
3	Northwest Nat. Gas	0.445	47.082	3.63%	7.6%
4	Piedmont Natural Gas	0.290	32.767	4.30%	8.1%
5	Questar Corp.	0.163	19.362	5.65%	9.2%
6	South Jersey Inds.	0.403	55.455	8.67%	11.7%
7	WGL Holdings Inc.	0.388	42.932	3.93%	7.8%
8	Average				9.4%

Notes:

d_0 = Most recent quarterly dividend.
d_1,d_2,d_3,d_4 = Next four quarterly dividends, calculated by multiplying the last four quarterly dividends per *Value Line* by the factor (1 + g)
P_0 = Average of the monthly high and low stock prices during the three months ending January 2012 per Thomson Reuters
g = I/B/E/S forecast of future earnings growth January 2012
k = Cost of equity using the quarterly version of the DCF model

$$k = \frac{d_1(1+k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4}{P_0} + g$$

EXHIBIT 16
MARKET VALUE EQUITY RATIOS FOR U.S. ELECTRIC UTILITIES

LINE NO.	COMPANY	LONG-TERM DEBT	PREFERRED EQUITY	MARKET CAP $ (MIL)	% LONG-TERM DEBT	% PREFERRED	% MARKET EQUITY
1	Alliant Energy	2,703	244	4,705	35.3%	3.2%	61.5%
2	Amer. Elec. Power	15,502	60	19,104	44.7%	0.2%	55.1%
3	Avista Corp.	1,200	0	1,475	44.8%	0.0%	55.2%
4	CenterPoint Energy	9,001	0	7,867	53.4%	0.0%	46.6%
5	CMS Energy Corp.	6,636	44	5,535	54.3%	0.4%	45.3%
6	Consol. Edison	10,671	0	17,270	38.2%	0.0%	61.8%
7	Dominion Resources	15,758	257	28,503	35.4%	0.6%	64.0%
8	DTE Energy	7,089	0	9,006	44.0%	0.0%	56.0%
9	Duke Energy	17,935	0	28,365	38.7%	0.0%	61.3%
10	G't Plains Energy	2,943	39	2,806	50.8%	0.7%	48.5%
11	Integrys Energy	2,162	51	4,064	34.4%	0.8%	64.7%
12	NextEra Energy	18,013	0	25,289	41.6%	0.0%	58.4%
13	Northeast Utilities	4,814	116	6,152	43.4%	1.0%	55.5%
14	OGE Energy	2,363	0	5,183	31.3%	0.0%	68.7%
15	Pepco Holdings	4,062	0	4,462	47.7%	0.0%	52.3%
16	Pinnacle West Capital	3,046	0	5,160	37.1%	0.0%	62.9%
17	Portland General	1,798	0	1,879	48.9%	0.0%	51.1%
18	PPL Corp.	12,161	250	16,071	42.7%	0.9%	56.4%
19	SCANA Corp.	4,152	0	5,812	41.7%	0.0%	58.3%
20	Sempra Energy	8,980	179	13,646	39.4%	0.8%	59.8%
21	Southern Co.	18,154	1,082	39,269	31.0%	1.8%	67.1%
22	TECO Energy	3,148	0	3,895	44.7%	0.0%	55.3%
23	UIL Holdings	1,512	0	1,748	46.4%	0.0%	53.6%
24	Vectren Corp.	1,435	0	2,340	38.0%	0.0%	62.0%
25	Westar Energy	2,777	21	3,333	45.3%	0.3%	54.4%
26	Wisconsin Energy	3,932	30	7,863	33.3%	0.3%	66.5%
27	Xcel Energy Inc.	9,263	105	12,900	41.6%	0.5%	57.9%
28	Composite	191,209	2,479	283,701	40.1%	0.5%	59.4%

Data are from The Value Line Investment Analyzer, February 2012.

EXHIBIT 17
MARKET VALUE EQUITY RATIOS FOR U.S. NATURAL GAS UTILITIES

LINE NO.	COMPANY	LONG-TERM DEBT	PREFERRED EQUITY	MARKET CAP $ (MIL)	% LONG-TERM DEBT	% PREFERRED	% MARKET EQUITY
1	AGL Resources	1,673	0	4,845	25.7%	0.0%	74.3%
2	NiSource Inc.	5,936	0	6,390	48.2%	0.0%	51.8%
3	Northwest Nat. Gas	592	0	1,270	31.8%	0.0%	68.2%
4	Piedmont Natural Gas	675	0	2,382	22.1%	0.0%	77.9%
5	Questar Corp.	899	0	3,427	20.8%	0.0%	79.2%
6	South Jersey Inds.	340	0	1,654	17.1%	0.0%	82.9%
7	WGL Holdings Inc.	587	28	2,196	20.9%	1.0%	78.1%
8	Average				26.6%	0.1%	73.2%
9	Composite	10,702	28	22,164	32.5%	0.1%	67.4%

Data are from The Value Line Investment Analyzer, February 2012.

EXHIBIT 18
APPENDIX 1
QUALIFICATIONS OF JAMES H. VANDER WEIDE, PH.D.

James H. Vander Weide is Research Professor of Finance and Economics at Duke University, the Fuqua School of Business. Dr. Vander Weide is also founder and President of Financial Strategy Associates, a consulting firm that provides strategic, financial, and economic consulting services to corporate clients, including cost of capital and valuation studies.

Educational Background and Prior Academic Experience

Dr. Vander Weide holds a Ph.D. in Finance from Northwestern University and a Bachelor of Arts in Economics from Cornell University. He joined the faculty at Duke University and was named Assistant Professor, Associate Professor, Professor, and then Research Professor of Finance and Economics.

Since joining the faculty at Duke, Dr. Vander Weide has taught courses in corporate finance, investment management, and management of financial institutions. He has also taught courses in statistics, economics, and operations research, and a Ph.D. seminar on the theory of public utility pricing. In addition, Dr. Vander Weide has been active in executive education at Duke and Duke Corporate Education, leading executive development seminars on topics including financial analysis, cost of capital, creating shareholder value, mergers and acquisitions, real options, capital budgeting, cash management, measuring corporate performance, valuation, short-run financial planning, depreciation policies, financial strategy, and competitive strategy. Dr. Vander Weide has designed and served as Program Director for several executive education programs, including the Advanced Management Program, Competitive Strategies in Telecommunications, and the Duke Program for Manager Development for managers from the former Soviet Union.

Publications

Dr. Vander Weide has written a book entitled *Managing Corporate Liquidity: An Introduction to Working Capital Management* published by John Wiley and Sons, Inc. He has also written a chapter titled, "Financial Management in the Short Run" for *The Handbook of Modern Finance*; a chapter titled "Principles for Lifetime Portfolio Selection: Lessons from Portfolio Theory" for *The Handbook of Portfolio Construction: Contemporary Applications of Markowitz Techniques;* and research papers on such topics as portfolio management, capital budgeting, investments, the effect of regulation on the performance of public utilities, and cash management. His articles have been published in *American*

Economic Review, Financial Management, International Journal of Industrial Organization, Journal of Finance, Journal of Financial and Quantitative Analysis, Journal of Bank Research, Journal of Portfolio Management, Journal of Accounting Research, Journal of Cash Management, Management Science, Atlantic Economic Journal, Journal of Economics and Business, and *Computers and Operations Research*.

Professional Consulting Experience

Dr. Vander Weide has provided financial and economic consulting services to firms in the telecommunications, electric, gas, insurance, and water industries for more than twenty-five years. He has testified on the cost of capital, competition, risk, incentive regulation, forward-looking economic cost, economic pricing guidelines, depreciation, accounting, valuation, and other financial and economic issues in more than 400 cases before the United States Congress, the Canadian Radio-Television and Telecommunications Commission, the Federal Communications Commission, the National Energy Board (Canada), the National Telecommunications and Information Administration, the Federal Energy Regulatory Commission, the public service commissions of forty-three states, the District of Columbia, four Canadian provinces, the insurance commissions of five states, the Iowa State Board of Tax Review, the National Association of Securities Dealers, and the North Carolina Property Tax Commission. In addition, he has testified as an expert witness in telecommunications-related proceedings before the United States District Court for the District of New Hampshire, United States District Court for the Northern District of California, United States District Court for the Northern District of Illinois, Montana Second Judicial District Court Silver Bow County, the United States Bankruptcy Court for the Southern District of West Virginia, and United States District Court for the Eastern District of Michigan. He also testified as an expert before the United States Tax Court, United States District Court for the Eastern District of North Carolina; United States District Court for the District of Nebraska, and Superior Court of North Carolina. Dr. Vander Weide has testified in thirty states on issues relating to the pricing of unbundled network elements and universal service cost studies and has consulted with Bell Canada, Deutsche Telekom, and Telefónica on similar issues. He has also provided expert testimony on issues related to electric and natural gas restructuring. He has worked for Bell Canada/Nortel on a special task force to study the effects of vertical integration in the Canadian telephone industry and has worked for Bell Canada as an expert witness on the cost of capital. Dr. Vander Weide has provided consulting and expert witness testimony to the following companies:

ELECTRIC, GAS, WATER, OIL COMPANIES	
Alcoa Power Generating, Inc.	Maritimes & Northeast Pipeline
Alliant Energy and subsidiaries	MidAmerican Energy and subsidiaries
AltaLink, L.P.	National Fuel Gas
Ameren	Newfoundland Power Inc.
American Water Works	Nevada Power Company
Atmos Energy and subsidiaries	NICOR
BP p.l.c.	North Carolina Natural Gas
Central Illinois Public Service	North Shore Gas
Centurion Pipeline L.P.	Northern Natural Gas Company
Citizens Utilities	NOVA Gas Transmission Ltd.
Consolidated Natural Gas and subsidiaries	PacifiCorp
Dominion Resources and subsidiaries	Peoples Energy and its subsidiaries
Duke Energy and subsidiaries	PG&E
Empire District Electric Company	Progress Energy
EPCOR Distribution & Transmission Inc.	PSE&G
EPCOR Energy Alberta Inc.	Public Service Company of North Carolina
FortisAlberta Inc.	Sempra Energy/San Diego Gas and Electric
Hope Natural Gas	South Carolina Electric and Gas
Interstate Power Company	Southern Company and subsidiaries
Iberdrola Renewables	Tennessee-American Water Company
Iowa Southern	The Peoples Gas, Light and Coke Co.
Iowa-American Water Company	TransCanada
Iowa-Illinois Gas and Electric	Trans Québec & Maritimes Pipeline Inc.
Kentucky Power Company	Union Gas
Kentucky-American Water Company	United Cities Gas Company
Kinder Morgan Energy Partners	Virginia-American Water Company
	Xcel Energy

TELECOMMUNICATIONS COMPANIES	
ALLTEL and subsidiaries	Phillips County Cooperative Tel. Co.
Ameritech (now AT&T new)	Pine Drive Cooperative Telephone Co.
AT&T (old)	Roseville Telephone Company (SureWest)
Bell Canada/Nortel	SBC Communications (now AT&T new)
BellSouth and subsidiaries	Sherburne Telephone Company
Centel and subsidiaries	Siemens
Cincinnati Bell (Broadwing)	Southern New England Telephone
Cisco Systems	Sprint/United and subsidiaries
Citizens Telephone Company	Telefónica
Concord Telephone Company	Tellabs, Inc.
Contel and subsidiaries	The Stentor Companies
Deutsche Telekom	U S West (Qwest)
GTE and subsidiaries (now Verizon)	Union Telephone Company
Heins Telephone Company	United States Telephone Association
JDS Uniphase	Valor Telecommunications (Windstream)

TELECOMMUNICATIONS COMPANIES	
Lucent Technologies	Verizon (Bell Atlantic) and subsidiaries
Minnesota Independent Equal Access Corp.	Woodbury Telephone Company
NYNEX and subsidiaries (Verizon)	
Pacific Telesis and subsidiaries	

INSURANCE COMPANIES
Allstate
North Carolina Rate Bureau
United Services Automobile Association (USAA)
The Travelers Indemnity Company
Gulf Insurance Company

Other Professional Experience

Dr. Vander Weide conducts in-house seminars and training sessions on topics such as creating shareholder value, financial analysis, competitive strategy, cost of capital, real options, financial strategy, managing growth, mergers and acquisitions, valuation, measuring corporate performance, capital budgeting, cash management, and financial planning. Among the firms for whom he has designed and taught tailored programs and training sessions are ABB Asea Brown Boveri, Accenture, Allstate, Ameritech, AT&T, Bell Atlantic/Verizon, BellSouth, Progress Energy/Carolina Power & Light, Contel, Fisons, GlaxoSmithKline, GTE, Lafarge, MidAmerican Energy, New Century Energies, Norfolk Southern, Pacific Bell Telephone, The Rank Group, Siemens, Southern New England Telephone, TRW, and Wolseley Plc. Dr. Vander Weide has also hosted a nationally prominent conference/workshop on estimating the cost of capital. In 1989, at the request of Mr. Fuqua, Dr. Vander Weide designed the Duke Program for Manager Development for managers from the former Soviet Union, the first in the United States designed exclusively for managers from Russia and the former Soviet republics.

Early in his career, Dr. Vander Weide helped found University Analytics, Inc., which was one of the fastest growing small firms in the country. As an officer at University Analytics, he designed cash management models, databases, and software packages that are still used by most major U.S. banks in consulting with their corporate clients. Having sold his interest in University Analytics, Dr. Vander Weide now concentrates on strategic and financial consulting, academic research, and executive education.

PUBLICATIONS
JAMES H. VANDER WEIDE

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An Empirical Bayes Estimate of Market Risk, *Management Science*, July 1982 (with S. Maier and D. Peterson).

The Bond Scheduling Problem of the Multi-subsidiary Holding Company, *Management Science*, July 1982 (with K. Baker).

Deregulation and Locational Rents in Banking: a Comment, *Journal of Bank Research*, Summer 1983.

What Lockbox and Disbursement Models Really Do, *Journal of Finance*, May 1983 (with S. Maier).

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SUMMARY EXPERT TESTIMONY
JAMES H. VANDER WEIDE

SPONSOR	JURISDICTION	DATE	DOCKET NO.
Virginia-American Water Company	Virginia	Feb-11	
SFPP, L.P.	FERC	Dec-11	IS11-444-001
Union Gas	Ontario Energy Board	Nov-11	
Mississippi Power Company	FERC	Nov-11	ER12-337
National Fuel Gas	FERC	Oct-11	RP12-888-000
Gulf Power Florida	Florida	Jul-11	110138-EI
Empire District Electric Company	Oklahoma Corporation Commission	Jul-11	11-EPDE-856-RTS
Atmos Energy (West Texas)	Railroad Commission of Texas	Jun-11	
Atmos Energy (Lubbock)	Railroad Commission of Texas	Jun-11	
Iberdrola Renewables Holdings, Inc.	United States Tax Court	Apr-11	525-10
North Carolina Rate Bureau (dwelling fire)	North Carolina Dept. of Insurance	Jan-11	
Atmos Energy	Railroad Commission of Texas	Dec-10	GUD 10041
Mississippi Power Company	FERC	Oct-10	
Empire District Electric Company	Missouri	Sep-10	ER-2011-0004
Tennessee-American Water Company	Tennessee	Sep-10	10-00189
Empire District Electric Company	Arkansas	Aug-10	10-052-U
Maritimes & Northeast Pipelines Limited Partnership	National Energy Board (Canada)	Jul-10	RH 4-2010
Georgia Power Company	Georgia	Jun-10	31958
West Virginia American Water Company	West Virginia	Jun-10	Case No. 10-0920-W-42T
Atmos Energy	Mississippi	Apr-10	2005-UN-503
BP Pipelines (Alaska) Inc.	FERC	Apr-10	IS09-348-000
Empire District Electric Company	FERC	Mar-10	ER10-877-000
Kentucky-American Water Company	Kentucky	Feb-10	2010-00036
Virginia-American Water Company	Virginia	Feb-10	PUE-2010-00001
Virginia Electric and Power	North Carolina	Feb-10	E-22 SUB 459
SFPP, L.P.	FERC	Dec-09	ISO9-437-000
Atmos Energy	Missouri	Dec-09	Gr-2010-0192
Empire District Electric Company	Kansas	Nov-09	10-EPDE-314-RTS
Empire District Electric Company	Missouri	Nov-09	ER-2010-0130
Atmos Energy	Kentucky	Oct-09	2009-00354
Atmos Energy	Georgia	Oct-09	30442
SFPP, L.P. and Calnev Pipeline, L.L.C.	California	Sep-09	09-05-014 et al
Union Gas	Ontario Energy Board	Sep-09	EB-2009-0084
Atmos Energy	Mississippi	Sep-09	05-UN-503
North Carolina Rate Bureau (workers)	North Carolina Dept. of Insurance	Sep-09	
Sidley Austin LLP, Tellabs, Inc. Securities Litigation	U.S. District Court Northern Dist. Illinois	Aug-09	C.A. No. 02-C-4356
Duke Energy Carolinas	South Carolina	Jul-09	2009-226-E
MidAmerican Energy Company	Iowa	Jul-09	RPU-2009-0003
Duke Enegy Carolinas	North Carolina	Jun-09	E-7, SUB 909
Empire District Electric Company	Missouri	Jun-09	ER-2008-009
Terasen Gas Inc.	British Columbia Utilities Commission	May-09	
Atmos Energy	Railroad Commission of Texas	Apr-09	GUD-9869
Progress Energy	Florida	Mar-09	090079-EI
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Jan-09	
EPCOR, FortisAlberta, AltaLink	Alberta Utilities Commission	Nov-08	1578571, ID-85
Trans Québec & Maritimes Pipeline Inc.	Alberta Utilities Commission	Nov-08	1578571, ID-85
Kentucky-American Water Company	Kentucky Public Service	Oct-08	2008-00427

SPONSOR	JURISDICTION	DATE	DOCKET NO.
	Commission		
Atmos Energy	Tennessee Regulatory Authority	Oct-08	0800197
North Carolina Rate Bureau (workers compensation)	North Carolina Dept. of Insurance	Aug-08	
Dorsey & Whitney LLP-Williams v. Gannon	Montana 2nd Judicial Dist. Ct. Silver Bow County	Apr-08	DV-02-201
Atmos Energy	Georgia	Mar-08	27163-U
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Jan-08	
Trans Québec & Maritimes Pipeline Inc.	National Energy Board (Canada)	Dec-07	RH-1-2008
Xcel Energy	North Dakota	Dec-07	PU-07-776
Verizon Southwest	Texas	Nov-07	34723
Empire District Electric Company	Missouri	Oct-07	ER-2008-0093
North Carolina Rate Bureau (workers compensation)	North Carolina Dept. of Insurance	Sep-07	
Verizon North Inc. Contel of the South Inc.	Michigan	Aug-07	Case No. U-15210
Georgia Power Company	Georgia	Jun-07	25060-U
Duke Energy Carolinas	North Carolina	May-07	E-7 Sub 828 et al
MidAmerican Energy Company	Iowa	May-07	SPU-06-5 et al
Morrison & Foerster LLP-JDS Uniphase Securities Litigation	U.S. District Court Northern District California	Feb-07	C-02-1486-CW
North Carolina Rate Bureau (homeowners)	North Carolina Dept. of Insurance	Dec-06	
San Diego Gas & Electric	FERC	Nov-06	ER07-284-000
North Carolina Rate Bureau (workers compensation)	North Carolina Dept. of Insurance	Aug-06	
Union Electric Company d/b/a AmerenUE	Missouri	Jun-06	ER-2007-0002
North Carolina Rate Bureau (homeowners)	North Carolina Dept. of Insurance	May-06	
North Carolina Rate Bureau (dwelling fire)	North Carolina Dept. of Insurance	Mar-06	
Empire District Electric Company	Missouri	Feb-06	ER-2006-0315
PacifiCorp Power & Light Company	Washington	Jan-06	UE-050684
Verizon Maine	Maine	Dec-05	2005-155
Winston & Strawn LLP-Cisco Systems Securities Litigation	U.S. District Court Northern District California	Nov-05	C-01-20418-JW
Dominion Virginia Power	Virginia	Nov-05	PUE-2004-00048
Bryan Cave LLP--Omniplex Comms. v. Lucent Technologies	U.S. District Court Eastern District Missouri	Sep-05	04CV00477 ERW
North Carolina Rate Bureau (workers comp)	North Carolina Dept. of Insurance	Sep-05	
Empire District Electric Company	Kansas	Sep-05	05-EPDE-980-RTS
Verizon Southwest	Texas	Jul-05	29315
PG&E Company	FERC	Jul-05	ER-05-1284
Dominion Hope	West Virginia	Jun-05	05-034-G42T
Empire District Electric Company	Missouri	Jun-05	EO-2005-0263
Verizon New England	U.S. District Court New Hampshire	May-05	04-CV-65-PB
San Diego Gas & Electric	California	May-05	05-05-012
Progress Energy	Florida	May-05	50078
Verizon Vermont	Vermont	Feb-05	6959
North Carolina Rate Bureau (homeowners)	North Carolina Dept. of Insurance	Feb-05	
Verizon Florida	Florida	Jan-05	050059-TL
Verizon Illinois	Illinois	Jan-05	00-0812
Dominion Resources	North Carolina	Sep-04	E-22 Sub 412
Tennessee-American Water Company	Tennessee	Aug-04	04-00288
Valor Telecommunications of Texas, LP.	New Mexico	Jul-04	3495 Phase C
Alcoa Power Generating Inc.	North Carolina Property Tax Commission	Jul-04	02 PTC 162 and 02 PTC 709
PG&E Company	California	May-04	04-05-21
Verizon Northwest	Washington	Apr-04	UT-040788
Verizon Northwest	Washington	Apr-04	UT-040788
Kentucky-American Water Company	Kentucky	Apr-04	2004-00103

SPONSOR	JURISDICTION	DATE	DOCKET NO.
MidAmerican Energy	South Dakota	Apr-04	NG4-001
Empire District Electric Company	Missouri	Apr-04	ER-2004-0570
Interstate Power and Light Company	Iowa	Mar-04	RPU-04-01
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Feb-04	
Northern Natural Gas Company	FERC	Feb-04	RP04-155-000
Verizon New Jersey	New Jersey	Jan-04	TO00060356
Verizon	FCC	Jan-04	03-173, FCC 03-224
Verizon	FCC	Dec-03	03-173, FCC 03-224
Verizon California Inc.	California	Nov-03	R93-04-003,I93-04-002
Phillips County Telephone Company	Colorado	Nov-03	03S-315T
North Carolina Rate Bureau (homeowners)	North Carolina Dept. of Insurance	Oct-03	
PG&E Company	FERC	Oct-03	ER04-109-000
Allstate Insurance Company	Texas Department of Insurance	Sep-03	2568
Verizon Northwest Inc.	Washington	Jul-03	UT-023003
Empire District Electric Company	Oklahoma	Jul-03	Case No. PUD 200300121
Verizon Virginia Inc.	FCC	Apr-03	CC-00218,00249,00251
North Carolina Rate Bureau (dwelling fire)	North Carolina Dept. of Insurance	Apr-03	
Northern Natural Gas Company	FERC	Apr-03	RP03-398-000
MidAmerican Energy	Iowa	Apr-03	RPU-03-1, WRU-03-25-156
PG&E Company	FERC	Mar-03	ER03666000
Verizon Florida Inc.	Florida	Feb-03	981834-TP/990321-TP
Verizon North	Indiana	Feb-03	42259
San Diego Gas & Electric	FERC	Feb-03	ER03-601000
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Jan-03	
Gulf Insurance Company	Superior Court, North Carolina	Jan-03	2000-CVS-3558
PG&E Company	FERC	Jan-03	ER03409000
Verizon New England Inc. New Hampshire	New Hampshire	Dec-02	DT 02-110
Verizon Northwest	Washington	Dec-02	UT 020406
PG&E Company	California	Dec-02	
MidAmerican Energy	Iowa	Nov-02	RPU-02-3, 02-8
MidAmerican Energy	Iowa	Nov-02	RPU-02-10
Verizon Michigan	US District Court Eastern District of Michigan	Sep-02	Civil Action No. 00-73208
North Carolina Rate Bureau (workers comp)	North Carolina Dept. of Insurance	Sep-02	
Verizon New England Inc. New Hampshire	New Hampshire	Aug-02	DT 02-110
Interstate Power Company	Iowa Board of Tax Review	Jul-02	832
PG&E Company	California	May-02	A 02-05-022 et al
Verizon New England Inc. Massachusetts	FCC	May-02	EB 02 MD 006
Verizon New England Inc. Rhode Island	Rhode Island	May-02	Docket No. 2681
NEUMEDIA, INC.	US Bankruptcy Court Southern District W. Virginia	Apr-02	Case No. 01-20873
North Carolina Rate Bureau (homeowners)	North Carolina Dept. of Insurance	Mar-02	
MidAmerican Energy Company	Iowa	Mar-02	RPU 02 2
North Carolina Natural Gas Company	North Carolina	Feb-02	G21 Sub 424
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Jan-02	
Verizon Pennsylvania	Pennsylvania	Dec-01	R-00016683
Verizon Florida	Florida	Nov-01	99064B-TP
PG&E Company	FERC	Nov-01	ER0166000
Verizon Delaware	Delaware	Oct-01	96-324 Phase II
Florida Power Corporation	Florida	Sep-01	000824-EL
North Carolina Rate Bureau (workers comp)	North Carolina Dept. of Insurance	Sep-01	
Verizon Washington DC	District of Columbia	Jul-01	962
Verizon Virginia	FCC	Jul-01	CC-00218,00249,00251
Sherburne County Rural Telephone Company	Minnesota	Jul-01	P427/CI-00-712
Verizon New Jersey	New Jersey	Jun-01	TO01020095

SPONSOR	JURISDICTION	DATE	DOCKET NO.
Verizon Maryland	Maryland	May-01	8879
Verizon Massachusetts	Massachusetts	May-01	DTE 01-20
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Apr-01	
PG&E Company	FERC	Mar-01	ER011639000
Maupin Taylor & Ellis P.A.	National Association of Securities Dealers	Jan-01	99-05099
USTA	FCC	Oct-00	RM 10011
Verizon New York	New York	Oct-00	98-C-1357
Verizon New Jersey	New Jersey	Oct-00	TO00060356
PG&E Company	FERC	Oct-00	ER0166000
Verizon New Jersey	New Jersey	Sep-00	TO99120934
North Carolina Rate Bureau (workers comp)	North Carolina Dept. of Insurance	Sep-00	
PG&E Company	California	Aug-00	00-05-018
Verizon New York	New York	Jul-00	98-C-1357
PG&E Company	California	May-00	00-05-013
PG&E Company	FERC	Mar-00	ER00-66-000
PG&E Company	FERC	Mar-00	ER99-4323-000
Bell Atlantic	New York	Feb-00	98-C-1357
USTA	FCC	Jan-00	94-1, 96-262
MidAmerican Energy	Iowa	Nov-99	SPU-99-32
PG&E Company	California	Nov-99	99-11-003
PG&E Company	FERC	Nov-99	ER973255,981261,981685
North Carolina Rate Bureau (workers comp)	North Carolina Dept. of Insurance	Sep-99	
MidAmerican Energy	Illinois	Sep-99	99-0534
PG&E Company	FERC	Sep-99	ER99-4323-000
MidAmerican Energy	FERC	Jul-99	ER99-3887
North Carolina Rate Bureau (homeowners)	North Carolina Dept. of Insurance	Jun-99	
Bell Atlantic	Vermont	May-99	6167
Nevada Power Company	FERC	May-99	
Bell Atlantic, GTE, US West	FCC	Apr-99	CC98-166
Nevada Power Company	Nevada	Apr-99	
Bell Atlantic, GTE, US West	FCC	Mar-99	CC98-166
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Mar-99	
PG&E Company	FERC	Mar-99	ER99-2326-000
MidAmerican Energy	Illinois	Mar-99	099-0310
PG&E Company	FERC	Feb-99	ER99-2358,2087,2351
MidAmerican Energy	US District Court, District of Nebraska	Feb-99	8:97 CV 346
Bell Atlantic, GTE, US West	FCC	Jan-99	CC98-166
The Southern Company	FERC	Jan-99	ER98-1096
Deutsche Telekom	Germany	Nov-98	
Telefonica	Spain	Nov-98	
Cincinnati Bell Telephone Company	Ohio	Oct-98	96899TPALT
MidAmerican Energy	Iowa	Sep-98	RPU 98-5
MidAmerican Energy	South Dakota	Sep-98	NG98-011
MidAmerican Energy	Iowa	Sep-98	SPU 98-8
GTE Florida Incorporated	Florida	Aug-98	980696-TP
GTE North and South	Illinois	Jun-98	960503
GTE Midwest Incorporated	Missouri	Jun-98	TO98329
GTE North and South	Illinois	May-98	960503
MidAmerican Energy	Iowa Board of Tax Review	May-98	835
San Diego Gas & Electric	California	May-98	98-05-024
GTE Midwest Incorporated	Nebraska	Apr-98	C1416
Carolina Telephone	North Carolina	Mar-98	P100Sub133d
GTE Southwest	Texas	Feb-98	18515

SPONSOR	JURISDICTION	DATE	DOCKET NO.
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Feb-98	P100sub133d
Public Service Electric & Gas	New Jersey	Feb-98	PUC734897N,-734797N,BPUEO97070461,-07070462
GTE North	Minnesota	Dec-97	P999/M97909
GTE Northwest	Oregon	Dec-97	UM874
The Southern Company	FERC	Dec-97	ER981096000
GTE North	Pennsylvania	Nov-97	A310125F0002
Bell Atlantic	Rhode Island	Nov-97	2681
GTE North	Indiana	Oct-97	40618
GTE North	Minnesota	Oct-97	P442,407/5321/CI961541
GTE Southwest	New Mexico	Oct-97	96310TC,96344TC
GTE Midwest Incorporated	Iowa	Sep-97	RPU-96-7
North Carolina Rate Bureau (workers)	North Carolina Dept. of Insurance	Sep-97	
GTE Hawaiian Telephone	Hawaii	Aug-97	7702
The Stentor Companies	Canadian Radio-television and Telecommunications Commission	Jul-97	CRTC97-11
New England Telephone	Vermont	Jul-97	5713
Bell-Atlantic-New Jersey	New Jersey	Jun-97	TX95120631
Nevada Bell	Nevada	May-97	96-9035
New England Telephone	Maine	Apr-97	96-781
GTE North, Inc.	Michigan	Apr-97	U11281
Bell Atlantic-Virginia	Virginia	Apr-97	970005
Cincinnati Bell Telephone	Ohio	Feb-97	96899TPALT
Bell Atlantic - Pennsylvania	Pennsylvania	Feb-97	A310203,213,236,258F002
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Feb-97	
Bell Atlantic-Washington, D.C.	District of Columbia	Jan-97	962
Pacific Bell, Sprint, US West	FCC	Jan-97	CC 96-45
United States Telephone Association	FCC	Jan-97	CC 96-262
Bell Atlantic-Maryland	Maryland	Jan-97	8731
Bell Atlantic-West Virginia	West Virginia	Jan-97	961516, 1561, 1009TPC,961533TT
Poe, Hoof, & Reinhardt	Durham Cnty Superior Court Kountis vs. Circle K	Jan-97	95CVS04754
Bell Atlantic-Delaware	Delaware	Dec-96	96324
Bell Atlantic-New Jersey	New Jersey	Nov-96	TX95120631
Carolina Power & Light Company	FERC	Nov-96	OA96-198-000
New England Telephone	Massachusetts	Oct-96	DPU 96-73/74,-75, -80/81, -83, -94
New England Telephone	New Hampshire	Oct-96	96-252
Bell Atlantic-Virginia	Virginia	Oct-96	960044
Citizens Utilities	Illinois	Sep-96	96-0200, 96-0240
Union Telephone Company	New Hampshire	Sep-96	95-311
Bell Atlantic-New Jersey	New Jersey	Sep-96	TO-96070519
New York Telephone	New York	Sep-96	95-C-0657, 94-C-0095,91-C-1174
North Carolina Rate Bureau (workers comp)	North Carolina Dept. of Insurance	Sep-96	
MidAmerican Energy Company	Illinois	Sep-96	96-0274
MidAmerican Energy Company	Iowa	Sep-96	RPU96-8
United States Telephone Association	FCC	Mar-96	AAD-96.28
United States Telephone Association	FCC	Mar-96	CC 94-1 PhaseIV
Bell Atlantic - Maryland	Maryland	Mar-96	8715
Nevada Bell	Nevada	Mar-96	96-3002
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Mar-96	
Carolina Tel. and Telegraph Co, Central Tel Co	North Carolina	Feb-96	P7 sub 825, P10 sub 479
Oklahoma Rural Telephone Coalition	Oklahoma	Oct-95	PUD950000119
BellSouth	Tennessee	Oct-95	95-02614
Wake County, North Carolina	US District Court, Eastern Dist. NC	Oct-95	594CV643H2
Bell Atlantic - District of Columbia	District of Columbia	Sep-95	814 Phase IV

SPONSOR	JURISDICTION	DATE	DOCKET NO.
South Central Bell Telephone Company	Tennessee	Aug-95	95-02614
GTE South	Virginia	Jun-95	95-0019
Roseville Telephone Company	California	May-95	A.95-05-030
Bell Atlantic - New Jersey	New Jersey	May-95	TX94090388
Cincinnati Bell Telephone Company	Ohio	May-95	941695TPACE
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	May-95	727
Northern Illinois Gas	Illinois	May-95	95-0219
South Central Bell Telephone Company	Kentucky	Apr-95	94-121
Midwest Gas	South Dakota	Mar-95	
Virginia Natural Gas, Inc.	Virginia	Mar-95	PUE940054
Hope Gas, Inc.	West Virginia	Mar-95	95-0003G42T
The Peoples Natural Gas Company	Pennsylvania	Feb-95	R-943252
and Coke Co., North Shore Gas, Iowa-Illinois Gas	Illinois	Jan-95	94-0403
and Electric, Central Illinois Public Service,	Illinois	Jan-95	94-0403
Northern Illinois Gas, The Peoples Gas, Light	Illinois	Jan-95	94-0403
United Cities Gas, and Interstate Power	Illinois	Jan-95	94-0403
Cincinnati Bell Telephone Company	Kentucky	Oct-94	94-355
Midwest Gas	Nebraska	Oct-94	
Midwest Power	Iowa	Sep-94	RPU-94-4
Bell Atlantic	FCC	Aug-94	CS 94-28, MM 93-215
Midwest Gas	Iowa	Jul-94	RPU-94-3
Bell Atlantic	FCC	Jun-94	CC 94-1
Nevada Power Company	Nevada	Jun-94	93-11045
Cincinnati Bell Telephone Company	Ohio	Mar-94	93-551-TP-CSS
Cincinnati Bell Telephone Company	Ohio	Mar-94	93-432-TP-ALT
GTE South/Contel	Virginia	Feb-94	PUC9300036
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Feb-94	689
Bell of Pennsylvania	Pennsylvania	Jan-94	P930715
GTE South	South Carolina	Jan-94	93-504-C
United Telephone-Southeast	Tennessee	Jan-94	93-04818
C&P of VA, GTE South, Contel, United Tel. SE	Virginia	Sep-93	PUC920029
Bell Atlantic, NYNEX, Pacific Companies	FCC	Aug-93	MM 93-215
C&P, Centel, Contel, GTE, & United	Virginia	Aug-93	PUC920029
Chesapeake & Potomac Tel Virginia	Virginia	Aug-93	93-00-
GTE North	Illinois	Jul-93	93-0301
Midwest Power	Iowa	Jul-93	INU-93-1
Midwest Power	South Dakota	Jul-93	EL93-016
Chesapeake & Potomac Tel. Co. DC	District of Columbia	Jun-93	926
Cincinnati Bell	Ohio	Jun-93	93432TPALT
North Carolina Rate Bureau (dwelling fire)	North Carolina Dept. of Insurance	Jun-93	671
North Carolina Rate Bureau (homeowners)	North Carolina Dept. of Insurance	Jun-93	670
Pacific Bell Telephone Company	California	Mar-93	92-05-004
Minnesota Independent Equal Access Corp.	Minnesota	Mar-93	P3007/GR931
South Central Bell Telephone Company	Tennessee	Feb-93	92-13527
South Central Bell Telephone Company	Kentucky	Dec-92	92-523
Southern New England Telephone Company	Connecticut	Nov-92	92-09-19
Chesapeake & Potomac Tel. Co.CDC	District of Columbia	Nov-92	814
Diamond State Telephone Company	Delaware	Sep-92	PSC 92-47
New Jersey Bell Telephone Company	New Jersey	Sep-92	TO-92030958
Allstate Insurance Company	New Jersey Dept. of Insurance	Sep-92	INS 06174-92
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Aug-92	650
North Carolina Rate Bureau (workers' comp)	North Carolina Dept. of Insurance	Aug-92	647
Midwest Gas Company	Minnesota	Aug-92	G010/GR92710

SPONSOR	JURISDICTION	DATE	DOCKET NO.
Pennsylvania-American Water Company	Pennsylvania	Jul-92	R-922428
Central Telephone Co. of Florida	Florida	Jun-92	920310-TL
C&P of VA, GTE South, Contel, United Tel. SE	Virginia	Jun-92	PUC920029
Chesapeake & Potomac Tel. Co. Maryland	Maryland	May-92	8462
Pacific Bell Telephone Company	California	Apr-92	92-05-004
Iowa Power Inc.	Iowa	Mar-92	RPU-92-2
Contel of Texas	Texas	Feb-92	10646
Southern Bell Telephone Company	Florida	Jan-92	880069-TL
Nevada Power Company	Nevada	Jan-92	92-1067
GTE South	Georgia	Dec-91	4003-U
GTE South	Georgia	Dec-91	4110-U
Allstate Insurance Company (property)	Texas Dept. of Insurance	Dec-91	1846
IPS Electric	Iowa	Oct-91	RPU-91-6
GTE South	Tennessee	Aug-91	91-05738
North Carolina Rate Bureau (workers' comp)	North Carolina Dept. of Insurance	Aug-91	609
Midwest Gas Company	Iowa	Jul-91	RPU-91-5
Pennsylvania-American Water Company	Pennsylvania	Jun-91	R-911909
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Jun-91	606
Allstate Insurance Company	California Dept. of Insurance	May-91	RCD-2
Nevada Power Company	Nevada	May-91	91-5055
Kentucky Power Company	Kentucky	Apr-91	91-066
Chesapeake & Potomac Tel. Co.CD.C.	District of Columbia	Feb-91	850
Allstate Insurance Company	New Jersey Dept. of Insurance	Jan-91	INS-9536-90
GTE South	South Carolina	Nov-90	90-698-C
Southern Bell Telephone Company	Florida	Oct-90	880069-TL
GTE South	West Virginia	Aug-90	90-522-T-42T
North Carolina Rate Bureau (workers' comp)	North Carolina Dept. of Insurance	Aug-90	R90-08-
The Travelers Indemnity Company	Pennsylvania Dept. of Insurance	Aug-90	R-90-06-23
Chesapeake & Potomac Tel. Co.-Maryland	Maryland	Jul-90	8274
Allstate Insurance Company	Pennsylvania Dept. of Insurance	Jul-90	R90-07-01
Central Tel. Co. of Florida	Florida	Jun-90	89-1246-TL
Citizens Telephone Company	North Carolina	Jun-90	P-12, SUB 89
North Carolina Rate Bureau (auto)	North Carolina Dept. of Insurance	Jun-90	568
Iowa Resources, Inc. and Midwest Energy	Iowa	Jun-90	SPU-90-5
Contel of Illinois	Illinois	May-90	90-0128
Southern New England Tel. Co.	Connecticut	Apr-90	89-12-05
Bell Atlantic	FCC	Apr-90	89-624 II
Pennsylvania-American Water Company	Pennsylvania	Mar-90	R-901652
Bell Atlantic	FCC	Feb-90	89-624
GTE South	Tennessee	Jan-90	
Allstate Insurance Company	California Dept. of Insurance	Jan-90	REB-1002
Bell Atlantic	FCC	Nov-89	87-463 II
Allstate Insurance Company	California Dept. of Insurance	Sep-89	REB-1006
Pacific Bell	California	Mar-89	87-11-0033
Iowa Power & Light	Iowa	Dec-88	RPU-88-10
Pacific Bell	California	Oct-88	88-05-009
Southern Bell	Florida	Apr-88	880069TL
Carolina Independent Telcos.	North Carolina	Apr-88	P-100, Sub 81
United States Telephone Association	U. S. Congress	Apr-88	
Carolina Power & Light	South Carolina	Mar-88	88-11-E
New Jersey Bell Telephone Co.	New Jersey	Feb-88	87050398
Carolina Power & Light	FERC	Jan-88	ER-88-224-000
Carolina Power & Light	North Carolina	Dec-87	E-2, Sub 537

SPONSOR	JURISDICTION	DATE	DOCKET NO.
Bell Atlantic	FCC	Nov-87	87-463
Diamond State Telephone Co.	Delaware	Jul-87	86-20
Central Telephone Co. of Nevada	Nevada	Jun-87	87-1249
ALLTEL	Florida	Apr-87	870076-PU
Southern Bell	Florida	Apr-87	870076-PU
Carolina Power & Light	North Carolina	Apr-87	E-2, Sub 526
So. New England Telephone Co.	Connecticut	Mar-87	87-01-02
Northern Illinois Gas Co.	Illinois	Mar-87	87-0032
Bell of Pennsylvania	Pennsylvania	Feb-87	860923
Carolina Power & Light	FERC	Jan-87	ER-87-240-000
Bell South	NTIA	Dec-86	61091-619
Heins Telephone Company	North Carolina	Oct-86	P-26, Sub 93
Public Service Co. of NC	North Carolina	Jul-86	G-5, Sub 207
Bell Atlantic	FCC	Feb-86	84-800 III
BellSouth	FCC	Feb-86	84-800 III
ALLTEL Carolina, Inc	North Carolina	Feb-86	P-118, Sub 39
ALLTEL Georgia, Inc.	Georgia	Jan-86	3567-U
ALLTEL Ohio	Ohio	Jan-86	86-60-TP-AIR
Western Reserve Telephone Co.	Ohio	Jan-86	85-1973-TP-AIR
New England Telephone & Telegraph	Maine	Dec-85	
ALLTEL-Florida	Florida	Oct-85	850064-TL
Iowa Southern Utilities	Iowa	Oct-85	RPU-85-11
Bell Atlantic	FCC	Sep-85	84-800 II
Pacific Telesis	FCC	Sep-85	84-800 II
Pacific Bell	California	Apr-85	85-01-034
United Telephone Co. of Missouri	Missouri	Apr-85	TR-85-179
South Carolina Generating Co.	FERC	Apr-85	85-204
South Central Bell	Kentucky	Mar-85	9160
New England Telephone & Telegraph	Vermont	Mar-85	5001
Chesapeake & Potomac Telephone Co.	West Virginia	Mar-85	84-747
Chesapeake & Potomac Telephone Co.	Maryland	Jan-85	7851
Central Telephone Co. of Ohio	Ohio	Dec-84	84-1431-TP-AIR
Ohio Bell	Ohio	Dec-84	84-1435-TP-AIR
Carolina Power & Light Co.	FERC	Dec-84	ER85-184000
BellSouth	FCC	Nov-84	84-800 I
Pacific Telesis	FCC	Nov-84	84-800 I
New Jersey Bell	New Jersey	Aug-84	848-856
Southern Bell	South Carolina	Aug-84	84-308-C
Pacific Power & Light Co.	Montana	Jul-84	84.73.8
Carolina Power & Light Co.	South Carolina	Jun-84	84-122-E
Southern Bell	Georgia	Mar-84	3465-U
Carolina Power & Light Co.	North Carolina	Feb-84	E-2, Sub 481
Southern Bell	North Carolina	Jan-84	P-55, Sub 834
South Carolina Electric & Gas	South Carolina	Nov-83	83-307-E
Empire Telephone Co.	Georgia	Oct-83	3343-U
Southern Bell	Georgia	Aug-83	3393-U
Carolina Power & Light Co.	FERC	Aug-83	ER83-765-000
General Telephone Co. of the SW	Arkansas	Jul-83	83-147-U
Heins Telephone Co.	North Carolina	Jul-83	No.26 Sub 88
General Telephone Co. of the NW	Washington	Jul-83	U-82-45
Leeds Telephone Co.	Alabama	Apr-83	18578
General Telephone Co. of California	California	Apr-83	83-07-02
North Carolina Natural Gas	North Carolina	Apr-83	G21 Sub 235
Carolina Power & Light	South Carolina	Apr-83	82-328-E

SPONSOR	JURISDICTION	DATE	DOCKET NO.
Eastern Illinois Telephone Co.	Illinois	Feb-83	83-0072
Carolina Power & Light	North Carolina	Feb-83	E-2 Sub 461
New Jersey Bell	New Jersey	Dec-82	8211-1030
Southern Bell	Florida	Nov-82	820294-TP
United Telephone of Missouri	Missouri	Nov-82	TR-83-135
Central Telephone Co. of NC	North Carolina	Nov-82	P-10 Sub 415
Concord Telephone Company	North Carolina	Nov-82	P-16 Sub 146
Carolina Telephone & Telegraph	North Carolina	Aug-82	P-7, Sub 670
Central Telephone Co. of Ohio	Ohio	Jul-82	82-636-TP-AIR
Southern Bell	South Carolina	Jul-82	82-294-C
General Telephone Co. of the SW	Arkansas	Jun-82	82-232-U
General Telephone Co. of Illinois	Illinois	Jun-82	82-0458
General Telephone Co. of the SW	Oklahoma	Jun-82	27482
Empire Telephone Co.	Georgia	May-82	3355-U
Mid-Georgia Telephone Co.	Georgia	May-82	3354-U
General Telephone Co. of the SW	Texas	Apr-82	4300
General Telephone Co. of the SE	Alabama	Jan-82	18199
Carolina Power & Light Co.	South Carolina	Jan-82	81-163-E
Elmore-Coosa Telephone Co.	Alabama	Nov-81	18215
General Telephone Co. of the SE	North Carolina	Sep-81	P-19, Sub 182
United Telephone Co. of Ohio	Ohio	Sep-81	81-627-TP-AIR
General Telephone Co. of the SE	South Carolina	Sep-81	81-121-C
Carolina Telephone & Telegraph	North Carolina	Aug-81	P-7, Sub 652
Southern Bell	North Carolina	Aug-81	P-55, Sub 794
Woodbury Telephone Co.	Connecticut	Jul-81	810504
Central Telephone Co. of Virginia	Virginia	Jun-81	810030
United Telephone Co. of Missouri	Missouri	May-81	TR-81-302
General Telephone Co. of the SE	Virginia	Apr-81	810003
New England Telephone	Vermont	Mar-81	4546
Carolina Telephone & Telegraph	North Carolina	Aug-80	P-7, Sub 652
Southern Bell	North Carolina	Aug-80	P-55, Sub 784
General Telephone Co. of the SW	Arkansas	Jun-80	U-3138
General Telephone Co. of the SE	Alabama	May-80	17850
Southern Bell	North Carolina	Oct-79	P-55, Sub 777
Southern Bell	Georgia	Mar-79	3144-U
General Telephone Co. of the SE	Virginia	Mar-76	810038
General Telephone Co. of the SW	Arkansas	Feb-76	U-2693, U-2724
General Telephone Co. of the SE	Alabama	Sep-75	17058
General Telephone Co. of the SE	South Carolina	Jun-75	D-18269

EXHIBIT 19
APPENDIX 2
ESTIMATING THE EXPECTED RISK PREMIUM
ON UTILITY STOCKS USING THE DCF MODEL

The DCF model is based on the assumption that investors value an asset on the basis of the future cash flows they expect to receive from owning the asset. Thus, investors value an investment in a bond because they expect to receive a sequence of semi-annual coupon payments over the life of the bond and a terminal payment equal to the bond's face value at the time the bond matures. Likewise, investors value an investment in a firm's stock because they expect to receive a sequence of dividend payments and, perhaps, expect to sell the stock at a higher price sometime in the future.

A second fundamental principle of the DCF method is that investors value a dollar received in the future less than a dollar received today. A future dollar is valued less than a current dollar because investors could invest a current dollar in an interest earning account and increase their wealth. This principle is called the time value of money.

Applying the two fundamental DCF principles noted above to an investment in a bond leads to the conclusion that investors value their investment in the bond on the basis of the present value of the bond's future cash flows. Thus, the price of the bond should be equal to:

EQUATION 1

$$P_B = \frac{C}{(1+i)} + \frac{C}{(1+i)^2} + \ldots + \frac{C+F}{(1+i)^n}$$

where:

P_B = Bond price;

C = Cash value of the coupon payment (assumed for notational convenience to occur annually rather than semi-annually);

F = Face value of the bond;

i = The rate of interest the investor could earn by investing his money in an alternative bond of equal risk; and

n = The number of periods before the bond matures.

Applying these same principles to an investment in a firm's stock suggests that the price of the stock should be equal to:

EQUATION 2

$$P_s = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_n + P_n}{(1+k)^n}$$

where:

P_S = Current price of the firm's stock;

$D_1, D_2 \ldots D_n$ = Expected annual dividend per share on the firm's stock;

P_n = Price per share of stock at the time the investor expects to sell the stock; and

k = Return the investor expects to earn on alternative investments of the same risk, i.e., the investor's required rate of return.

Equation (2) is frequently called the annual discounted cash flow model of stock valuation. Assuming that dividends grow at a constant annual rate, *g*, this equation can be solved for *k*, the cost of equity. The resulting cost of equity equation is $k = D_1/P_s + g$, where *k* is the cost of equity, D_1 is the expected next period annual dividend, P_s is the current price of the stock, and *g* is the constant annual growth rate in earnings, dividends, and book value per share. The term D_1/P_s is called the dividend yield component of the annual DCF model, and the term *g* is called the growth component of the annual DCF model.

The annual DCF model is only a correct expression for the present value of future dividends if dividends are paid annually at the end of each year. Since most industrial and utility firms pay dividends quarterly, the annual DCF model produces downwardly biased estimates of the cost of equity. Investors can expect to earn a higher annual

effective return on an investment in a firm that pays quarterly dividends than in one which pays the same amount of dollar dividends once at the end of each year.

The Dividend Component

The quarterly DCF model requires an estimate of the expected dividends for the next four quarters. I estimated the expected dividends for the next four quarters by multiplying the actual dividends for the last four quarters by the factor, (1 + the growth rate, g).

The Growth Component

To estimate the growth component of the DCF model, I used the analysts' estimates of future earnings per share (EPS) growth reported by I/B/E/S Thomson Financial. As part of their research, financial analysts working at Wall Street firms periodically estimate EPS growth for each firm they follow. The EPS forecasts for each firm are then published. Investors who are contemplating purchasing or selling shares in individual companies review the forecasts. These estimates represent five-year forecasts of EPS growth. I/B/E/S is a firm that reports analysts' EPS growth forecasts for a broad group of companies. The forecasts are expressed in terms of a mean forecast and a standard deviation of forecast for each firm. Investors use the mean forecast as a consensus estimate of future firm performance. The I/B/E/S growth rates: (1) are widely circulated in the financial community, (2) include the projections of reputable financial analysts who develop estimates of future EPS growth, (3) are reported on a timely basis to investors, and (4) are widely used by institutional and other investors.

I relied on analysts' projections of future EPS growth because there is considerable empirical evidence that investors use analysts' forecasts to estimate future earnings growth. To test whether investors use analysts' growth forecasts to estimate future dividend and earnings growth, I prepared a study in conjunction with Willard T. Carleton, Karl Eller Professor of Finance at the University of Arizona, on why analysts' forecasts are the best estimate of investors' expectation of future long-term growth. This study is described in a paper entitled "Investor Growth Expectations and Stock Prices: the Analysts versus Historical Growth Extrapolation," published in the Spring 1988 edition of *The Journal of Portfolio Management*.

In our paper, we describe how we first performed a correlation analysis to identify the historically-oriented growth rates which best described a firm's stock price. Then we

did a regression study comparing the historical growth rates with the consensus analysts' forecasts. In every case, the regression equations containing the average of analysts' forecasts statistically outperformed the regression equations containing the historical growth estimates. These results are consistent with those found by Cragg and Malkiel, the early major research in this area (John G. Cragg and Burton G. Malkiel, *Expectations and the Structure of Share Prices*, University of Chicago Press, 1982). These results are also consistent with the hypothesis that investors use analysts' forecasts, rather than historically-oriented growth calculations, in making stock buy and sell decisions. They provide overwhelming evidence that the analysts' forecasts of future growth are superior to historically-oriented growth measures in predicting a firm's stock price.

My study has been updated to include more recent data. Researchers at State Street Financial Advisors updated my study using data through year-end 2003. Their results continue to confirm that analysts' growth forecasts are superior to historically-oriented growth measures in predicting a firm's stock price.

The Price Component

To measure the price component of the DCF model, I used a simple average of the monthly high and low stock prices for each firm over a three-month period. These high and low stock prices were obtained from Thomson Financial. I used the three-month average stock price in applying the DCF method because stock prices fluctuate daily, while financial analysts' forecasts for a given company are generally changed less frequently, often on a quarterly basis. Thus, to match the stock price with an earnings forecast, it is appropriate to average stock prices over a three-month period.

EXHIBIT 20
APPENDIX 3
THE SENSITIVITY OF THE FORWARD-LOOKING
REQUIRED EQUITY RISK PREMIUM ON UTILITY STOCKS
TO CHANGES IN INTEREST RATES

My estimate of the required equity risk premium on utility stocks is based on studies of the discounted cash flow ("DCF") expected return on comparable groups of utilities in each month of my study period compared to the interest rate on long-term government bonds. Specifically, for each month in my study period, I calculate the risk premium using the equation

$$RP_{COMP} = DCF_{COMP} - I_B$$

where:

RP_{COMP} = the required risk premium on an equity investment in the comparable companies,

DCF_{COMP} = average DCF expected rate of return on a portfolio of comparable companies; and

I_B = the yield to maturity on an investment in long-term U.S. Treasury bonds.

Electric Company Ex Ante Risk Premium Analysis. For my electric company ex ante risk premium analysis, I began with the Moody's group of twenty-four electric utilities shown in Table 1 below. I use the Moody's group of electric utilities because they are a widely followed group of electric utilities, and use of this constant group greatly simplifies the data collection task required to estimate the ex ante risk premium over the months of my study. Simplifying the data collection task is desirable because the ex ante risk premium approach requires that the DCF model be estimated for every company in every month of the study period. Exhibit 7 displays the average DCF expected return on an investment in the portfolio of electric utilities and the yield to maturity on long-term Treasury bonds in each month of the study.

Previous studies have shown that the ex ante risk premium tends to vary inversely with the level of interest rates, that is, the risk premium tends to increase when interest rates decline, and decrease when interest rates go up. To test whether my studies also indicate that the ex ante risk premium varies inversely with the level of interest rates, I perform a

regression analysis of the relationship between the ex ante risk premium and the yield to maturity on long-term Treasury bonds, using the equation,

$$RP_{COMP} = a + (b \times I_B) + e$$

where:

RP_{COMP} = risk premium on comparable company group;

I_B = yield to maturity on long-term U.S. Treasury bonds;

e = a random residual; and

a, b = coefficients estimated by the regression procedure.

Regression analysis assumes that the statistical residuals from the regression equation are random. My examination of the residuals reveals that there is a significant probability that the residuals are serially correlated (non-zero serial correlation indicates that the residual in one time period tends to be correlated with the residual in the previous time period). Therefore, I make adjustments to my data to correct for the possibility of serial correlation in the residuals.

The common procedure for dealing with serial correlation in the residuals is to estimate the regression coefficients in two steps. First, a multiple regression analysis is used to estimate the serial correlation coefficient, *r*. Second, the estimated serial correlation coefficient is used to transform the original variables into new variables whose serial correlation is approximately zero. The regression coefficients are then re-estimated using the transformed variables as inputs in the regression equation. Based on my regression analysis of the statistical relationship between the yield to maturity on long-term Treasury bonds and the required risk premium, my estimate of the ex ante risk premium on an investment in my proxy electric company group as compared to an investment in long-term Treasury bonds is given by the equation:

$$RP_{COMP} = \underset{(13.25)}{10.40} - \underset{(-7.53)}{.892 \times I_B}$$ [8].

This equation suggests that the ex ante risk premium on electric utility stocks increases by eighty-nine basis points when the interest rate on long-term Treasury bonds declines by one hundred basis points. Equivalently, this regression equation suggests that the cost of equity for electric utilities declines by significantly less than fifty basis points when the interest rate on long-term Treasury bonds declines by one hundred basis points. These data suggest that

[8] The t-statistics are shown in parentheses.

the ROE Formula, which assumes that the cost of equity declines by eighty basis points when the yield to maturity on long Canada bonds declines by one hundred basis points, is not appropriate for estimating the cost of equity.

Using the November 2011 forecast 3.06 percent yield to maturity on long-term Canada bonds obtained from Consensus Economics, the regression equation produces an ex ante risk premium equal to 7.67 percent (10.4 – .892 x 3.06 = 7.67).

As described above, my ex ante risk premium regression analysis indicates that the cost of equity for utilities is significantly less sensitive to interest rate changes than the ROE Formula implies. Rather than declining by eighty basis points when the yield to maturity on long-term government bonds declines by one hundred basis points, my analysis indicates that the cost of equity declines by significantly less than fifty basis points when interest rates decline by one hundred basis points.

TABLE 1
MOODY'S ELECTRIC UTILITIES

American Electric Power
Constellation Energy
Progress Energy
CH Energy Group
Cinergy Corp.
Consolidated Edison Inc.
DPL Inc.
DTE Energy Co.
Dominion Resources Inc.
Duke Energy Corp.
Energy East Corp.
FirstEnergy Corp.
Reliant Energy Inc.
IDACORP. Inc.
IPALCO Enterprises Inc.
NiSource Inc.
OGE Energy Corp.
Exelon Corp.
PPL Corp.
Potomac Electric Power Co.
Public Service Enterprise Group
Southern Company
Teco Energy Inc.
Xcel Energy Inc.

Source of data: *Mergent Public Utility Manual*, August 2002. Of these twenty-four companies, I do not include utilities in my ex ante risk premium analysis in the months in which there are insufficient data to perform a DCF analysis. In addition, since the beginning period of my study, several companies have disappeared through mergers and acquisitions.