NEWFOUNDLAND AND LABRADOR
BOARD OF COMMISSIONERS
OF PUBLIC UTILITIES

TESTIMONY ON THE COST OF CAPITAL, CAPITAL STRUCTURE, AND THE AUTOMATIC ADJUSTMENT FORMULA IN REGARD TO THE NEWFOUNDLAND POWER 2007 GENERAL RATE APPLICATION

TESTIMONY OF DR. WILLIAM T. CANNON
ON BEHALF OF THE CONSUMER ADVOCATE

August 3, 2007

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GLOSSARY OF ABBREVIATIONS, TERMS, AND EXPRESSIONS

arithmetic mean = a measure of the average value found by summing all the observed values and dividing by the number of observations.

beta = a stock-market-performance-based measure of the relative investment riskiness of corporate shares; beta measures the degree to which a particular stock's returns are influenced by general stock market movements; it is a measure of systematic investment risk.

bps = basis points; one basis point (bp) equals $1/100^{th}$ of one percent, or 100 bps = 1.00%

business risk = the degree of uncertainty inherent in a company's operations due to the nature of its products and markets, its asset structure, the production and distribution technology it employs, its operating policies, its geographic location and associated geopolitical risks, etc.

CAPM = capital asset pricing model; a theoretical model for explaining and estimating the returns on, and valuations of, financial assets.

CE = Comparable Earnings; an equity-return-estimation test based on comparisons with the accounting return performance of companies perceived to be of comparable risk.

DCF = Discounted Cash Flow; a stock valuation model from which an equity-return-estimation test is derived.

DPS = dividends per share.

EPS = earnings per share; calculated as the earnings available to common shareholders, after preferred dividends have been paid, divided by the average number of common shares outstanding during the period.

ERP = Equity Risk Premium; an approach to determining the required return on a stock by estimating the additional rate of return, above the riskfree rate, (i.e., the ERP) that investors require to compensate for the investment risk of a particular stock.

financial risk = is defined analytically as the additional uncertainty or variability in a firm's cashflow and income streams, above and beyond the uncertainty or variability associated with the firm's business risk characteristics, that is introduced through the firm's choice and implementation of its financing policies – in particular, the use of fixed-cost, senior securities within its capital structure.

geometric mean	= a measure of the (compound) average value found by compounding n period-by-period values and then finding the nth root of the compounded amount.
LDC	= local distribution company
long run	= usually a period of time that covers multiple business cycles, often a quarter of a century or more.
long-term	= with respect to a debt security, usually implies a security with more than 10 years remaining until its maturity date.
maturity risk premium	= the addition expected rate of return required on a long-term debt security, above the riskfree rate, to compensate for the price volatility (or capital value) risk facing holders of the security.
mean	= another way of saying "arithmetic average."
median	= the middle value in a sequenced or ranked set of observations.
MRP	= Market Risk Premium; the additional rate of return, above the riskfree rate, that investors require to compensate for the investment risk associated with the overall stock market (usually proxied by some market index such as the S&P/TSX Composite Index of Canadian shares).
MV/BV	= the market-value-to-book-value ratio for the shares of a company, measured on an aggregate or per share basis.
n.a.	= not available.
p.a.	= per annum
% p.a.	= percentage rate per annum
regulatory risk	= one particular component of business risk for firms in regulated industries; reflects ex ante uncertainty on the part of managers and investors with respect to the decisions that regulators will make; there is no numerical measure for this aspect of risk.
riskfree rate	= the rate of return, or interest rate, required by investors to invest in a security that has no investment risk associated with it (that is, no credit or default risk and no price volatility or income uncertainty risk) and where, as result, the nominal dollar rate of return is known with certainty at the initial time of investment.

ROCE = Return on Common Equity; measured as the ratio of (i) the earnings available to common shareholders after preferred dividends have been paid and (ii) the average book value of the firm's common equity (including retained earnings) during the period; used interchangeably with ROE.

ROE = Return On Equity; used interchangeably with ROCE.

SD = standard deviation; a standard statistical measure for the spread or dispersion of a set of actual observations around the mean (average) of the observed values.

SD(r) = the standard deviation of investment rates of return over some time period (often 60 months); a measure of the total investment risk of a security.

SD(ROCE) = the standard deviation of a time series of observed company ROCEs; it measures the degree of variability around the average ROCE for some period; it is interpreted as a risk measure on the implicit assumption that investors look at past average ROCE values as their best estimate of likely future ROCE values.

SEE = standard error of estimate; a statistical measure of the extent to which observed values for some variable deviate from their predicted values.

SEE(ROCE)= the standard error of estimate of a time series of observed company ROCEs; it measures the degree of variability around the trend line ROCE values during the period; it is interpreted as a risk measure on the implicit assumption that investors forecast future ROCE values by simply extrapolating past observed trends.

systematic risk = those business and financial risks which are faced simultaneously by most firms in the economy by virtue of the fact that most firms are tied into the general economy at least to some extent; often measured on a relative basis by the beta coefficient.

total risk = the sum of both business and financial risk; with respect to accounting returns, usually measured by SD(ROCE) and/or SEE(ROCE).

total investment risk = the entire risk or uncertainty associated with owning/holding a security resulting from both systematic and unsystematic sources of risk; usually measured by SD(r).

unsystematic risk = those sources of uncertainty for a firm's management and shareholders which are specific or unique to that firm or that firm's industry.

TESTIMONY OF DR. WILLIAM T. CANNON

I. INTRODUCTION AND SUMMARY OF CONCLUSIONS

Q: Please state your name, profession, and employment.

A: My name is William T. Cannon. I am Chair of the Faculty Board and the Commerce '83 Teaching Fellow in Finance at the Queen's University School of Business in Kingston, Ontario. I am also Chair of the Pension Committee of the Board of Trustees at Queen's University. I have been teaching finance courses at Queen's for the past 33 years. I received my Ph.D. in Business Economics from Harvard University in June 1976. A summary of my background and qualifications appears in Appendix A.

Q: What experience do you have testifying before Canadian regulatory boards and advising participants in regulatory proceedings?

A: I have presented written and oral rate-of-return and capital structure evidence before Canadian regulatory boards for the past 26 years. I have advised the Ontario Energy Board Staff and Special Counsel, and appeared before the Ontario Energy Board ("OEB"), in numerous Enbridge/Consumers' Gas and Union Gas rate hearings since January 1982, as well as in the 1989 Tecumseh Gas Storage, the 1996 Centra Gas Ontario, and the 1999 Ontario Hydro Services Company rate hearings. On behalf of the British Columbia Petroleum Corporation ("BCPC") and CanWest Gas Supply Inc., I presented evidence before the National Energy Board ("NEB") in four Westcoast Energy rate hearings between 1983 and 1990. I have testified on behalf of the Ontario Ministry of Environment and Energy (the "Ministry") before the NEB in the 1991 TransCanada PipeLines ("TCPL") rate hearing, advised the Ministry in connection with the NEB's 1993 Inter-Coastal PipeLine and TCPL hearings, testified on behalf of the Ministry and the Industrial Gas Users Association in the NEB's 1994 Multi-Pipeline Cost of Capital Hearing (RH-2-94), and advised the Ministry in connection with the proposed revision of the Undertakings of the Ontario gas distribution utilities to facilitate their diversification into non-gas-utility

businesses. I also testified in several Pacific Northern Gas rate hearings before the British Columbia Utilities Commission during the 1980s and advised the BCPC in connection with the 1986 Inland Natural Gas rate hearing. Finally, and most recently, I testified before the Newfoundland and Labrador Board of Commissioners of Public Utilities (the "Board") in the Newfoundland & Labrador Hydro ("Hydro") 2006 General Rate Application.

In June 2003, at the requested of the OEB Staff, I presented written evidence as part of the OEB's Review of its *1997 Draft Guidelines on a Formula-Based Return on Common Equity*. These Guidelines include procedures for an annual automatic adjustment of gas distribution utility allowed equity returns during years when there is no general cost of capital hearing.

In addition to participating in rate hearings, I have also assisted the OEB in connection with a number of its other responsibilities. During the 1984-1986 period, I was engaged by OEB Staff to examine and present evidence in the hearings that were called to consider (a) Inter-City Gas' takeover of Northern and Central Gas, (b) Unicorp Canada's takeover of Union Enterprises Limited, and (c) Gulf Canada's indirect acquisition of Consumers' Gas shares. In the fall of 1989, I testified on behalf of OEB Staff in the Westcoast-ICG(Ontario) change-of-control hearing, and in the summer of 1990 I testified before the Board in the hearing convened to consider British Gas' proposed acquisition of a controlling interest in Consumers' Gas. During the latter part of 1992, I advised OEB Staff in connection with Westcoast Energy's takeover of Union Energy.

More recently, at the request of OEB Staff, I have advised the OEB in connection with the restructuring of the regulation of Ontario's municipal electric utilities ("MEUs"). These involvements have included the design of a performance-based rate-regulatory ("PBR") regime, the establishment of appropriate cost of capital and capital structure parameters to employ within the MEUs' PBR framework, and formulation of the filing guidelines for applications for mergers, acquisitions, amalgamations and divestitures among Ontario's MEUs, pursuant to the OEB's adjudication of these applications.

Q: What is the purpose of the evidence you are now presenting?

A: I have been retained by the Consumer Advocate of Newfoundland and Labrador to evaluate, and provide an opinion on, the appropriateness of Newfoundland Power Inc.'s ("NP") proposals regarding its capital structure and its allowed return on equity for the 2008 test year, as well as the design and operation of its automatic adjustment mechanism for years beyond the test year.

Q: Please summarize by section the major findings and conclusions of your testimony.

A: In Section II of my evidence, I examine the current and prospective economic and financial market conditions for Canada and for Newfoundland and Labrador. I conclude that annualized real growth in the Canadian economy for the 2008 test year is likely to be in the range of 2.5% to 3.2% – a slight improvement from the 2.6% pace expected for the latter half of 2007. Newfoundland and Labrador is expected to have the fastest real growth rate among the provinces for 2007 – on the backs of expanded offshore oil output and healthy nickel production – but then retreat to a modest 0.5%-to-1.2% real GDP growth rate for 2008 and continue to grow slowly for the following several years.

The Canadian total CPI inflation rate, currently running at a 2.2% annual pace, is forecasted to rise to an annual rate of 3.0% by the end of 2007 before easing back to the Bank of Canada's target rate of 2.0% by the end of 2008. The average annual inflation rate for the test year is predicted to be 2.2%, within a range of 1.8% to 2.6%.

With respect to Canadian federal government interest rates, the 3-month treasury bill ("T-bill") rate, which stood at 4.5% in mid-July 2007, is forecast to average the same yield level during 2008. For the 30-year Canada bond yield – at 4.5% in mid-July – I am forecasting a rise to the range of 4.75% to 5.00% for 2008, while the major banks' corresponding forecasts cover a range from 4.55% to 5.36%.

In Section III.A of my testimony, I discuss NP's short-run, volatility-of-return-related business risks as well as its longer-term, enterprise-viability business risks, and compare these with the corresponding risk exposures of other Canadian regulated electricity distributors and natural gas utilities and pipelines. I also compare NP's business risk to

that of the typical firm in my sample of publicly-traded Canadian utilities. I conclude that NP's overall business risk exposure is very low and has not increased since its 2003 GRA. In addition, I arrive at the judgments that the Company's *overall business riskiness* is: less than that of Enbridge Gas Distribution, Union Gas, and Gaz Metro; less than that of the typical firm in my sample of publicly-traded Canadian utilities; and less than that of the average firm in the entire array of Canadian rate-regulated energy utilities and pipelines.

In Section III.B, I examine NP's actual and proposed common equity ratios ("CERs") and compare them with the actual and allowed CERs for other utilities. I find that NP's proposed 45% CER is higher than that of any other Canadian gas or electricity distributor, and 7% higher than the average for a 13-firm sample of distributors. I also find that NP has a higher CER (at yearend 2006 and proposed for 2008) than any of the firms in my sample of publicly-traded utilities, with the Company's proposed actual CER for 2008 being more than 7% higher than the sample average. Considering this capital structure evidence along with a number of other aspects of financial risk, I conclude that NP's *financial risk*, from its shareholder's perspective, is lower than that of any other gas or electricity distributor in Canada, as well as lower than that of any of the firms in my sample of publicly-traded Canadian utilities. Nevertheless, I do not take issue with the Company's proposed 45% CER at this time because of the unsettled nature of North American debt markets currently and my recognition that, as a relatively small utility, NP may have to maintain a higher-than-otherwise-warranted CER to preserve its present "A" bond rating.

In Section III.C, I assess NP's *overall investment risk* in the light of my findings from the previous two sub-sections as well as additional comparative empirical evidence. I conclude that NP's shareholder is exposed to the lowest level of overall investment risk among all Canadian gas and electricity distributors and a much-lower-than-average overall investment riskiness as compared to the typical firm in my sample of publicly-traded utilities. Then, on the basis of these findings, I recommend that, as NP is significantly less risky, in an overall investment risk sense, than the average-risk or *benchmark* Canadian regulated utility, the Board should set an allowed equity return for NP for the test year that is 12 to 15 basis points below that which the various equity-return tests indicate is appropriate for the benchmark Canadian utility.

Section IV of my evidence sets out my forecast for the likely average cost of the Company's short-term borrowings for the 2008 test year – that is, 5.15% – and the likely new-issue cost for the 30-year First Mortgage Bonds NP plans to issue during the second half of 2007 – namely, the range from 5.8% to 6.05%.

In Section V, I formulate my return-on-equity recommendation for NP using three types of cost-of-equity-estimation tests. After discussing general principles in sub-section A, Section V.B covers the formulation of my Equity Risk Premium (ERP) test results. Section V.C explains the derivation of my Discounted Cash Flow (DCF) test results, and Section V.D explains how I arrive at my Comparable-Earnings-(CE)-Financial-Integrity-test-based estimate of the fair return for NP. In the final sub-section, Section V.E, I explain how I weigh the results of each of my three test and arrive at the following overall fair and reasonable return assessment for the *benchmark* Canadian utility.

	Test Result For 2008	Appropriate Weight	Factor
	%	%	%
ERP test	6.6 – 7.0	60	3.96 – 4.20
DCF test	7.3 – 8.5	15	1.09 – 1.27
Comparable Earning test	9.8	25	2.45
	Total		7.50 – 7.92

Then, applying the 12-15 bps downward return adjustment that is warranted as result of NP's lower-than-benchmark overall investment riskiness (as determined in Section III), I arrive at **my recommendation that the Board allow Newfoundland Power the opportunity to earn a return in the range of 7.4% to 7.8% on the equity capital invested in its regulated operations for the 2008 test year.** Further, I show that an equity return in this range will not threaten the preservation of the current "A" rating on the Company's bonds or restrict its ability to issue First Mortgage Bonds in the future.

In Section VI, I examine NP's proposal to change the way the riskfree rate component of its automatic adjustment formula (AAF) is determined each year subsequent to the test year. Based on several empirical studies of the forecast accuracy of the alternative

approaches, I conclude and recommend that the Board should deny NP's request to use *Consensus Forecasts* predictions and 30-year-versus-10-year Canada yield spreads in the determination of the riskfree rate component of its AAF. Instead, I recommend that the Board affirm its approval for using the existing procedure of taking the actual 30-year Canada bond yields around the beginning of the prior November as the value for the riskfree rate within the AAF.

Finally, in Section VII, I provide an evaluation of the prefiled evidence of Ms. Kathleen McShane, the Applicant's rate-of-return expert witness.

II . CURRENT AND FORECASTED FINANCIAL MARKET CONDITIONS

Q: What are the expectations about the real growth in the Canadian economy for the remainder of 2007 and for 2008?

A: The Canadian economy grew rapidly during the first half of 2007 – at an annualized pace of about 3.2% in terms of real GDP expansion – on the backs of stronger-than-expected export volumes and inventory investment and a considerable increase in household spending fueled by strong growth in employment levels and the use of household credit. Stronger-than-expected growth in the economies outside North America has also underpinned the demand for Canadian products.

However, both The Conference Board of Canada in its *Canadian Outlook – Summer 2007* and the Bank of Canada in its July 2007 *Monetary Policy Report: Update* expect the pace of Canadian real economic growth to decline during the second half of 2007, as the surge in the exchange rate of the Canadian dollar vis-à-vis the U.S. dollar since the end of the first quarter of 2007 dampens Canadian export growth. Furthermore, the weakening U.S. demand for lumber and other construction materials (as U.S. residential construction falters in the face of increasing mortgage defaults and tightening credit standards) will restrict export growth. Overall, the second half growth rate in the Canadian GDP is expected to pull back to about 2.6% on an annualized basis.

For 2008, the Conference Board is forecasting that Canadian real economic growth will bounce back to 3.2%, while the Bank of Canada foresees real growth averaging only 2.6% next year. Recent forecasts from the six major banks peg 2008 real GDP growth in the range of 2.5% to 2.9%. The Conference Board's more optimistic outlook is related to its expectation that U.S. growth will regain strength in 2008 and jump to a 3.1% annual rate versus only a 2.2% during 2007. Most forecasters see the continuing worldwide growth in the demand for raw materials, high oil prices, and continuing strength in non-residential business investment spending, as bolstering Canadian economic growth next year, while moderating employment and housing construction growth, more modest house price increases and household wealth and income (hence consumption) growth, and especially the effect of the high-valued Canadian dollar on manufacturers and exporters, as holding

growth back in 2008. The "elephant in the closet" for the 2008 growth forecast is whether the continuing collapse of the U.S. sub-prime mortgage market and the low-end housing market, and their spill-over effects to the U.S. high-yield debt market and the availability of credit for corporate takeovers and other investments, will spread to have a negative impact on overall U.S. consumer spending. If this were to happen it would have important repercussions for Canadian, and indeed global, economic activity. To quote from page 9 of the Conference Board's *Canadian Outlook – Summer 2007*, "For Canada, the hit could be twofold. Weaker U.S. growth would significantly impact Canadian export growth, while a weaker global economy could cause commodity prices to fall off sharply, thus reducing the income effect that has benefited Canada since prices started to rise back in 2003."

Q: What is the outlook for the economy of Newfoundland and Labrador?

A: Newfoundland and Labrador is expected to have the fastest GDP growth rate among all Canadian provinces during 2007, with a rebound in oil output compensating for a relatively weak investment and housing construction environment. Output from the province's three major offshore oil projects is predicted to jump 30% in 2007, and nickel production at Voisey's Bay is expected to remain strong. However, the economic boost from the offshore oil production will likely prove to be short-lived unless further expansion of the projects is approved. With a projected decline in oil production in 2008, continuing weak residential construction (in light of the province's anemic population and employment growth), and few major infrastructure projects in the pipeline, Newfoundland and Labrador's real GDP growth rate is expected to pull back to somewhere between 0.5% to 1.2% for 2008, according to a number of recent bank provincial forecast reports, and be the slowest among all provinces. A continuing decline in offshore oil production – in the absence of new project approvals – will continue to retard the province's growth for the years subsequent to 2008 as well.

Q: What are the expectations for the inflation rate in Canada over the next 18 months?

A: The Canadian inflation rate has been gaining steam during the first half of 2007, with the 12-month rate of increase in the total CPI moving up from 1.7% at the end of 2006 to

2.2% at the end of June 2007. Reflecting strong demand pressures, core inflation accelerated over this period and, outside the core, gasoline prices and fruit and vegetable prices jumped up. As set out in its July 2007 *Monetary Policy Report: Update*, the Bank of Canada expects total CPI inflation to continue to rise during the second half of 2007, peaking at a 3.0% annual rate during the fourth quarter (largely as result of the year-over-year impact of gasoline price increases since the end of 2006), before receding back to the Bank's target 2.0% rate by the end of 2008. Core inflation, however, is forecasted to remain within a 2.0% to 2.2% band over the period to the end of 2008. The Bank expects the total CPI inflation rate to ease back to a 2.0% annual rate by the end of 2008 as the result of (a) moderating excess demand pressures as the pace of economic growth slows, (b) the downward pressure on inflation from the lower import prices that result from the high Canadian dollar value, and (c) the slowing in the price increases for new houses.

The CPI inflation forecasts for 2008 recently published by the Conference Board of Canada and by the six major banks – and set out in the total below – are consistent with the Bank of Canada's expectation that inflation pressures will abate during 2008.

	Total CPI Inflation Rate Forecast for 2008 (% p.a.)
Conference Board of Canada	2.1
BMO Capital Markets	2.6
CIBC World Markets	2.4
National Bank Financial	1.8
RBC Capital Markets	2.2
Scotiabank Group	2.4
TD Bank Financial Group	2.2
Average	2.24

Q: What are the implications of these economic growth and inflation expectations, as well as the monetary policy situation in the U.S., for the likely level of short-term and long-term interest rates in Canada during 2008?

A: On Tuesday, July 10th, the Bank of Canada raised its benchmark short-term interest rate by 25 bps to 4.5% and noted that "some modest further increase in the overnight rate may be required to bring inflation back to the target over the medium term." Shortly thereafter U.S. Federal Reserve Board Chairman Ben Bernanke, in addressing the question of U.S. inflation during his mid-year report to the U.S. Congress, expressed his view that "with long-term inflation expectations contained, futures prices suggesting that investors expect energy and other commodity prices to flatten out, and pressures in both labor and product markets likely to ease modestly, core inflation [in the U.S.] should edge a bit lower, on net, over the remainder of this year and next year." On the prospects for growth, Mr. Bernanke opined that "declines in residential construction will likely continue to weigh on [U.S.] economic growth over coming quarters, although the magnitude of the drag on growth should diminish over time." However, "overall, the U.S. economy appears likely to expand at a moderate pace over the second half of 2007, with growth then strengthening a bit in 2008 to a rate close to the economy's underlying trend." Against this backdrop, the market's consensus was that the Fed would move neither to raise or lower U.S. interest rates during the remainder of 2007.

With Canadian rates rising and U.S. rates and monetary policy "on hold", the predictable consequence has been for the Canadian dollar to appreciate strongly relative to "the Greenback." This, in turn, as the Conference Board's Summer 2007 Outlook publication features in its title "Loonie's Rise to Take a Bite Out of Growth," can be expected to dampen Canadian economic growth going forward, particularly in the manufacturing and export sectors. Declining new home starts in the U.S. is already depressing the shipments of lumber and other construction materials from Canada. In the Conference Board's view, "it is this slowdown in growth that is expected to ensure the Bank of Canada moves cautiously with respect to further increases in its key lending rate." Moreover, any further rise in Canadian rates in an environment of stable U.S. rates would propel the Canadian dollar even higher, with crippling effects on many Canadian companies and industries.

The result of its mid-year overall analysis leads the Conference Board to predict that the Canadian 3-month treasury bill rate, which hovered in the neighbourhood of 4.5% in mid-July, will decline modestly going forward and average 4.28% during 2008. The major banks have generally taken a more pessimistic view with respect to the average level of

short-term rates in Canada during 2008, with 3-month T-bill-rate predictions ranging from 4.4% to 5.2%, for an average of 4.78%, in their June-July 2007 economic forecast updates.

The major banks' predictions for the average yield on 30-year Canada bonds during 2008, as expressed in their June-July capital-market forecast updates, are set out in the table below. These predicted levels compare to the approximate 4.5% yield prevailing at the time this evidence was prepared.

	Predicted Average Yield During 2008 On 30-Year Government of Canada Bonds
BMO Capital Markets	5.30%
CIBC World Markets	4.55%
National Bank Financial	4.78%
RBC Capital Markets	5.36%
Scotiabank Group	5.35%
TD Bank Financial Group	4.94%
Average	5.05%

Q: What then is your own view, Dr. Cannon, with regard to the likely level of interest rates during the test year?

A: My own view is somewhere between that of the Conference Board of Canada and the bank average. I believe that any further significant rise in Canadian interest rates will be "self-reversing" in the sense that the accompanying rise in the Canadian dollar will deflate growth in Central and Atlantic Canada to such an extent that aggregate demand and consumer borrowing will be stunted and send rates into retreat – especially as any lingering expectation for monetary policy tightening in Canada would evaporate. Therefore, for purposes of developing my own evidence, I am forecasting that average T-bill rates and bankers' acceptance (BA) rates for 2008 will be 4.5% and 4.7%, respectively, and that 30-year Canada bond yields will likely average between 4.75% and 5.0% for the test year.

III. EVALUATION OF BUSINESS RISKS, CAPITAL STRUCTURE, AND OVERALL INVESTMENT RISK

A. NEWFOUNDLAND POWER'S BUSINESS RISK

Q: What are the business risks that the Board should consider when establishing the allowed equity return and deemed capital structure for the regulated operations of Newfoundland Power?

A: The Board, in my view, should consider both (1) short-run, volatility-of-return-related risks and (2) longer-run, enterprise-viability or recovery-of-shareholder-investment risks. For electricity distribution utilities like NP, short-run risks include, for example, those year-to-year forecasting-related uncertainties associated with variable weather conditions, economy-driven fluctuations in the demand for electricity and the number of customer additions, changes in the power supply mix and the average cost of power due to fluctuations in hydrology or other causes, unexpected operating and maintenance expenses, and the effects of regulatory lag, which may result in a utility earning less than its allowed return. In many areas, these short-run risks are mitigated or eliminated through the use of deferral or reserve accounts. Examining historical evidence with respect to the volatility of actual equity returns, and especially their deviation from allowed returns, is useful for assessing the extent of these short-run, forecasting-related risks in relation to other utilities.

Long-run enterprise-viability (or recovery-of-capital) risks, on the other hand, are associated with those trends and events that may permanently undermine the capacity of NP to generate, on an on-going basis, the cash flows necessary to permit its shareholder to recover its investment and earn a fair return on the funds committed to NP's business. As long as NP continues to be regulated within an equitable, original-cost, rate-regulatory environment, it is fair to say that its long-run viability risk will "come home to roost" only if, in the future, there is a significant and sustained decline in the demand for electricity provided through its distribution system. Depending on the pace of the demand decline, this might result in NP carrying substantial excess capacity, which would, in turn, jeopardize its ability to recover its fixed costs each year, as rate increases would gradually

drive more customers to extreme levels of conservation, or to alternate power sources for some of their needs and away from using NP's distribution system. This "death spiral" scenario is the ultimate manifestation of the long-run, enterprise-viability-risk concern for a rate-regulated utility.

Q: How do you assess NP's short-run, volatility-of-return-related risks, and how do they compare with other Canadian regulated utilities?

A: NP operates in a smaller, slower-growing, and less diverse economic environment than most other Canadian gas and electric utilities. While this is generally seen as a credit challenge for the Company's bondholders by the credit rating agencies, this environment elevates the business risk exposure for NP's shareholder only if, and to the extent that, it makes NP's forecasting of its revenues and costs less reliable than those of other rate-regulated utilities. There is no evidence that this is true in NP's past financial performance and, to the extent that the Company's forecasts have been in error, the "error" has generally resulted in NP over-earning its allowed ROCE. Indeed, NP has *over-earned* its allowed equity return during each of the past 11 years (see page 1 of Schedule 4 in Appendix B), and by over 1.0% in three of those years, by virtue of under-forecasting revenues and by under-forecasting cost efficiencies that were subsequently achieved.

NP has alleged that the slower long-run growth in its customer base and projected electricity sales increases its business risk, but when asked specifically to explain the connection between slower growth and business risk in RFIs CA-NP-112, CA-NP-114, and CA-NP-415, the Company could not describe any plausible link between slower growth and less accurate forecasting. Finally, in Response to CA-NP-415, NP allows that "generally short-term forecasting should not be inherently more uncertain due to changes in the pace of population and/or economic growth." More than this, however, logic suggests that the more slowly variables change the easier it is to forecast future values of them.

Nor is there any logic to support the proposition that small size, in and of itself, makes forecastting more difficult or produces less reliable forecasts of revenues or costs. Finally, the shift in NP's retail sales mix from rural to urban customers – though it may pose some problems in the long-run – has no negative implications for NP's year-to-year demand

forecasting. Indeed, as NP captures almost all the space and water heating load for new urban customers but a smaller proportion of the corresponding load for rural customers, the rural-to-urban shift should improve the Company's demand forecasts over time.

There is, however, some logic to the notion that operating in a less-economically-diverse environment may make electricity demand more cyclically/economically sensitive and render demand forecasting more problematic than otherwise. Certainly, at a macroeconomic level, the lack of diversity in the Newfoundland and Labrador economy has caused its growth rate to be more volatile from year to year than that of other provinces. More than offsetting the lack of industrial diversity in NP's service area, however, is the fact that the proportion of its electricity sales that come from industrial and wholesale customers is smaller than that of any other electricity or natural gas distributor in Canada. In its Rating Report on Newfoundland Power dated March 9, 2007, DBRS states "Newfoundland Power also has a very stable customer base, as 100% of power sales are to the residential and commercial segments. The large industrial customers are served primarily by NLH." Page 7 of the DBRS Rating Report shows the split of NP's electricity sales and customers between residential and commercial over time, with no indication of any "industrial" sales or customers. It is generally recognized that industrial demand is more volatile than that from either the retail or commercial sectors, as the sales to industrial customers are more sensitive to swings in the pace of economic activity and these customers often have access to alternative energy sources. The table at the top of the next page shows NP's estimated proportion of industrial sales as compared to other electricity and natural gas distributors, where I have treated NP's sales to "goods-producing" customers as industrial sales.

The forecasting risk associated with the lack of industrial diversity in Newfoundland and Labrador is further contained by the fact that, in developing its Customer, Energy, and Demand Forecast, NP uses all available historical and forecast information, including economic, demographic, and market share information, as well as obtaining input directly from its largest customers and its regional offices. Indeed, the prospective accuracy of the Company's demand forecasts has improved somewhat since its 2003 GRA by its recent decision to use the Central Mortgage and Housing Corporation's (CMHC) forecasts of housing starts, in addition to those provided by the Conference Board of Canada, as part of

	Industrial and Wholesale Customers As a Proportion of Total Distribution Volumes[a]
Newfoundland Power	about 6%
ATCO Electric	65.3%
ATCO Gas	6.8%
Emera	27.4%
Enbridge Gas	34.3%
FortisBC	32.1%
FortisAlberta	36.0%
Gaz Metro	50.4%
Pacific Northern Gas	52.2%
Terasen	31.5%
Union Gas	63.7%

[a] Based on 2006 annual volumes, except for NP which is the author's estimate.

its demand forecasting methodology (CA-NP-229), as the CMHC housing-start forecasts appear to be more accurate than those of the Conference Board (CA-NP-226).

Unforecasted weather variations have a significantly greater impact on the accuracy of electricity sales forecasts and power supply costs than do unexpected developments in economy-related variables such as housing starts and plant openings and closures. NP is unique among Canadian electricity distributors in having a weather normalization reserve to insulate its customer rates and shareholder returns against the adverse impact of both abnormal weather and hydrology conditions from year to year. This reserve is composed of two parts: (1) a Degree Day Normalization Reserve to normalize NP's revenue and purchased power costs for the effects of abnormal weather conditions, and (2) a Hydro Production Equalization Reserve to normalize the Company's purchased power costs for variations in its own hydroelectric production due to stream-flows that are either above or below normal in any given year. In addition to its Weather Normalization Reserve, NP

has a Rate Stabilization Account (RSA) that allows it to flow through to its ratepayers the fluctuations between the estimated and actual charges from Newfoundland & Labrador Hydro ("Hydro") for the cost of fuel generated at Holyrood. The RSA also incorporates adjustments to NP's equity returns for: (a) the differences between NP's municipal taxes billed and its municipal taxes paid; (b) excess fuel costs for the fuel and additives used in NP's thermal plants to generate electricity other than at the request of Hydro; (c) secondary energy costs related to the purchase from Hydro of surplus energy generated by Corner Brook Pulp and Paper; (d) RSA shortfall adjustments resulting from differences between revenue increases and purchased power cost increases when Hydro's rates change; and (e) interest costs applied to the RSA account balances. As far as the author is aware, Northwest Territories Power Corporation is the only other Canadian electricity distributor that has a reserve fund to deal with hydrology variations from year to year and, among gas distribution utilities, only Terasen Gas, Gaz Metro, and Pacific Northern Gas have reserve funds to adjust for abnormal temperatures.

The Weather Normalization Reserve and RSA are both seen as significantly strengthening NP's creditworthiness by the credit rating agencies. Moreover, these reserves have the effect of dramatically lowering NP's short-run business riskiness by both stabilizing its year-to-year achieved equity returns and making them closer-than-otherwise to NP's allowed ROCEs. This can be illustrated by comparing NP's achieved equity returns, over time and in comparison with its allowed ROCEs, with the similar return histories for Enbridge Gas Distribution Inc. and Union Gas – two major utilities with diversified customer bases but that do not have the benefit of weather normalization reserves. The table on top of the next page, which is based on the historical achieved and allowed returns data set out on the three pages of Schedule 4 in Appendix B, shows that (1) NP's achieved equity returns have been less than 40% as volatile as those of the major Ontario gas distribution utilities over the past 11 years, and (2) the deviations of NP's actual returns from the mid-point of its Board-allowed ROCEs have been only a little over half as great as those experienced by Enbridge Gas and Union Gas, despite the latters' economically stronger and more diverse service territories. In other words, the protections that the Board has given NP's shareholder through the Weather Normalization Reserve and RSA have more than compensated for any apparent short-run business risks associated with the nature of the Newfoundland and Labrador economy.

NP's Year-To-Year Variability-of-Achieved-ROCE Risk
As a Percentage of the Corresponding Risk For
Enbridge Gas Distribution and Union Gas, Based on
Historical Data In Schedule 4 of Appendix B

Risk Measure Based On:	NP Versus Enbridge Gas	NP Versus Union Gas
Standard Deviation, or Deviations From Mean ROCE:		
1990-2006	54%	71%
1996-2006	29%	40%
Standard Error of Estimate, or Deviations From Trend Line ROCE:		
1990-2006	30%	38%
1996-2006	28%	36%
Deviation of Actual From Allowed ROCE:		
1990-2006	42%	52%
1996-2006	51%	63%

Indeed, the extent of the negative impact of weather risk (that NP does not face) on Ontario gas and electricity distributors was noted by the Ontario Energy Board (OEB) in its 2007 Enbridge Gas Distribution Rates Decision (Decision With Reasons-Phase 1, EB-2006-0034, July 5, 2007, pages 65-66).

NP also has the short-run, volatility-of-return-risk protection afforded by its Purchased Power Unit Cost Variance Reserve (PPUCVR), which reduces the financial impacts on the Company from variations between its actual and its forecasted purchased power costs. Most Canadian gas and electricity distributors have similar purchased gas/power adjustment clauses that, in effect, allow energy costs to be flowed through to, or recovered from, ratepayers, so NP's PPUCVR is a source of business-risk reduction that is common across the country.

NP experiences energy losses within its distribution system ("system losses") that it budgets for in its rate applications. Deviations in actual system losses from their forecasted levels tend to be positive and higher when NP's energy sales are also higher

than expected. Thus there is an offsetting effect on net returns that modestly reduces the short-run, volatility-of-return risk associated with forecasting system losses.

Finally, a favourable risk consequence of NP's operating in a slower-growth environment is that the Company does not have any major new capital expenditure projects on the horizon that would entail a significant expansion of its rate base and possibly pose financing risks down the road. Rather, the Company's forecasts contemplate gross capital spending in the range of $53-56 million per year through 2012, which will require only one $50 million debt issue and no new share issues over the 5-year, 2008-2012 time span. The Company's capital spending is largely aimed at refurbishing existing rate base assets and extending its distribution network to meet new service requirements. Consequently, investors will undoubtedly view NP's construction, expansion, and associated financing risks over the next 5 years as much lower than those of faster-growing utilities.

All in all, NP's short-run business riskiness is lower than that of almost all other Canadian gas and electricity *distributors* and has not increased since its 2003 GRA. Gas *pipelines*, which collect their revenue requirements through demand charges and are therefore not subject to weather risk, also have, of course, minimal short-run, volatility-of-return risks.

Q: Dr. Cannon, does the outcome with respect to NP's request for a modification to its Rate Stabilization Reserve mechanism to focus specifically on demand variances impact your assessment of the Company's current business risk exposure?

A: No, not at this time. As I understand it, the Company is proposing to eliminate the Purchased Power Unit Cost Variance Reserve (PPUCVR) and to introduce a Demand Management Incentive Account and also add an Energy Supply Cost Variance component to the Rate Stabilization Account. The combined effect of these proposals, if approved, would be to reduce the Company's risk.

The existing PPUCVR has the effect of transferring to customers the risk associated with variances from forecast in the total unit cost of power in excess of the 1% dead band. Hence, the Company is at risk for variances up to 1% in the effective unit cost associated with both demand and energy charges.

The proposed Demand Management Incentive Account would retain the structure of the PPUCVR, with the Company at risk for variances within a 1% dead band, but would limit this risk to variances in the effective unit cost associated with demand charges. The proposed Energy Supply Cost Variance component of the Rate Stabilization Account would have the effect of eliminating the dead band associated with variances in energy charges that exists within the current PPUCVR. Hence, the overall impact of approving these proposals would be to reduce the Company's risk.

I have not specifically factored the outcome on this issue into my required equity-return analysis. Certainly, however, Board approval for the proposed treatment of purchased power unit cost variances would lower the Company's overall risk as compared to the status quo, and further justify my recommended 7.4% - 7.8% range for NP's allowed equity return for the test year.

Q: How great is NP's long-run enterprise-viability (or eventual-recovery-of-capital) risk and how does it compare with that of other Canadian gas and electricity distribution utilities?

A: All other things being equal, at a generic level the long-run riskiness of electricity distribution is less than that of gas distribution, since there are, at a price, viable alternatives to gas as a heating fuel but no viable alternatives to electricity for its non-heating uses. Moreover, gas distributors face more weather-variability risk, and there is more downward price-related pressure on annual customer usage for gas distributors than for electricity distribution utilities. Vis-à-vis Canadian gas pipelines, both gas and electricity distributors face lower long-run business risks because they are not subject to the same level of long-run competitive risks as the pipelines. Similarly, oil and other liquids pipelines face higher long-run, enterprise-viability risks because they are subject to competitive risks from other pipelines and other modes of transportation, and they generally do not have the protection of long-term contracts. Finally, electricity generators, especially those that do not have captive customers for a higher proportion of their capacity, are much riskier than gas and electric distributors because: they are operationally more complex; they frequently face unplanned outages that may force them to purchase higher-cost power to satisfy their contractual commitments with little or no ability to recover the additional costs; operational cost increases may occur which also cannot be

recovered, such as unexpected fuel cost increases or adverse hydrology conditions; and they are generally subject to higher competitive risks. NP resides, of course, in the generically-least-risky category of utility in Canada in terms of short and long-run business risk exposure. As compared with the seven firms in my sample of Canadian publicly-traded utilities (see Schedules 5, 12, 13, or 14 in Appendix B), NP has a higher percentage of earnings attributable to distribution activities than any other utility except PNG, and has a lower percentage of electricity generation assets (at 12%) than any other electricity company.

Focusing specifically on NP, the Company continues to acquire close to 90% of its power supply from Hydro, a situation that has not changed since the 2003 GRA. While this is seen as a relative credit concern by some bondholders, because Hydro's relatively higher energy costs are passed through to NP's customers and may lead to energy conservation, no one has suggested that this supply situation threatens the Company's long-run viability or its ability to recover its shareholder's invested capital in the long run.

Nor does any risk to the long-run level of NP's electricity sales pose any meaningful threat to its long-run viability. There is essentially no alternative to electric power in respect to most of its uses. Moreover, NP has a monopoly position in the provision of electricity within its franchise area and the Company does not expect any change in this status for the foreseeable future. In other words, NP does not face the same kind of *bypass risk* that is of concern to many gas distribution companies. On this point, Moody's states in its March 5, 2007 Credit Opinion on NP Inc. (NPI) that "The fact that NPI's service territory is geographically isolated, and therefore largely removed from competition and exhibits relatively low, predictable growth contributes to Moody's view of NPI as a low risk utility."

With respect to the space heating market, the Company's capture rate for new homes has been increasing over time (up to almost 90% for 2005-2006) and its share of the overall provincial space heating market has therefore also been increasing steadily – a trend that will be re-inforced by the shift in population within the province from rural to urban areas. According to its Response to CA-NP-232, NP expects the percentage of households in its service area using electric space heating to continue to rise over the next 5 years, as electricity is expected to maintain its significant price-cost advantage over furnace oil for

both space and water heating, and provincial regulations relating to residential oil storage tanks are discouraging households from using furnace oil. The projected shift in the mix of urban versus rural customers will also reduce any minor competitive threat that NP might have faced from propane or wood in the space and water heating markets. Finally, any potential threat to the Company's space and water heating market shares from natural gas delivered to the province is, at best, speculative, as (a) no such delivery projects are as yet committed to or in progress, (b) the related pipeline construction costs are likely to render such a project uneconomic, and (c) even if natural gas eventually arrives on the island of Newfoundland, it will not threaten NP's long-run viability. Indeed, if the gas is used to fuel electricity generation, it may reduce NP's dependence on Hydro for power supplies and/or reduce the Company's peak power needs from Hydro and reduce its average purchased power costs.

The Company has stated that "the shift from rural to urban [customers] will increase the Company's business risk in the longer term as the Company is obliged to continue to maintain the existing asset base in rural communities where population and energy sales are declining, while at the same investing in new assets to meet energy sales growth in urban centers. This tends to increase the investment that must be recovered from effectively the same customer base." While this may be true, it is a trend that will gradually work its way through over a prolonged period of time, enabling both NP and its ratepayers to take actions to ameliorate the otherwise modest impact on rising electricity rates. After all, there is really no alternative for NP's ratepayers except to conserve energy which, from society's point of view, is not necessarily a bad thing. Any rate rise attributable to the rural-to-urban-customer effect is not, however, going to jeopardize the Company's long-run survival. Moreover, as was previously discussed, the rural-to-urban shift actually works to increase NP's market share in the space/water heating area and to reduce its short-run demand forecasting risks.

The Company also states that "over the longer term, supply costs can be expected to exert a generally upward pressure on price," and explains this prediction in its Response to CA-NP-22. In turn, this upward price pressure in the (distant?) future may negatively impact NP's electricity sales since, as the Company reports in Response to CA-NP-224, the price elasticity of its energy sales is rising gradually over time. There is really nothing new

about either of these trends and, furthermore, the slow-growth in the provincial economy and in electricity demand – that the Company points to as a business risk – will actually lower any risk of incremental-generating-cost-driven electricity rate increases and their associated impact on electricity sales. To the extent that there is any credible element of serious risk in either of these trends, the (a) generation-cost-driven price increases and (b) the slow provincial population and economic growth are off-setting risks. In any case, it is illogical to argue that demand-growth-driven higher average (passed through) generation costs will threaten the long-run viability of NP.

Considering all the present and potential risks, there is, in my view, no meaningful risk to NP's long-run survival or its ability to recover its shareholder's capital investment. Indeed, the Company's long-run business riskiness is lower than that of the typical publicly-traded Canadian utility and on par with that of the lower-risk, essentially-pure, gas and electricity distributors such as Terasen Gas, Enbridge Gas, ATCO Gas, ATCO Electric, and FortisAlberta.

Q: When you consider both the short-run and long-run business risks, how do you assess NP's overall business risk exposure in absolute terms and as compared to other rate-regulated Canadian utilities?

A: In my judgement, NP's overall business risk exposure is very low and has not increased since its 2003 GRA. Moreover, the Company's overall business riskiness is: less than that of Enbridge Gas Distribution, Union Gas, and Gaz Metro; less than that of the typical firm in my sample of publicly-traded Canadian utilities; and less than the typical or average firm in the entire array of Canadian rate-regulated energy utilities and pipelines.

Q: Some cost-of-capital witnesses identify *regulatory risk* as a separate category of potential business risk. Does your assessment of the regulatory risk that NP and its shareholder face alter the ranking of Company's relative business risk that you made in your preceding answer?

A: It certainly does not. The Board's regulation of NP has been very constructive and supportive of the Company's mission over the years, especially as evidenced by its

willingness to establish reserves to protect the Company, its shareholder, and its ratepayers from the adverse consequences of developments and events over which the Company's management has no control. This supportive regulatory environment is seen as a credit strength by the bond raters. In its Credit Opinion dated March 5, 2007, Moody's states "NPI is considered to be a low risk utility given that its operations are wholly regulated and that it operates in Canada, a jurisdiction that is generally viewed as having one of the more supportive regulatory environments for utilities on a global basis." Indeed, it is many of the measures and mechanisms that the Board and the Company have jointly put in place that are responsible for NP's very low business risk. This is acknowledged by DBRS, which states, in its Rating Report dated March 9, 2007, that NP's "ratings continue to be supported by the consistent operating results and financial profile of the Company which is largely due to a supportive regulatory environment." Furthermore, it is hard to detect any regulatory risk, or risk of any sort, when NP has managed to over-earn its allowed return during each of the past 11 years, and over-earned its allowed ROCE by an annual average of 66 bps during the 1996-2006 period. I see no evidence that NP's exposure to regulatory risk has increased in this hearing or since its 2003 GRA.

B. NEWFOUNDLAND POWER'S PROPOSED CAPITAL STRUCTURE FOR REGULATORY PURPOSES

Q: How does NP's proposal to have a 45% common equity ratio in its deemed capital structure for regulatory purposes compare with the common equity ratios for other regulated utilities across Canada?

A: In Schedule 6 of Appendix B, I have compared NP's present and proposed common equity ratios (CERs) with the CERs most recently adopted by regulatory boards for the major Canadian electricity and natural gas distributors. As revealed in Schedule 6, the Company's proposed CER (44.8% or 45%) is significantly higher than that of any other gas or electricity distributor, and 7% higher than the average for the 13 distributors shown in Schedule 6.

Q: How does NP's *actual* common equity ratio compare with those of the 7 firms in your sample of publicly-traded Canadian utilities?

A: Here again, NP has a higher CER (at yearend 2006 and proposed for 2008) than any of the firms in my sample of publicly-traded utilities, with the Company's proposed actual CER for 2008 being more than 7% higher than the sample average (see Schedule 5).

Q: So what then is your assessment of NP's exposure to *financial risk*?

A: *Financial risk* is predominantly financial leverage risk, where *financial leverage risk* is measured by the extent to which a firm uses debt and preferred shares (which have to be serviced before profits can flow through to the company's shareholders) in financing its corporate assets or, in the case of rate-regulated utilities, its rate base assets. Clearly, as Schedules 5 and 6 show, NP's exposure to financial leverage risk is lower than that of all other significant Canadian gas and electricity distribution utilities.

Beyond financial leverage risk, NP's financing policy, its relatively slow growth, and its relationship with its parent organization all expose it to a lesser amount of the other aspects of financial risk. The first two of these other aspects of financial risk revolve

around (1) the use of fixed-rate versus floating-rate securities and (2) the extent to which the firm will be forced to access capital markets in future years – possibly ones characterized by unstable conditions or unexpectedly high interest rates – to finance its rate base expansion.

On the first point, NP's non-common-equity financing is overwhelmingly arranged on a fixed-rate and long-term basis, with 94.2% of its non-common-equity capital structure projected to be on a long-term, fixed-rate basis over the 2008-2011 period.

On the second point, NP's relatively slow rate-base-growth requirements over the next 5 years mean that it will have to access the capital markets for external financing only once over this period, after it has placed the $60 million bond issue planned for this August. Moreover, renewal of its bank-syndicated $100 million committed credit facility will give NP flexibility with respect to the timing of its next long-term debt issue. Addressing these issues in its Rating Report on NP dated March 9, 2007, DBRS says that NP's "debt maturities are well spread out over the longer term, with maturity dates extending to 2035," and that "the Company's credit facilities should be more than adequate to fund future working capital needs and free cash flow deficits."

Finally, as regards financial risk, NP asserts that it has limited financial interdependence with its parent, Fortis Inc. As an established operating philosophy, Fortis appears to treat each of its subsidiaries as an independent, stand-alone entity. Assuming that this is true, it makes it less likely that financial problems at NP's parent will negatively impact the Company's own finances or bond rating.

Overall, then, I judge NP's financial risk, from its shareholder's perspective, to be lower than that of any other gas or electricity distributor in Canada or any of the firms in my sample of publicly-traded Canadian utilities.

Q: Given your view about NP's comparatively low business risk going forward, would it not be appropriate to recommend that the Board lower NP's deemed common equity ratio (CER) from its present 45% level?

A: Normally, I would agree with this position and recommend that the Board lower NP's CER to 40% or less. However, I am not doing so in this proceeding for two reasons. First, the North American credit markets recently appear to have entered what may be a prolonged period of unease, as the concerns raised by the rising defaults in the U.S. sub-prime mortgage market spill over into the U.S. junk bond market (where credit spreads have risen markedly) and also cast investor suspicion on collateralized debt obligations (CDOs) supported by sub-prime loans. This period of unease will last until the full extent and ramifications of the U.S. sub-prime mortgage crisis are clarified for investors. Consequently, this is likely not the right *time* for the Board to lower NP's deemed CER.

Second, NP *is* a relatively small utility and, rightly or wrongly, the bond rating agencies have an "anti-small" bias in their rating processes. Therefore, NP *does* need to maintain a higher-than-otherwise-warranted CER to preserve its "A" bond rating and the financial integrity of the Company's *outstanding bonds*. It is important to note, however, that NP does **not** need a CER nearly as high as 45% to compensate for the business risk of its equity returns or to maintain the financial integrity of its *shares*.

Q: What then is your view with respect to the Company's regulated capital structure?

A: At this time, I do not take issue with NP's proposed capital structure for regulatory purposes, as set out in its Application in Volume 1, Section 3: Finance, page 56, which contemplates a 45% CER. A 45% CER will help maintain NP's bond rating and preserve its position among major Canadian utilities as the one with the least financial risk from a shareholder's perspective.

C: AN ASSESSMENT OF NEWFOUNDLAND POWER'S OVERALL INVESTMENT RISK

Q: Based on your discussion in the previous two sections, how do you assess NP's *overall investment riskiness* from a shareholder's perspective?

A: As NP has (1) one of the lowest levels of business risk exposure among all Canadian gas and electricity distributors and a lower level of business risk than the typical firm in my sample of publicly-traded Canadian utilities, and (2) NP has the lowest level of financial risk among all the utilities we have been discussing, I am driven to the logical conclusion that **the Company's shareholder is exposed to the lowest level of overall investment risk among all Canadian gas and electricity distributors and a much-lower-than-average overall investment riskiness as compared to the typical firm in my sample of publicly-traded utilities.**

Q: Do you have any historical empirical evidence to support these conclusions?

A: Yes, I do. With respect to the comparison of NP's overall risk with other gas and electricity distributors, I have already referred to the historical evidence contained in Schedule 4 of Appendix B that shows that NP's equity returns have been considerably less volatile since 1990 than those of either Enbridge Gas Distribution or Union Gas. Unfortunately, I have not been able to obtain the historical utility-only ROCE data to perform a similar comparison with other pure gas or electricity distributors.

With regard to my sample of publicly-traded utilities, I do have the necessary data to effect the empirical comparison of their total investment riskiness with NP. The table below, which draws its numerical values from Schedule 4, page 1, and Schedule 21, shows that NP's overall investment riskiness – as measured by the variability of its achieved equity returns over the past 17 years (1990 through 2006) – has been lower than that of all of the firms in my utility sample.

	Variability of Equity Returns Over the 1990-2006 Period, As Measured By:	
	SD(ROCE)	SEE(ROCE)
	%	%
Newfoundland Power	1.38	0.63
Canadian Utilities	1.35	1.21
Emera Inc.	1.38	1.17
Enbridge Inc.	2.61	2.38
Fortis Inc.	1.51	1.51
Pacific Northern Gas	3.01	1.13
Terasen Inc.[a]	2.98	2.90
TransCanada Corporation	3.78	3.78

[a] For the 1990-2004 period only.

Q: Is there any other evidence that attests to NP's low level of business, financial, and overall investment riskiness?

A: NP's low level of business, financial, and overall investment risk is also demonstrated by its consistent ability over the past 15 years to sell bonds with a 30-year maturity. If investors were at all concerned about NP's financial risk or its long-run enterprise-viability risk, then the Company would not have been able to access 30-year debt. Very few Canadian corporations enjoy access to such long-term financing.

Q: What is the implication of your qualitative and quantitative evidence about NP's overall investment riskiness from its shareholder's perspective?

A: The overall investment risk evidence that I have presented strongly indicates that NP is significantly less risky, in an overall investment risk sense, than the *benchmark* Canadian regulated utility. This, in turn, means that the Board should set an allowed equity return for NP, for the test year, that is below that which the various equity-return tests (discussed in Section V of this evidence) indicate is appropriate for the benchmark Canadian utility.

Q: How much below?

A: I believe the downward relative-risk-related, equity-return adjustment for NP should be about 12 to 15 basis points. I arrived at this estimate by way of the historical analysis set out in Schedule 24 of Appendix B. There I have categorized the major utilities we have been discussing into four overall (business plus financial) risk categories – namely, (1) much-higher-than-average risk, (2) higher-than-average risk, (3) average or equivalent-to-the-benchmark-utility risk, and (4) lower-than-average risk, the latter being the category that NP belongs in, along with Terasen Gas and TransCanada Pipelines. As shown in Schedule 24, lower-than-average-risk utilities have, on average over the 1997-to-2007 period, received equity-return awards from their regulators that are 12 basis points lower than those for average-risk utilities.

IV. COSTS OF CAPITAL COMPONENTS OTHER THAN COMMON EQUITY

Q: NP is expected to have average short-term borrowings of as much as $58 million on its balance sheet during the test year. What do you now view as being the likely average rate that the Company will have to pay on these short-term borrowings during 2008?

A: The table below sets out NP's annual average short-term borrowing rate from 2002 through 2006 (as provided by NP in response to CA-NP-124) along with the daily-average 3-month Government of Canada treasury bill yield and the daily-average 90-day banker's acceptance (BA) yield for the corresponding years, and indicates the average spread required for NP's short-term borrowings each year.

	NP's Average	Annual Average[a]		NP's Average Spread Above:	
Year	Short-Term Borrowing Rate	3-Month T-Bill Yields	90-Day BA Yields	3-Month T-Bill Yields	90-Day BA Yields
	%	%	%	%	%
2002	2.75	2.51	2.62	0.24	0.13
2003	3.20	2.86	2.97	0.34	0.23
2004	2.52	2.22	2.30	0.30	0.22
2005	3.27	2.69	2.81	0.58	0.46
2006	4.62	4.00	4.16	0.62	0.46

[a] Taken from the Bank of Canada's website: http://www.bankofcanada.ca/cgi-bin/famecgi_fdps.

Based on the trend in the historical spreads revealed in the table above and my 2008 T-bill and BA rate forecasts (from Section II of my evidence) of 4.5% and 4.7%, respectively, I expect that the average cost of NP's short-term borrowings during the test year will be 5.15%.

Q: NP anticipates issuing a 30-year First Mortgage Sinking Fund Bond for gross proceeds of $60 million some time before the end of 2007. What effective yield do you predict that NP will have to offer to sell such an issue some time over the next 5 months?

A: Thirty-year Canada bond yields were approximately 4.5% during the latter half of July 2007 and, if the bank financial forecasters are to be believed, will fluctuate in the range of 4.5% to 4.75% for the remaining 5 months of 2007. Long-term Canadian corporate spreads have widened out by about 15-18 bps since the end of March of this year, largely in response to the recent turmoil in U.S. credit markets associated with the downgrading of collateralized debt obligations (CDOs) tied to sub-prime mortgage debt. Consequently, NP's long-term bonds are currently being priced to yield about 130 bps over 30-year Canada's. Adding a credit spread above long Canada's in the neighbourhood of 130 bps, suggests that NP can be expected to issue its new 30-year bond at an issue cost of between 5.80% and 6.05% during the latter half of 2007.

V. THE FAIR RETURN ON NEWFOUNDLAND POWER'S COMMON EQUITY

A. DISCUSSION OF GENERAL PRINCIPLES AND APPROACH TAKEN

Q: What rate-of-return tests have you used to assess the appropriate allowed equity return for the benchmark Canadian utility, and for NP, for the 2008 test year?

A: My conclusions regarding the fair and appropriate return on common equity (ROCE) for the benchmark, publicly-traded, Canadian utility company are based on the results of three tests, namely,

(1) the Equity Risk Premium (ERP) test,

(2) the Discounted Cash Flow (DCF) test, and

(3) the Comparable Earnings (CE)-Financial Integrity test.

I give primary weight to the results of the ERP test and secondary weight to the findings associated with the other two tests.

Once I have established the fair return for the benchmark average-risk utility, I make a downward adjustment to arrive at the fair return for NP since, as shown in Section III of my evidence, NP is unquestionably less risky than the benchmark publicly-traded Canadian utility when both relative business risks and relative financial risks are considered together.

Q: What general regulatory principles have guided your analysis in these proceedings?

A: In my view, it is the responsibility of the Newfoundland and Labrador Board of Commissioners of Public Utilities (the "Board"), under the *Public Utilities Act* and the *Electrical Power Control Act 1994*, to ensure that consumers receive safe and reliable electricity at rates that are reasonable while allowing NP to earn a fair return on its investment in supplying the electrical service. For NP to earn a fair and reasonable return,

I believe it must be allowed the opportunity to earn a rate of return high enough to enable it to meet all its debt service obligations, to achieve and maintain a sound credit rating in the financial markets of the world, and to attract new equity capital without impairing, under normal circumstances, its equity book value.

Q: What judicial principles have you considered in making your assessment of a fair and reasonable rate of return for NP?

A: I have taken account of the decision of the Supreme Court of Canada in Northwestern Utilities Ltd. vs. the City of Edmonton (1929 SCR 192). In his judgment in that case, Mr. Justice Lamont stated that

"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."

I have interpreted this statement to mean that Mr. Justice Lamont intended regulatory authorities to look at market-determined *security investment risks*, as well as risks and returns from the corporate accounting perspective, when establishing fair rates of return on equity – which I have done, wherever possible, in my analysis.

B. THE EQUITY RISK PREMIUM TEST

Q. What is the "Equity Risk Premium" (ERP) test?

A: The Equity Risk Premium test is designed to implement the capital attraction standard of regulatory rate-setting. It is used to estimate the cost of equity capital for utilities. The approach focuses on the rate-or-return premium required to attract equity capital in competition with other investment opportunities available to investors in the marketplace.

The ERP approach is grounded on the reasonable premise that equities are usually riskier than government debt and, therefore, risk-averse investors will demand an extra or premium return above government bond yields to hold equities instead of government debt. This extra return requirement is called the "equity risk premium" or ERP. The ERP, itself, is the product of two components – namely (a) the "market risk premium", or MRP, and (b) some measure of the riskiness of the individual equity shares in relation to the typical stock in the overall market universe. In one particular version of the ERP model, known as the "Capital Asset Pricing Model" or "CAPM", this relative risk measure is known as the stock's "beta risk". However, there are also other useful and legitimate ways to assess relative risk for both industrial and utility shares. A second approach, for example, is to compare the volatility of a stock's investment rate of return over time (as measured by its standard deviation of investment returns, or SD(r)) to the corresponding figure for the typical stock in the market. Generically speaking, then, the ERP method is used to calculate a utility's cost of equity capital (k_e) by estimating the input parameters to two inter-related formulas, as follows:

$$k_e = [\text{riskfree rate of interest}] + ERP \quad (1)$$

$$ERP = [\text{measure of stock's relative riskiness}] \times MRP \quad (2)$$

where the "riskfree rate of interest" is proxied by either federal government treasury bill yields, long-term government bond yields, or long-term government bond yields adjusted for the inherent investment risk associated with holding government bonds. The latter risk is simply a reflection of the fact that government bond prices will fall, and investors will

experience a capital loss, when interest rates rise. The choice of the appropriate riskfree rate proxy depends on the ERP model that the analyst is focusing on, and on how the historical evidence with respect to the MRP has been collected.

Q: Please explain what you mean by the *market risk premium* and the *riskfree rate of interest*?

A: The market risk premium (MRP) is the equity risk premium (ERP) for the stock market as a whole. Conceptually, it is a forward-looking measure of the additional rate of return, above the *riskfree rate of interest*, that investors in general require (or demand or expect) to just be willing to invest in a broadly-diversified portfolio of equity securities and assume the risks associated with these equity investments. The MRP is the required compensation for the risk of investing in the market as opposed to leaving one's investment capital in a riskless security, such as a treasury bill or short-term bank deposit. The *riskfree rate* is the rate of return (or interest rate) required by investors to invest in an asset/security that has no investment risk associated with it – that is, no credit or default risk and no price volatility or income uncertainty risk – and where, as result, the nominal dollar rate of return is known with certainty at the initial time of the investment.

Q: How is the measurement of the MRP operationalized, especially with respect to calculating historical or experienced values of it?

A: Generally speaking, the "broadly-diversified portfolio of equity securities" (referred to above) is proxied by the return performance of the market index for the stock market being examined – the S&P/TSX Composite Index for the Canadian stock market, for example.

There are two proxies in common use to represent the "riskfree rate of interest," and there are theoretical and practical advantages and disadvantages with each. One approach is to take the yield on 3-month government treasury bills (T-bills) as the riskfree rate, since the default risk on these securities is zero and the capital value (or price volatility) risk is negligible (and zero beyond 3 months). Unfortunately, the treasury bill rate tends to be volatile over time, incorporates only short-term inflation expectations, and is subject to central bank manipulation. These deficiencies mean that the prevailing T-bill rate may not

always be a true reflection of the underlying riskfree rate in the economy, and may not be a good representation of the riskfree rate over a longer-term investment horizon.

The alternative approach to defining the MRP is to compare the required return (or actual return, if one is looking historically) on the market portfolio of equity securities to either (a) the current yield, or (b) the rate of investment return over time, on long-term government bonds. This is the approach that underlies the automatic ROE adjustment methodology used by many Canadian regulatory boards, and it is consistent with the view that utility shareholdings are long-term investments for most shareholders, including the parent organizations of regulated utilities and, in turn, the parents' shareholders. The long-term government bond yield incorporates long-run inflation expectations, which are an equally important consideration for (long-term) utility shareholders.

The MRP relative to long-term government bond yields is one of the constructs that I will employ in my evidence here. However, there is a serious problem with this conception of the MRP when it comes to estimating a firm's or a utility's cost of equity capital. The derivation of the Capital Asset Pricing Model – one of the widely used valuation and return-estimation models that relies on a MRP component in its application – requires that the base, to which the MRP is added, be a truly riskless rate of return … which long-term government bond rates are not. When interest rates change, the market prices of long-term government bonds change as well, often quite dramatically, exposing investors to capital-value or price-volatility risk. Recognizing this, long-term government bond investors build into their yield requirements a "term premium" or "maturity risk premium" to compensate for this price-volatility risk and the possibility that they will realize a capital loss if they are forced to sell their government bonds after a period of rising interest rates.

Q: How can one employ the CAPM or other MRP-based model in the context of a long-term investment (and investment holding period), while avoiding the problem of long-term government yields not being truly riskless?

A: What I have traditionally done in my rate-of-return evidence before various regulatory boards is to recognize that existing long-term Canada bond yields can be *uncontaminated* by removing the "maturity risk premiums" imbedded in them – thus constructing an

estimate of the truly riskless rate of return relevant for long-term investors. The MRP gauged relative to T-bills (historically or on a forward-looking basis) is then added to this uncontaminated long-term riskless rate to arrive at the estimated required return for the market as a whole.

Q: What do you estimate the MRP to be at the present time, based on Canadian historical and forward-looking evidence?

A: A great deal of investigation of MRPs – in Canada, in the U.S., and worldwide – has taken place and been reported on over the past decade. I will review the long-run historical data with respect to experienced Canadian MRPs, first, and then present the recently available evidence about the Canadian MRP going forward.

The argument for giving consideration to average historical security returns and MRPs is that these figures are available to investors and may help to shape their expectations, going forward, even if the past conditions and developments that gave rise to the historical results are unlikely to prevail in the future.

The Fixed Income Research department of Scotia Capital annually publishes a document entitled "Investment Returns" wherein their analysts provide historical data from which average experienced MRPs relative to T-bill returns can be calculated. The relevant time series of investment return figures are reproduced in Schedule 7 of Appendix B. For the 1957-2006 period – which is the longest period available from the Scotia Capital data – the experienced MRP relative to T-bills averaged 2.99% p.a., based on geometric means, and 4.37% p.a., based on arithmetic means. (I shall discuss the appropriateness of geometric – or compound – average values versus arithmetic averages later in this section. For a definition of these terms, please see the Glossary at the beginning of this evidence.)

Ibbotson Associates – which is noted for its annual examination of U.S. nominal and real security returns – also publishes its own estimates of Canadian (market) equity risk premia over past time periods. The Ibbotson Canadian data estimates, which go back to 1936, are set out in Schedule 8 and focus exclusively on experienced MRPs relative to long Canada

bonds. For the full 1936-2006 period, the Ibbotson data show that the MRP (relative to long Canadas) averaged 4.03% (geometric average) or 5.37% (arithmetic average).

Mercer Investment Consulting – which advises a wide range of Canadian pension funds and other institutional investors – has compiled historical Canadian data back to 1924, in the case of equities and long Canada bonds, and to 1934 in the case of T-bills (the Canadian government only began issuing T-bills in 1934). These figures and the associated MRPs are reproduced in Schedule 9 and are identical to the corresponding time series of returns published by the Canadian Institute of Actuaries in its Report on Canadian Economic Statistic 1924-2006. The historical average MRPs for various long-run time periods, based on the Mercer's/Canadian Actuaries' data, are shown at the bottom right hand side of Schedule 9. For the 1924-2006 period (the longest available), the average MRP based on long Canada's is 3.25% using geometric means and 5.12% using arithmetic averaging. With respect to the MRPs relative to T-bill returns, the averages for the longest period (1934-2006) are 5.64% and 6.95%, respectively, based on geometric and arithmetic averages.

Finally, in 2002, Dimson, Marsh, and Staunton ("DMS") – two professors and a research director at the London Business School – concluded a monumental study of long-run security returns and MRPs for 16 major countries and markets around the world, including Canada (see Schedule 10 for the reference). Their data/estimates for Canada go back to 1900, and cover the 101-year period from 1900 through 2000. These data are set out in Schedule 10 and have been updated to include the corresponding Canadian returns for 2001 through 2006. Based on the updated DMS data, the average MRPs relative to long Canadas are 4.38% and 5.32%, respectively, based on geometric and arithmetic means; the corresponding average MRPs relative to T-bills are 4.81% and 6.12%.

Q: What is your summary conclusion with respect to the *historical* Canadian MRP evidence?

A: Besides obvious differences in the available time periods for analysis, there are subtle differences in the data sources for each of these studies and in the nature of the Canada bond and T-bill returns used to calculate the annual MRPs that are used for averaging. Consequently, I believe that there is useful information in all four of the studies I have

reviewed, and I have given some credit to each of them in my summary assessment of the Canadian historical MRP evidence in the table below.

Canadian Historical MRPs:	Geometric Average (% p.a.)	Arithmetic Average (% p.a.)	2/3 Arithmetic + 1/3 Geometric . (% p.a.)
Relative to Long-Term Canada's	3.90	5.25	4.80
Relative to Canadian T-Bills	4.75	6.10	5.65

Q: Why have you shown MRP values in the above table that give a two-thirds weight to arithmetic average figures and a one-third weight to geometric averages?

A: While academics argue over which form of averaging is more appropriate for various purposes, the truth is that both averages provide information that is useful to, and used by, investors some of the time. If one is predicting security returns or MRPs for a single forward period based entirely on historical data, then the arithmetic average is the superior figure to focus on. This single-period focus is also the one called for, in theory, for employing the single-period CAPM. The arithmetic mean is the rate of return which, when compounded over multiple periods, provides the mean of the probability distribution of ending wealth values, given an initial investment stake. This makes the arithmetic mean the appropriate (cost of capital) discount rate for evaluating investment projects based on expected future values or cash inflows.

On the other hand, seasoned investors with multi-period investment horizons, will often look to the long-run compound (geometric) average returns they have experienced with different asset classes to form their views as to what they can reasonably expect in the future. The geometric mean is also the one used to calculate annualized performance figures for mutual funds, pension funds, and market indices – the information that investors are being bombarded with daily.

While there is a theoretical preference for the arithmetic mean, in practice both geometric and arithmetic averages are used by corporate investors and financial advisors (see R.F. Bruner, K.M.Eades, R.S. Harris, and R.C. Higgins, "Best Practices in Estimating the Cost

of Capital: Survey and Synthesis," Financial Practice and Education, Spring/Summer 1998, page 18). Therefore, throughout my evidence, I have given twice as much weight to historical arithmetic means as I have to geometric means when I consider past MRPs in the context of estimating forward-looking MRPs.

Q: What is your estimate of the *forward-looking* Canadian MRP?

A: Forward-looking MRPs are often estimated by advisors to pension funds and other institutional investors to assist their clients in establishing affordable pension benefits (or, alternatively, required employee and employer contributions to achieve a certain level of benefits) and in formulating long-run asset allocation policy targets. Mercer Investment Consulting has provided these forecasts to the Queen's University Pension Committee and numerous other clients on a periodic basis. As at April 30, 2007, Mercer's estimate of the Canadian MRP relative to long-term Canada bonds was 3.2% p.a., in recognition of the strong performance of Canadian equity markets in recent years.

Another source of information for gauging the forward-looking Canadian MRP is to look at the consensus economic forecasts distributed by the Watson Wyatt Investment Consulting Practice (another major pension consulting firm with worldwide operations and clientele) in their "Canadian Survey of Economic Expectations 2007" publication. This publication, which is produced annually (and is a successor to the similarly-named, former publication by KPMG Consulting), provides short-term, mid-term, and long-term (to the 2012-2021 period) consensus forecasts of financial market and macroeconomic variables based on the surveyed projections of 42 of Canada's leading business economists and portfolio managers. In the latest Survey, these participants have forecasted the long-term total return on Canadian equities going forward to be 8.0% (based on the median response). Their corresponding forecast for Canadian 30-year bonds foresees a 5.1% yield over the long-term future – implying an expectation of a 2.9% future MRP relative to long-term Canada's. In addition, the Survey participants foresee an average 3-month treasury bill yield over a 5-to-15 year horizon of 4.1%, which implies a MRP of 3.9% p.a. relative to T-bills.

In another recent study dated January 2006, the Economics Department of the TD Bank Financial Group published an article, entitled "Rates of Return For the Long Haul," in which the author provided forward-looking rate-of-return predictions for various financial asset classes based on long-term projections for inflation, productivity, labour market conditions, economic growth, and corporate profits. The study's forecast of Canadian T-Bill returns going forward was an average of 4.4% annually for the long-run future. The corresponding forecast for the total return (i.e., including dividends) on Canadian equities was 7.3%, based on the projected long-run growth rate in Canadian corporate profits and stable price-to-earnings multiples over time. Taken together, the TD Bank's study contemplates a long-run, forward-looking Canadian MRP relative to T-Bill returns of 2.9%.

Q: What is your summary conclusion with respect to the *forward-looking* Canadian MRP?

A: Based on the foregoing evidence, it is my view that the forward-looking, long-run Canadian MRP relative to long Canada bond yields lies in the range of 2.9% to 3.2%, while the corresponding MRP relative to T-bills (or the long Canada yield with the maturity risk premium backed out) lies in the range of 2.9% to 4.2%.

Q: Considering both the historical and forward-looking evidence, what is your overall assessment of the MRP based solely on Canadian evidence?

A: It is generally acknowledged that the ERP test is a forward-looking concept that reflects investors' expectations about the future. Consequently, it is vital that the MRP component of the ERP test also be a forward-looking value, even if historical evidence is being consulted to assist in divining this forward-looking figure. Consequently, I have given a 60% weight to the forward-focused MRP estimates discussed above and a 40% weight to the historical evidence reviewed earlier. This weighting results in the following MRP estimates based on Canadian evidence alone.

MRP Relative to Long-Term Canada's:	**3.65% to 3.85%**
MRP Relative to the Riskless Long-Term Asset:	**4.0% to 4.8%**

Q: What is the evidence with respect to *historical* MRPs in the U.S. equity markets?

A: There are numerous historical studies of long run security returns and MRPs for the U.S. equity markets. For the 1926-2006 period, Ibbotson Associates find the following average MRPs:

1926-2006 Period:	Geometric Average (% p.a.)	Arithmetic Average (% p.a.)
MRP Relative to Long US Bonds	5.4	6.5
MRP Relative to U.S. T-Bills	6.7	8.5

For the period from 1900 through 2006, the Dimson, Marsh, and Staunton study of U.S. security returns produces the following array of historical MRPs (see Schedule 11):

1900-2006 Period:	Geometric Average (% p.a.)	Arithmetic Average (% p.a.)
MRP Relative to Long US Bonds	4.70	6.38
MRP Relative to U.S. T-Bills	5.48	7.42

Finally, Jeremy J. Siegel, in the third edition of his well-known investment book Stocks For the Long Run (McGraw-Hill, 2002), provides long run average U.S. security returns and MRPs for both the 1802-2001 and 1871-2001 periods. Based on the tables on pages 13 and 15 of his book, Siegel's returns data reveal the following long run MRPs:

1802-2001 Period:	Geometric Average (% p.a.)	Arithmetic Average (% p.a.)
MRP Relative to Long US Bonds	3.4	4.6
MRP Relative to U.S. T-Bills	4.0	5.4

1871-2001 Period:	Geometric Average (% p.a.)	Arithmetic Average (% p.a.)
MRP Relative to Long US Bonds	4.1	5.5
MRP Relative to U.S. T-Bills	5.2	6.8

Q: What is your summary conclusion with respect to the *historical* U.S. MRP evidence?

A: It is evident from the set of 4 tables above that the farther back one goes in time with the U.S. securities data, the smaller the average experienced MRPs will be. Consequently, the somewhat arbitrary choice of time period will dictate one's conclusions regarding average MRPs. Therefore, I have simply chosen to average the results in the 4 tables, which has the effect of giving greater weight to the more recent time periods, which are included in all the underlying time series of returns.

U.S. Historical MRPs:	Geometric Average (% p.a.)	Arithmetic Average (% p.a.)	2/3 Arithmetic + 1/3 Geometric . (% p.a.)
Relative to Long US Bonds	4.40	5.74	5.30
Relative to US T-Bills	5.34	7.03	6.47

Q: Please discuss any *forward-looking* estimates of the U.S. MRPs that you are aware of.

A: On page 124 of his recent book (referenced above), Jeremy Siegel predicts that the future MRP (relative to long-term bonds) in the U.S. "is likely to be in the range of 2 to 3 percent, about one-half the level that has prevailed over the past 70 years."

On page 176 of Stocks, Bond, Bills, and Inflation: 2007 Yearbook published by Ibbotson Associates in 2007, Roger G. Ibbotson and Peng Chen report their estimation of the forward-looking U.S. MRP (versus long bonds) to be 4.33% on a geometric basis and 6.35% on an arithmetic basis, based on the supply-side earnings model they developed in their January/February 2003 Financial Analysts Journal article entitled "Stock Market Returns in the Long Run: Participating in the Real Economy."

Dimson, et al (DMS), on pages 191 and 192 of Triumph of the Optimists: 101 Years of Global Investment Returns, peg the prospective U.S. MRP (relative to T-bills) at 4.1%, on a geometric mean basis, and 5.4% on an arithmetic mean basis. They arrive at their forward-looking estimates for the twenty-first century by adjusting (downward) the historical MRP for two factors – namely, (a) the impact of past equity cash flows (i.e., dividends) that exceeded expectations, and (b) the gain, historically, that accompanied the fall in required risk premiums during the 1900-2000 period. (See pages 188-194 of the above-referenced book for a more detailed discussion of their approach.)

In his book titled The Equity Risk Premium: The Long-Run Future of the Stock Market, published by John Wiley & Sons, Inc. in 1999, Bradford Cornell discusses a wide variety of approaches adopted by various analysts to estimate the likely U.S. MRP in future years. Using his own approach – an application of the standard DCF model using a combination of I/B/E/S forecasts for companies and long-run forecasts for the U.S. economy (as of December 1996) – Cornell arrives at forward-looking MRPs of 4.27% over long bonds and 5.51% over T-bills (see pages 101-125 from the above-referenced book). He also discusses how the phenomenon of *survival bias* has likely caused the historically-measured U.S. MRPs to overstate the true MRP over past time periods. Cornell summarizes his view of the impact of survival bias, on page 69 of his book, as follows:

"Survival bias is a significant problem for estimating the long-run future risk premium. In the period between 1926 and 1997, during which Ibbotson data were accumulated, the United States led a charmed financial life. There were no market interruptions and no bouts of hyperinflation. As a result, American data during that interval are not representative of the behavior of equities in general in the past and are unlikely to be representative of the behavior of American equity markets in the future."

In their April 2002, Journal of Finance paper, entitled "The Equity Premium", Eugene F. Fama and Kenneth R. French – two very highly regarded U.S. academics – re-examine the estimation of the U.S. MRP over the second half of the twentieth century. Using dividend and earnings growth rates, respectively, to measure the expected rate of capital gain, these authors re-estimate the MRP over the 1951-2000 period to have been 2.55% and 4.32%, respectively, relative to the short-term riskless asset (which they use commercial paper to

proxy). They conclude that the high average equity returns experienced over the 1951-2000 period were due to the unexpected decline in equity discount rates that produced larger-than-expected capital gains – in other words, the average U.S. stock return over the latter half of the twentieth century was a lot higher than investors had expected.

Robert D. Arnott and Peter L. Bernstein, respectively Chairman of First Quadrant, L.P. and President of Peter L. Bernstein, Inc., have also weighed into the debate about future MRPs with their article entitled "What Risk Premium Is "Normal"?", published in the March/April 2002 issue of Financial Analysts Journal. Their conclusion regarding future MRPs is evident from the following quote, which is taken from the start of their article.

"We are in an industry that thrives on the expedient of forecasting the future by extrapolating the past. As a consequence, investors have grown accustomed to the idea that stocks "normally" produce an 8% real return and a 5% risk premium over bonds, compounded annually over many decades. Why? Because long-term historical returns have been in this range, with impressive consistency. Because investors see these same long-term historical numbers, year after year, these expectations are now embedded into the collective psyche of the investment community.

Both figures are unrealistic from current market levels. Few have acknowledged that an important part of the lofty real returns of the past has stemmed from rising valuation levels and from high dividend yields which have since diminished. As this article will demonstrate, the long-term forward-looking risk premium is nowhere near the 5% of the past; indeed, it may well be near-zero today, perhaps even negative. Similarly, the long-term forward-looking real return from stocks is nowhere near history's 8%. Our argument will show that, barring unprecedented economic growth or unprecedented growth in earnings as a percentage of the economy, real stock returns will probably be roughly 2-4%, similar to bonds."

Finally, various pension fund managers and consultants have also shared their forecasts for the forward-looking U.S. MRP. In a paper titled "Understanding the Equity Risk Premium," dated May 2002, Mercer Investment Consulting analysts Martin Den Heyer, Julie Dubois, and Jean Michel estimate that the MRP for the U.S. S&P 500 Stock Index versus 10-year

U.S. Treasury bonds will lie in the range of 1.7% to 2.6% for future years. Mercer's most recent estimate of the U.S. ERP (as of April 30, 2007) is, however, 3.2% relative to long-term U.S. government bonds. Wellington Management Company, LLP, in a White Paper dated October 2002 and titled "The Equity Risk Premium, Part II: Capital Market Expectations," forecasts that U.S. equities will outperform bonds by roughly 300 basis points, on an annualized basis, over the next 5 years – a MRP which they acknowledge is below the 4.4% historical MRP relative to bonds.

Q: Considering all the studies and forecasts you have just reviewed, what is your summary conclusion with regard to the *forward-looking* U.S. MRP?

A: There is virtually universal agreement among academics and practitioners that the historical MRPs achieved by U.S. equities over the period from 1926 to the present *overstate* the required MRPs going forward. Based on the analyses and conclusions of the studies I have referenced above as well as my discussions with numerous pension fund managers and investment professionals, I believe that the forward-looking MRP for U.S. equities relative to long-term bonds now lies in the range of 2.8% to 3.5%, while the corresponding MRP relative to the riskless asset lies in the range of 3.65% to 4.25%.

Q: Considering both the historical and forward-looking evidence, what is your overall assessment of the MRP based solely on U.S. data and studies?

A: Giving 60% weight to the forward-looking U.S. MRP estimates and 40% weight to the historical averages, my conclusions with respect to the prospective U.S. MRPs are as follows:

MRP Relative to Long-Term U.S. Treasury Bonds:	**3.8% to 4.2%**
MRP Relative to the Riskless Long-Term U.S. Asset:	**4.75% to 5.15%**

Q: Considering the MRP evidence that you have reviewed for Canada and the U.S., what conclusions do you come to with respect to the appropriate MRPs to use for estimating ERPs in this hearing?

A: I have chosen to attach a 70% weight to the Canadian-based evidence and a 30% weight to the MRP evidence derived from studies of the U.S. markets. On this basis, my conclusions with respect to the appropriate prospective MRP values to use in my equity return tests are:

MRP Relative to Long-Term Canada Bonds:	**3.7% to 3.95%**
MRP Relative to the Riskless Long-Term Asset:	**4.25% to 4.9%**

Q: What is the prospective *riskfree rate of interest* for the 2008 test year?

A: If one is using MRPs gauged relative to long Canada bond yields, then the appropriate riskfree rate to use in the context of the ERP model for determining costs of equity capital is simply the forecast of the 30-year Canada bond yield for 2008 – a value that I forecast to be 4.75% - 5.00%. If, however, (a) one conceptualizes the riskfree rate to be a rate truly devoid of price volatility risk – as is required, for example, in the use of the Capital Asset Pricing Model and beta risk measures – and (b) the MRP evidence is based on MRPs relative to T-bill yields – what I have been calling the "MRP based on the riskless long-term asset" – then the appropriate riskfree rate to use is found by subtracting one's assessment of the prospective *maturity risk premium* from the forecasted 30-year Canada yield.

Q: What is the "*maturity risk premium*" and what considerations have influenced your assessment of the maturity risk premium prospectively associated with long Canada bond yields during the test year?

A: While long-term Canada bonds are free of default risk, they are subject to a great deal of price-volatility risk as interest rates fluctuate over time. Consequently, long Canada yields incorporate a "maturity risk premium", or "capital value risk premium", or "term premium," to compensate investors for this element of investment risk. The experienced maturity risk premiums for long Canada bonds for various historical periods are set out in the table below:

	Average Return On Long-Term Canada Bonds	Average Return On Canadian 91-Day Treasury Bills	Average Experienced Maturity Risk Premium
	%	%	%
1957-2006 (50 years)	7.75	6.50	1.25
1967-2006 (40 years)	8.44	7.19	1.25
1977-2006 (30 years)	8.70	7.55	1.15
1987-2006 (20 years)	7.31	5.80	1.51
1997-2006 (10 years)	5.44	3.66	1.78

For an unbiased estimate of the historical maturity risk premium, the time period chosen should be one where the average level of long-term interest rates is approximately the same at the beginning and end of the period. Long Canada bond yields averaged 4.27% during 2006. We have to go back to the 1957-58 period (average yield of 4.13%) to find long Canada yields as low as this. Consequently, the most appropriate of the above time periods to use for estimating the historical maturity risk premium is the 50-year, 1957-to-2006 period, which was characterized by an average risk premium of 125 basis points.

The underlying maturity risk premium tends to vary over the interest rate cycle - being lowest when rates in general are at their cyclical peaks or when buying long-term bonds is perceived as being least risky, and being highest when interest rates are near their cyclical lows or when long-term bonds are perceived to embody the greatest amount of investment risk. Consequently, keeping in mind the historical evidence and considering the present stage in the Canadian interest rate cycle - where investing in long-term bonds is perceived to be moderately risky over the next year - it is my judgment that the prospective maturity risk premium for long Canada bonds is likely to be about 80-90 bps, with a mid-point of 85 bps. This puts the prospective rate on the riskless long-term asset in the range of 3.85% to 4.2% for the 2008 test year.

Q: How have you estimated the relative investment riskiness of the benchmark or average-risk Canadian utility for purposes of applying the ERP test?

A: First I put together a sample of all publicly-traded Canadian utility companies whose businesses primarily involve regulated energy distribution and transmission activities. This sample includes Canadian Utilities, Emera (NS Power), Enbridge Inc., Fortis Inc.,

Pacific Northern Gas, TransCanada Corporation, and, for the period during which it was publicly-traded, Terasen (BC Gas).

I then assembled an eleven-year history of the beta risk coefficients and standard deviations of monthly investment returns (SD(r)) for each of these utilities and computed the sample mean and median values for each year. These figures for beta risk and SD(r) risk are set out in Schedules 12 and 13, respectively, in Appendix B. I interpreted the value found by assigning a two-thirds weight to the median and a one-third weight to the mean to be the risk estimate for the average-risk or benchmark utility.

Then I compared, year-by-year, the risk estimate for the benchmark utility with the corresponding measure of risk for the "typical" stock in the S&P/TSX Composite Index. In effect, therefore, I have used the Toronto-Stock-Exchange-(TSE)-listed companies in the S&P/TSX Composite Index (about 277 companies) as my representative sample for the universe of Canadian publicly-traded firms.

Q: How have you measured the historical investment riskiness of the typical S&P/TSX stock, and how has it changed over the period from the end of 1996 until today?

A: The table on top of the next page, which is based on figures from the "Research Insight" database, shows the beta and SD(r) riskiness of the typical S&P/TSX company over the period from December 1996 up through June 2007. I have represented the riskiness of the "typical S&P/TSX firm" by attaching a two-thirds weight to the risk value associated with the median firm in the Composite Index (when the firms are arranged from highest to lowest risk) and a one-third weight to the mean (or arithmetic average) risk value for all the firms in the index.

The figures in the table reveal that the investment riskiness of the typical S&P/TSX firm has been about the same since December 2006 as it was over the 1996-1998 period – that is, before the effects of the "tech bubble" and Nortel's wild stock price ride dominated the measurement of market riskiness. For a brief period during the Spring of 2000, Nortel's weight in the Toronto Stock Exchange Composite Index exceeded 20%, and the upward and downward moves in Nortel's share price had a disproportionate impact on "market"

	All Stocks In the S&P/TSX Index					
	Beta Risk Coefficients			Standard Deviations of		
For the	Unweighted			Monthly Investment Returns		
60 Months	Median	Mean	2/3 Median	Median	Mean	2/3 Median
Ending:	Firm	Value	+1/3 Mean	Firm	Value	+1/3 Mean
Dec.1996	0.910	0.994	0.938	7.92	11.27	9.04
Dec.1997	0.915	0.985	0.938	8.31	11.16	9.26
Dec.1998	0.912	0.949	0.924	9.34	10.80	9.83
Dec.1999	0.846	0.905	0.866	9.94	11.25	10.37
Dec.2000	0.721	0.803	0.748	10.68	12.47	11.28
Dec.2001	0.627	0.718	0.657	11.15	12.67	11.66
Dec.2002	0.586	0.711	0.628	11.03	12.72	11.59
Dec.2003	0.388	0.633	0.470	10.59	14.65	11.94
Dec.2004	0.447	0.704	0.533	9.45	13.79	10.90
Dec.2005	0.703	0.852	0.753	8.64	11.99	9.76
Dec.2006	0.916	1.075	0.969	8.04	10.83	8.97
June 2007	0.973	1.125	1.024	7.93	10.02	8.63

returns from the third quarter of 1999 through the third quarter of 2001. This, in turn, distorted the measurement of individual-stock relative investment riskiness, not just during the 1999:3-to-2001:3 period, but also up through the middle of 2006, since the beta and SD(r) values are based on the proceeding 60 months of returns data. The distorting effects of the Nortel/tech bubble on risk measurement can be seen in the table above, where there is a severe depression in the beta values for the typical S&P/TSX firm between December 1999 and December 2005 even though the real systematic riskiness of the typical firm is unlikely to have changed by very much. A similar effect – in this case manifested by a moderate rise in SD(r) values – can also be observed for the same period with respect to the measurement of SD(r) risk.

As the impact of the "Nortel/tech bubble" passed out of the calculation of the beta and SD(r) risk values before the end of 2006, I shall focus on the risk measures of the typical

S&P/TSX firm for December 2006 and June 2007, and to a lesser extent those values for 1996-1998, when I make my assessment of the relative riskiness of the benchmark utility.

Q: How then has the investment riskiness of the average-risk or benchmark Canadian utility compared to that of the typical S&P/TSX stock, especially during those periods when the investment risk measures were not contaminated by the Nortel/tech bubble effect?

A. The figures to address this question are found in the second line from the bottom of the tables in Schedules 12 and 13. Beginning with Schedule 12, it appears that the benchmark utility's beta riskiness was about 50% of that of the typical S&P/TSX stock during the pre-Nortel-effect years (1996-1998) but has fallen to only about 40% of that of the typical stock during the most-recent, post-Nortel-effect periods (2006-2007).

In terms of relative SD(r) risk, the second-from-the-bottom line on Schedule 13 shows that, while the benchmark utility's SD(r) risk hovered in the range of 40%-45% of the riskiness of the typical S&P/TSX firm during the 1996-2006 period, its relative SD(r) has emerged from the Nortel-effect period in the neighborhood of 50%.

Q: How then do you interpret the *quantitative* risk evidence from Schedules 12 and 13 that you have just discussed?

A: In terms of the quantitative measures of investment risk, and giving equal weight to each of the relative beta and SD(r) analyses, I conclude that the benchmark utility is now and prospectively about 45% as risky as the typical S&P/TSX firm (or as the Canadian stock market as a whole).

Q: When you also factor *qualitative* considerations into your assessment of the relative overall investment riskiness of the benchmark Canadian utility, what conclusion do you arrive at?

A: The regulatory environment shelters public utilities and their shareholders from many of the profit-performance and survival risks that unregulated firms face in their competitive business arenas. In contrast to unregulated firms, utilities enjoy the protection of an array

of deferral accounts that moderate the year-to-year fluctuations in their returns and ensure the eventual recovery of prudently-incurred costs. The monopoly franchises granted utilities and the fact that their products and services are essential to households and businesses and are not going to be rendered obsolete in the foreseeable future, ensures the long-run survival of utility firms in a way that is rarely matched by other firms (except perhaps the big banks and insurance companies). Overall, the qualitative considerations point to the benchmark utility being less than half as risky as the typical firm whose shares are trading on the Canadian stock market.

Overall, then, considering both the quantitative and qualitative evidence, I judge the shares of the average-risk or benchmark utility to be only about 45% as risky as the typical S&P/TSX stock.

Q: Finally, then, Dr. Cannon, how do the MRP, riskfree rate, and relative risk assessments that you have made to this point translate into ERP and cost-of-equity-capital estimates for the benchmark Canadian utility for the 2008 test year?

A: I will draw my conclusions using both the approaches that I have discussed to developing the MRP and riskfree-rate input values to the ERP model.

Starting with the approach where the MRP is gauged relative to long-term Canada bond yields and the riskfree rate is simply the prospective long-Canada average yield for 2008, I have assessed or forecasted the following input values:

Relative risk of the benchmark utility:	45%
Prospective MRP based on long Canada's:	3 .7% – 3.95%
Therefore, the prospective benchmark ERP is:	1.67% – 1.78%
Prospective long-Canada yield for 2008:	4.75% – 5.00%

Therefore, the estimated "bare-bones" cost of equity capital for the benchmark utility for 2008 is 4.75% - 5.00% plus 1.67% to 1.78%, or the range from 6.4% to 6.8%

Using the approach that focuses on the truly riskfree rate and the MRP gauged relative to the riskless long-term asset, we have the following ERP-based, cost-of-equity input values:

Relative risk of the benchmark utility:	45%
Prospective MRP relative to the riskless long-term asset:	4.25% – 4.9%
Therefore, the prospective benchmark ERP is:	1.9% – 2.2%
Prospective riskfree rate for 2008 based on the long-Canada yield less the maturity risk premium:	3.85% – 4.2%

Therefore, the estimated "bare-bones" cost of equity for the benchmark utility for 2008, using this approach, is the range from 5.75% to 6.4%

Weighting the results of each ERP test equally results in an estimate of the test-year cost of capital for the benchmark utility in the range of 6.1% to 6.6%.

To this bare-bones cost of equity range, I would add 45 bps to recognize flotation cost and financing flexibility considerations. This, in turn, leads me to conclude that the **prospective "all-in" benchmark cost of equity capital for the average-risk Canadian energy utility is now 6.6% to 7.0%, based on the ERP test.**

C. THE DISCOUNTED CASH FLOW TEST

Q: What is the "Discounted Cash Flow" (DCF) approach to estimating required equity rates of return for utilities?

A: Like the ERP test, the DCF test is designed to implement the capital attraction standard of regulatory rate-setting. Using the DCF method, the "bare-bones" cost of equity is estimated to be the sum of (1) the "growth-adjusted," indicated dividend yield on the utility's common shares and (2) the expected future growth rate in the utility's dividends per share (DPS) – the latter expressed as a constant rate in perpetuity. The dividend yield is found by dividing the firm's currently-indicated DPS by the current representative price of its shares, and then making an adjustment to reflect the likely growth in the DPS over the next 12 months. Some flotation and financing flexibility allowance is often added to the "bare-bones" cost of equity capital, as well, to arrive at the utility's recommended allowed return. The corresponding "all-in ERP" is then found by subtracting the current or prospective long-term Canada yield from the DCF-based recommended allowed return.

Q: How did you develop the input data for performing your DCF test?

A: I employed a sample of 6 Canadian energy utilities and pipelines whose shares are currently publicly traded. The sample consists of Canadian Utilities, Emera (NS Power), Enbridge Inc., Fortis Inc., Pacific Northern Gas (PNG), and TransCanada Corporation (TransCanada Pipelines or TCPL). Where additional useful perspective on historical utility growth rates could be obtained, I included Terasen (formerly BC Gas) in the sample, although Terasen's shares have not been publicly traded since November 2005.

Q: How did you compute the dividend yield component for your utility sample?

A: For the dividend yield component of the DCF formula, I took the indicated annual dividend per share as of July 20, 2007, for each of the sample utilities, and divided it by the closing share price for each company on that day. These calculations and the sample averages are shown in Schedule 14 of Appendix B. For the purposes of the DCF test, I relied on the figure reflecting a two-thirds weight to the median and a one-third weight to

the mean, from Schedule 14, to arrive at a current dividend yield of 3.38% for the typical Canadian energy utility. This value is then adjusted for growth to arrive at a 3.45% dividend yield for incorporating into the DCF formula.

Q: How did you develop your estimate for the future growth rate variable in the DCF formula?

A: Essentially I looked at two sources of information. As shown on page 1 of Schedule 15 in Appendix B, I found the historical DPS growth rate for each of my sample firms, over the 1991-2007 period, by using both the actual DPS values for the beginning and ending years as well as the regression-trend-line-indicated values for each of these years. I also looked at the actual growth rates for every 8-year period in between 1992 and 2007. I then averaged all these growth rates across the utility sample. Paying more attention to those growth-rate periods ending during the past 3 years, leads me to conclude that the range from 3.4% to 4.6% is the best representation of the historical growth rates from which many investors will shape their expectations about future DPS growth rates.

Using the information provided on page 3 of Schedule 15, I checked to see whether a trend toward either rising (and unsustainable) or falling dividend payout ratios from the sample utility companies may have distorted the DPS growth calculations from the perspective of their use in the DCF test. I found no evidence to support the possibility that either an upward or downward trend in payout ratios had compromised the use of historical DPS growth rates as predictors of future, long-term, sustainable utility growth rates.

My second source of growth rate information is securities analysts' 5-year-forward median EPS growth rate forecasts provided by I/B/E/S. These are shown at the bottom of page 1 of Schedule 15 and, unfortunately, are available for only 3 of the sample utilities. Two of the growth forecasts are lower than the most recent 8-year actual DPS growth rate experienced for the corresponding companies (i.e., by 1.8% for Canadian Utilities and by 1.4% for Enbridge Inc.), while one is higher (i.e., TransCanada Corporation by 2.0%).

Considering both the historical DPS growth rate evidence and the future-oriented EPS growth projections by securities analysts, it is my judgment that the 3.4% to 4.6% range is

the best estimate of investors' current DPS growth expectations for the benchmark Canadian energy utility.

Q: Based on the dividend yield and growth rate estimates you have discussed above, what bare-bones cost of equity does the DCF model indicate for the benchmark utility firm?

A: Combining the growth-adjusted dividend yield of 3.45% with the DPS growth-rate range of 3.4% to 4.6% points to a "bare-bones" cost of equity in the range of 6.85% to 8.05%.

Q: What are the implications of this finding for the appropriate equity return for the benchmark Canadian utility for the 2008 test year?

A: Adding a combined flotation cost and financing flexibility allowance of 45 bps to the above "bare-bones" cost-of-equity range produces an indicated appropriate allowed equity return for the average-risk, benchmark Canadian utility in the range of 7.3% to 8.5% for the 2008 test year.

D. THE COMPARABLE EARNINGS-FINANCIAL INTEGRITY TEST

Q: What do your "Comparable Earnings" (CE) studies indicate about the appropriate rate of return for the benchmark Canadian utility?

A: The Comparable Earnings-Financial Integrity test is designed to shed light on some aspects of the *fairness* of allowed ROCE awards in the light of the general regulatory and judicial principles described earlier in this section. In other words, *fair returns* are those which simultaneously:

(1) protect the ability of the utility to provide efficient and reliable service to its customers;

(2) enable the utility to meet its debt service obligations and maintain a sound credit rating in the financial markets of the world;

(3) enable the utility to attract new share capital without impairing, under normal circumstances, its equity book value; and

(4) satisfy Mr. Justice Lamont's test of a *fair return*.

The CE test is often helpful in assessing whether an equity return award satisfies criteria (2) and (4) above.

Q: What time period of equity returns have you used in your Comparable Earnings analysis, and why?

A: Analysts generally agree that, for the purposes of the Comparable Earnings test, the analysis of industrial returns should cover at least one full business cycle – incorporating both recessionary and expansionary periods in the economy – so that the results can reasonably be associated with "normal" business conditions. Over a longer run future horizon, it is "normal" to expect a mix of favourable/expansionary and unfavourable/ recessionary business environments, with their differing impacts on corporate profitability. Consequently, the analysis of average industrial rates of return on equity over a period of years which contains no recessionary years or years with less than 1% annual real growth

is bound to give a biased reflection of the reasonable profit and ROCE expectations under "normal" long run economic conditions.

The Canadian economy has not experienced a recession since the 1990-1992 period, when real (or constant dollar) GDP was lower in 1991 and 1992 than it was in 1990 (see Schedule 1). Therefore, in order to capture a full business cycle for the purpose of developing comparable earnings evidence, I have chosen the 17-year period from 1990 through 2006 inclusive – a time span that includes 2 recessionary years and 15 moderate and higher-growth years. The average annual rate of real GDP expansion over this period was 2.8%.

Q: Please describe how you have selected your representative sample of low-risk Canadian industrial companies.

A: My objective was to choose Canadian industrial firms which would be as comparable to the typical Canadian regulated utility as practically possible in terms of overall investment risk. I also recognized that accounting techniques vary widely from industry to industry, as do the distorting effects of inflation on the "quality" of reported corporate earnings and rates of return. Finally, I looked for firms with sufficient corporate and investment seasoning and investor recognition to serve as comparables for the benchmark Canadian utility.

I began my selection process with a universe consisting of all those firms whose shares were included in the S&P/TSX Composite Stock Index for May 2007. To account for the above concerns, I then proceeded to eliminate:

(1) all firms in the resource-extraction-based industries (i.e., in the mining, oil and gas producer, oil and gas servicing, and paper and forest products categories) because of the highly cyclical nature of their returns and the fact that the accounting techniques they use often make their reported earnings non-comparable with regulated utilities;

(2) all firms in the financial services, real estate and construction, and management-company categories, because of their highly-leveraged capital structures and the

non-comparability of their results on account of differences in financial reporting procedures; and

(3) all firms in highly-regulated industries, to minimize the possibility of circular reasoning.

As the companies in the S&P/TSX Index are classified according to the Global Industry Classification Standard (GICS) put into effect as of March 31, 2002, in order to implement the first step in my sample selection process, I restricted my search for low-risk industrials to those firms included in the May 2007 S&P/TSX Composite Index which fall in the following GICS sectors:

Code 20 - industrials
Code 25 - consumer discretionary
Code 30 - consumer staples
Code 35 - health care

as well as those firms in the GICS sub-industry categories:

10102010 - integrated oil & gas
15101020 - diversified chemicals
15102010 - construction materials
15103010 - metal & glass containers
15103020 - paper packaging, and
15104050 - integrated steel manufacturers

Then, to ensure that the selected industrials would have sufficient corporate and investment seasoning and investor recognition to serve as comparables for the benchmark utility, I pruned from the list of eligible companies all those whose shares were not included in the S&P/TSX Composite Index for December 2002. This step also had the appropriate effect of eliminating all *income trusts* from the sample. After the application of these first steps, there were 52 companies remaining eligible, and the names of these firms can be found by combining the names from Schedules 16 and 17 in Appendix B.

Then, in order to ensure that I would have the data required to carry out my CE analysis over the 1990-2006 period, and to further ensure that the included sample firms would have sufficient "seasoning" from an investor's perspective, I eliminated those firms for which consistent corporate return-on-common-equity, share price, and market-to-book-value (MV/BV) data were not available back through 1990. Those firms eliminated by the application of this criterion are shown in Schedule 16.

Because the typical utility investor attaches considerable importance to minimizing *share price volatility risk*, I then dropped from my sample any firm whose share price declined by *more than 57%* over some period during the previous decade (i.e., since 1996). I have used the 57% cutoff point in my industrial sample selection procedure in every hearing since 1990. Initially, 57% represented the maximum share price decline experienced by any of the firms in the utility sample I was then using. I have continued to use this cutoff figure to ensure the consistency of my sample selection procedures since that time. Fourteen companies failed this risk screen – as shown in Schedule 16 – and were weeded out of the sample.

Recognizing that most utility investors are also concerned about *dividend uncertainty risk*, I also removed from the sample any firms that suspended their regular dividend payments, or cut their per-share dividends by 50% or more, at any time post-1996. As indicated in Schedule 16, two firms were pruned on this account, including one that did not satisfy the share-price-volatility criterion.

Thirteen firms remained in my industrial sample after the application of the above three criteria to the 52 firms from the eligible GICS sectors that were included in the S&P/TSX Composite Index for both May 2007 and December 2002. These 13 industrials are named and briefly described in Schedule 17 of Appendix B.

Q: How do you measure the investment riskiness of the firms in your industrial sample?

A: I have employed two *accounting-information-based* risk measures – namely, the standard deviation of accounting (book-value-based) returns on common equity (i.e., SD(ROCE)) and the standard error of estimate of accounting returns (i.e., SEE(ROCE)) – as well as

two *market-returns-based* risk measures – that is, the beta coefficient and the standard deviation of investment rates of return (i.e., SD(r)). All four of these risk measures are used to assess both (a) the relative riskiness of the sample companies at the present time, while the two market-based risk measures are used to investigate the trend in the relative riskiness of the industrial sample over time.

Q: Focusing first on the market-based measures of risk, how has the riskiness of the typical firm in your industrial sample changed, if at all, relative to the typical S&P/TSX firm, over the period from the end of 1996 to today?

A: Schedule 18 in Appendix B sets out the beta values at the end of each year from 1996 through 2006, as well as the value for June 2007, for each of the 13 firms in my sample of low-risk industrials. For each year, I have also shown the sample mean and median beta value, and I represent the beta value for the "typical" low-risk industrial for each year by applying a two-thirds weight to the sample median and a one-third weight to the mean.

In Schedule 19, I have similarly shown the SD(r) values for all 13 industrials for the December 1996 through June 2007 period and also computed a SD(r) risk value for the "typical" low-risk industrial by taking two-thirds of the sample median SD(r) value each year plus one-third of the corresponding sample mean.

In the bottom row/panel of each of these schedules, I have calculated annually how the "typical industrial's" riskiness compares with that of the typical firm in the S&P/TSX Composite Index. The Composite Index risk measures were previously set out and discussed in Section V.B of this evidence. As noted in Section V.B, calculations of beta (and to a lesser extent SD(r)) were distorted by the "Nortel/tech bubble" effect during the December 1999 through December 2005 period. Consequently, when making my assessment of the relative investment riskiness of my industrial sample as compared with (a) the typical S&P/TSX firm and (b) as compared with my sample of publicly-traded utilities and the benchmark Canadian utility, I shall focus on the risk values for December 2006 and June 2007 and, to a lesser extent, on those for 1996 through 1998.

Q: What do the figures in the bottom rows in Schedules 18 and 19 tell you?

A: The ratios in the bottom row on Schedule 18 between the betas of the typical low-risk industrial and the typical S&P/TSX firm indicate that my sample of low-risk industrial firms has gotten relatively less risky, from a systematic or beta risk perspective, over the past decade. Moreover, based on the most recent figures, it appears that the beta riskiness of my low-risk industrials is, on average, only about 50% of that of the typical firm on the overall Toronto Stock Market.

A similar although less pronounced trend in relative SD(r) risk is seen in the bottom row of Schedule 19. As compared with the typical S&P/TSX firm, the SD(r) risk of the typical low-risk industrial has declined modestly over the past decade and now appears to be only about two-thirds the level of the typical S&P/TSX firm.

Q: How does the riskiness of the firms in your industrial sample compare with the riskiness of the benchmark or average-risk publicly-traded utility?

A: In Schedule 20, I have set down four measures of the riskiness of each of my 13 industrials for the most recent observation period and calculated the sample median and mean to get a figure for each risk measure that reflects the "typical" low-risk industrial. In Schedule 21, I have done the same thing for my sample of 6 (currently) publicly-traded utilities and found the respective risk values for the benchmark utility by applying a two-thirds weight to the utility-sample median and a one-third weight to the sample mean. At the bottom of Schedule 21, I have also compared the risk values for the benchmark utility with the corresponding values I found for my typical low-risk industrial in Schedule 20.

The bottom row/panel of Schedule 21 reveals that the benchmark Canadian utility has been only about 40% as risky as the typical low-risk industrial in terms of the accounting-based measures of risk (SD(ROCE) and SEE(ROCE)) over the 1990-2006 period. With respect to the market-based measures of risk (β and SD(r)) as measured over the past 5 (post-Nortel-effect) years ending at December 2006 and June 2007, the benchmark utility has been only about 75% as risky as the typical low-risk industrial.

Assessing the combined findings described in the previous paragraph and shown at the bottom of Schedule 21, it is my assessment that the benchmark Canadian utility is no more

than 60% as risky as the typical low-risk industrial firm with regard to the *quantitative* measures of investment riskiness.

Q: Have you also considered various *qualitative* factors in your assessment of the relative riskiness of the benchmark utility as compared to your typical low-risk industrial?

A: Yes, I have. First and foremost, I have noted that the regulatory environment shelters public utilities and their shareholders from many of the most damaging effects of unbridled competition. While the regulatory rate-setting process allows utilities to adjust their customer rates periodically and stabilize their utility earnings in the face of cyclical revenue and cost fluctuations, the same is not true for the firms in my industrial sample. Furthermore, industrial firms do not enjoy the protection of the assortment of deferral accounts that regulatory boards allow utilities to use to shelter their shareholders from the adverse effects of a variety of unforeseen or unforeseeable events over which these firms have no control. Finally, utilities have a monopoly in the provision of their respective major energy-delivery services and the demand for these services is unlikely to be eclipsed by technological changes or consumer behavior during the foreseeable future. On the other hand, the low-risk industrials do not enjoy monopoly positions in their primary businesses and, in some cases, changes in technology and/or consumer behavior are undercutting the long-run demand for their products and services.

Q: Taking account of both the quantitative and qualitative evidence, what conclusion do you draw with respect to the overall investment riskiness of the benchmark Canadian publicly-traded utility as compared to the typical firm in your sample of low-risk industrials?

A: My assessment of the combined quantitative and qualitative evidence leads me to conclude that the benchmark utility is only 50% to 60% as risky, in an overall investment risk sense, as the typical low-risk industrial.

Q: What average ROCEs have the firms in your low-risk industrial sample earned over the 1990-2006 period?

A: Schedule 22 in Appendix B sets out the average ROCE earned by each industrial firm over the 1990-2006 period, as well as the corresponding average market-to-book-value (MV/BV) ratio for each firm's shares for this period. The average results for the sample as a whole are shown at the bottom of Schedule 22 and in the table below.

	1990-2006 Test Period		
Industrial Sample:	Mean Firm	Median Firm	2/3 Median + 1/3 Mean
Average Return on Equity	11.1%	9.8%	10.2%
Average MV/BV Ratio (times)	2.23	2.18	2.20

These findings show that the typical low-risk industrial has earned an average return on its shareholders' common equity of 10.2% over the 1990-2006 period, while its shares have sustained an average MV/BV ratio of 220% over the same period.

I interpret these results to mean that over the past 17 years, average returns in the neighbourhood of 10.2% have been **more than sufficient** to enable the typical low-risk industrial firm to maintain an average MV/BV ratio considerably in excess of the level required to preserve its financial integrity.

When I interpret these findings in the light of a fair return to the benchmark utility, however, I must conclude that the average return on equity required to maintain the *future* financial integrity of the benchmark utility is less than 10.2% for three possible reasons.

The *first reason* is simply that the typical Canadian energy utility has been, and will continue to be, considerably less risky than the typical low-risk industrial. Canadian regulatory boards have consistently acknowledged that a downward risk-related adjustment to the "raw" returns estimated for a sample of low-risk industrials may be necessary in the process of applying the Comparable Earnings technique to arrive at a fair and reasonable return on equity for the benchmark utility or the subject utility.

For the benchmark Canadian utility, I judge the favourable risk differential to be such as to warrant a compensating, downward, required-return adjustment of approximately 40 bps

from the return achieved by the typical firm in my industrial sample. The extent of this recommended risk adjustment is based on the relative-risk comparisons between the typical utility, on the one hand, and low-risk industrials, on the other, that I reviewed over the preceding several pages.

Q: What is the second potential reason you referred to for adjusting your raw industrial returns to establish a fair return for the benchmark utility?

A: An adjustment for inflation expectations is the *second potential reason*. As shown in Schedule 2 of Appendix B, the average CPI inflation rate actually experienced over the 1990-2006 period was 2.1%, while CPI inflation expectations averaged 2.4%. Currently (as of May 2007), the annual total CPI inflation rate and the core CPI inflation rate are both running at a 2.2% rate. Looking forward, the Bank of Canada, in its July 2007 Update Monetary Policy Report is predicting that the total CPI rate will rise to 2.8% during the second half of 2007, while the core inflation rate will remain at 2.2%, and both inflation rates will decline during 2008 and settle at 2.0% in 2009. The predicted decline in the inflation rate beyond 2007 is seen as the result of slowing general economic growth, the high value of the Canadian dollar lowering import prices, and a moderation in housing price increases. The average total CPI inflation prediction from the 6 major Canadian banks for 2008 is 2.27%, within a range of 1.8% to 2.6%. The consensus expectation for the CPI inflation rate (based on median values) is 2.0% for the 2008-2011 horizon and 2.0% for the 2012-2021 horizon (from Watson Wyatt's "Economic Expectations 2007"). As the current and prospective levels of Canadian inflation are essentially the same as those associated with the returns on low-risk industrials over the 1990-2006 period, no inflation adjustment is warranted at the present time.

Q: In prior regulatory hearings, Dr. Cannon, you have discussed making an adjustment to "raw" Comparable Earnings results in situations where sample companies may have achieved elevated returns by virtue of their ability to exercise a degree of monopoly control over their product markets. Rothmans Inc. was singled out as an example of such a firm. Do you believe there is a need to make any adjustment to the historical returns from your industrial sample in this hearing to reflect the presence of monopoly-power elements?

A: No, I do not. I do not detect any significant ability to exercise excessive monopoly power among the 13 firms in my industrial sample.

Q: What then do you believe is a fair and reasonable return for the benchmark utility currently and prospectively, based on your Comparable Earnings test?

A: It is my judgment that, within the Comparable Earnings framework, a **fair and reasonable return for the average-risk or benchmark Canadian energy utility is 9.8%.**

E. FINAL RETURN-ON-EQUITY RECOMMENDATION FOR NEWFOUNDLAND POWER

Q: Dr. Cannon, you have used three separate equity-return tests to investigate the current and prospective cost of equity for the benchmark Canadian utility. What relative weights do you attach to these tests for arriving at your overall assessment for the benchmark utility, and why?

A. It is my judgment that the appropriate weights are 60% for the ERP test, 15% for my DCF test, and 25% for the CE test.

In addition to its strong and well-understood theoretical underpinnings, I have assigned primary weight to the ERP test for the following reasons:

(1) It is the equity-return test that is most highly regarded among Canadian regulatory boards;

(2) It is the test in which the automatic adjustment formula used by NP and many other Canadian utilities is grounded;

(3) There has been an abundance of creditable investigation of historical and forward-looking MRPs in recent years, and this work has given me greater confidence in the reasonableness of my ERP-based, cost of equity estimates for the average-risk Canadian utility;

(4) I am not aware of any capital market developments that have reduced the relevance or usefulness of using long Canada yields as the base from which to gauge utility *equity* return requirements or costs of *equity* capital; and

(5) The period when market-based measures of relative investment risk were distorted by the "Nortel/tech bubble" effect has finally passed, restoring the full value of the beta and SD(r) risk gauges used in the ERP test.

I attach much less weight to my Comparable Earnings results (and less than I used to during the 1980s and 1990s) for the following reasons:

(1) A much fewer number of Canadian firms now qualify as low-risk industrials than in previous years and hearings, even though I have used the same selection process consistently since 1990. With fewer firms, the credibility of the results is reduced.

(2) The importance of *survivor bias* in interpreting the results of the Comparable Earnings test has become clearer to me in recent years, as I have watched firms drop out of my industrial sample (e.g., Bombardier, Moore Corp, Quebecor Inc.). It is reasonable to believe that, in general, surviving firms will have brighter prospects and higher returns than non-survivors.

(3) It has become evident over time that a wide range of companies, with the acquiescence of their auditors, have been "managing" or "fudging" their financial statements in ways that overstate achieved returns. The growing prominence of stock options in executive compensation is considered to be one of the motivating causes for this trend toward the more aggressive (and sometimes fraudulent) accounting representation of company financial performance. This aggressive accounting often manifests itself:

- through frequent re-statements of previous years' results;
- through the classification of capital gains and other *positive* extraordinary items as regular income and in the computation of reported ROCEs;
- through the exclusion of restructuring costs and losses on discontinued operations in the ROCE calculation; and
- by the manipulation of the assumed future return on pension fund assets so as to alter the level of the current pension expense requirement.

Until recently, the widespread corporate reporting of, and focus on, EBITDA returns and "pro forma earnings" was also a manifestation of the deterioration in the *quality* of corporate earnings reports and ROCE figures.

(4) It is now clear that corporate profits and ROCEs have been *overstated* in past years by most companies' failure to *expense* compensation-related stock option grants. The degree of overstatement, which might have been considered negligible up until the mid-1990s, grow significantly during the 1995-2005 period as companies relied increasingly on stock options to compensate their employees, particularly their senior executives.

Finally, I attach only a modest 15% weight to the results of my DCF test, for the following reasons:

(1) The DCF test typically relies to some extent on securities analysts' forecasts of future earnings and dividend growth rates – as I have done in my DCF-based evidence. However, for whatever reason, publicly-available forecasts from I/B/E/S or other financial services have been restricted to fewer and fewer Canadian utilities over time.

(2) Even where analysts' growth projections are available, in recent years the extent to which "sell-side" analysts – in making their earnings and growth rate forecasts – have been labouring under the need to assist their investment banking colleagues secure or appease corporate finance clients with "favourable" forecasts has become increasingly apparent. As a consequence, I now have somewhat less confidence in analysts' consensus future earnings and dividend growth rate projections than I once did, although I have always recognized that these projections were biased on the high side because of the analysts' predominant focus on the "if all goes well or as planned" scenario, when forecasting corporate results, with little recognition of possible future pitfalls or disasters.

(3) The DCF test is based, in part, on a projection of the subject utility's future DPS growth rate. Consequently, if a regulatory board accepts a cost-of-equity value derived solely on the basis of DCF test results, there may be a presumption that future boards will provide the utility with sufficient earnings growth to achieve the DPS growth assumption built into the test. But this presumption would, of course, be speculative, as one board cannot bind future boards.

(4) Application of the DCF test is also potentially compromised by the often-cited problem of *circularity*. Since DCF findings generally rely on assessments of the DPS-growth-rate expectations of investors which, in turn, are conditioned to some extent on regulators' future rate awards, this has the appearance of regulatory boards basing their decisions on a set of expectations that they may have a hand in forming. This problem is most serious when the future DPS growth rate is estimated solely by looking at the "sustainable growth rate", which is found by multiplying the firm's projected earnings-retention ratio by its expected future ROCE.

(5) The use of the DCF test implicitly assumes that the MV/BV ratio implied in the share price used to quantify the dividend yield is, in some sense, reasonable for regulatory purposes. However, this may not always be true. Rather, the utility's share price may be elevated or depressed by unreasonable expectations or fears, respectively, making it an inappropriate guide for establishing regulatory return awards.

Q: Using the test weights you have just discussed, what do you find to be the fair and reasonable equity-return award for the benchmark Canadian utility for 2008?

A: **I conclude that the appropriate equity-return award for the benchmark Canadian utility for the 2008 test year lies in the range of 7.5% to 7.92%.** The calculation used to arrive at this range is shown in the table below:

	Test Result For 2008	Appropriate Weight	Factor
	%	%	%
ERP test	6.6 – 7.0	60	3.96 – 4.20
DCF test	7.3 – 8.5	15	1.09 – 1.27
Comparable Earning test	9.8	25	2.45
	Total		7.50 – 7.92

Q: Finally then, Dr. Cannon, what rate of return do you recommend that the Board allow Newfoundland Power the opportunity to earn on the common equity portion of its rate base for the test year?

A: As discussed in Section III.C of my evidence, NP is demonstrably less risky, in an overall investment risk sense, than the benchmark Canadian utility. In Section III, and with the help of the analysis set out in Schedule 24 of Appendix B, I determined that a downward adjustment of 12 to 15 bps to NP's allowed return on equity is warranted as result of its lower-than-average, or lower-than-benchmark, equity risk exposure. Factoring this risk adjustment into my assessment and rounding upward, **I recommend that the Board allow Newfoundland Power the opportunity to earn a return in the range of 7.4% to 7.8% on the equity capital invested in its regulated operations for the 2008 test year.**

Q: Dr Cannon, while you have not been asked to express a view as regards whether the Board should or should not approve the Company's proposal to move to accrual accounting for its other post-employment benefits (OPEBs), there is obviously a linkage between the outcome on this issue and the projected credit metrics for NP that are associated with the acceptance of any given equity-return recommendation. Please explain how you have treated this issue in preparing your cost-of-equity evidence.

A: The cash-versus-accrual accounting for OPEBs issue, with its significant cash flow implications for both the Company and its ratepayers, is certainly an issue for NP's bondholders and directly impacts the risk, and possibly the ratings, associated with NP's bonds. At present, the Company uses the cash basis for its OPEB accounting, and a switch to accrual accounting would be seen as lowering the risk of the Company from its creditors' perspective, as more annual cash flow would be available to service their debts. The impact on shareholder risk is less direct but certainly works in the same direction, with the switch to accrual accounting for OPEBs lowering shareholder risk to some extent. I have not specifically factored the outcome on this issue into my required equity-return analysis. Undoubtedly, however, Board approval for NP to adopt accrual OPEB accounting would lower the Company's overall risk as compared to the situation it faced at the 2003 GRA and further justify my recommended 7.4% - 7.8% range for NP's allowed equity return for the test year.

Q: Will an allowed equity return in the range of 7.4% to 7.8% for 2008 compromise NP's *financial integrity*?

A: No, it will not. In arriving at this assessment, I have assumed (1) that the Company's deemed common equity ratio for rate-making purposes will remain at 45% and (2) that NP will be allowed to switch the accounting for the costs of its other post-employment benefits from a cash basis to an accrual basis, to be consistent with the treatment of the costs of its employees' pension benefits. On this basis, NP's projected pre-tax interest coverage ratio will be between 2.28 and 2.35 times, its cashflow interest coverage ratio will be between 3.00 and 3.04 times, and its cashflow-to-debt percentage will fall between 14.97% and 15.29%. None of these projected test-year credit metric values would threaten NP's current bond ratings from Moody's or DBRS, according to the criteria set out in footnote 37 on page 55 of Volume 1, Section 3: Finance of the Company's Application. Furthermore, an equity return in the 7.4%-to-7.8% range would result in an Earnings Test Interest Coverage Ratio value, with respect to the Company's First Mortgage Bond Trust Deed, in the range of 2.38-to-2.45 times – far above the 2.0 times threshold required to enable NP to continue issuing additional First Mortgage Bonds.

VI. THE AUTOMATIC ADJUSTMENT FORMULA

Q; Dr. Cannon, have you examined the Company's proposed changes to its automatic adjustment formula (AAF) that will be in use to adjust its rate of return on rate base and customer rates during years subsequent to the test year?

A: Yes, I have. In particular, I have examined NP's proposal to link changes in the riskfree rate component of its return on equity (ROE) calculation to (1) the predictions contained in the November issue of the *Consensus Forecasts* publication for the 10-year Canada bond yield for the subsequent year plus (2) a spread between 30-year and 10-year Canada yields based on the observed average 30-versus-10-year spread during October of the contemporaneous year. The Company's proposal in this regard mirrors the approach followed by the National Energy Board.

The Company's proposal is intended to replace its current procedure where it establishes the forward-looking riskfree rate for its AAF by averaging the daily (closing) *ask yields* for the three most-recently-issued series of long-term marketable Government of Canada bonds for the last five trading days in October and the first five trading days in November of the year prior to the year when the AAF-based ROE will apply.

Q: What is your view about the appropriateness of NP's proposal to adjust the procedure for setting the riskfree rate component within its AAF?

A: Based on my studies, I believe that NP's proposed change is a bad idea from the perspective of its ratepayers and from the perspective of regulatory fairness and transparency. There are two reasons for this. First, *Consensus Forecasts* predictions have proven to be both biased and relatively poor predictors of subsequent-year 10-year Canada yields. Second, NP's current procedure produces forecasts of the subsequent-year average 30-year Canada yield that are far superior to those that would have resulted from the implementation of its current proposal in earlier years. In this connection, it is disheartening to find out that the Company chose to recommend a significant change to the design of its AAF without first commissioning a study of either of these forecast-reliability issues (see Responses to CA-NP-132 and CA-NP-133).

Q: Please elaborate on your first point about the unreliability of the *Consensus Forecasts'* predictions.

A: Typically, the usefulness of a rate forecast is evaluated by comparing its historical accuracy with that of some naively-constructed forecast procedure, such as extrapolating past trends or, even more simply, by assuming that the current actual yield is the best forecast for the corresponding yield in the future. This latter approach is the one I have taken to evaluate the *Consensus Forecasts* predictions. To be specific, for the naïve approach I have taken the average actual benchmark 10-year Canada bond yield during the last two weeks of October and the first two weeks of November of one year as the forecast for the average 10-year Canada yield for the subsequent year. I have then compared the forecasts resulting from this naïve approach with those that would have resulted using the average of the 3-month and 12-month-forward *Consensus Forecasts* predictions, from the November issue of this publication, for the forecast of the 10-year Canada yield expected to prevail during the subsequent calendar year.

The pro forma historical results of using both the naïve approach and the Company's proposed procedure, along with the subsequent-year actual average 10-year Canada yields, are shown in Schedule 25 of Appendix B.

Q: Please describe your findings as shown in Schedule 25.

A: When the predictions based on the naïve model are compared with the subsequent year's actual average 10-year Canada yields over the 13-year, 1993-through-2006 test period, the mean absolute forecast error is 46 basis points (bps), the average forecast error (with positive errors cancelling out negative errors) is 8 bps, and the maximum error is 164 bps, as summarized in the table below with the "error" defined as the model-derived forecast minus the subsequently-observed actual rate.

On the other hand, using the Company's proposed approach to obtain the forecast for the 10-year rate would, over the past 13 years, have produced a mean absolute error of 57 bps, an average error – in this case, over-estimate – of 25 bps, and a maximum error of 163 bps.

For 1993-2006:	Average Error	Mean Absolute Error	Maximum Error
Prediction Model	(in bps)	(in bps)	(in bps)
Naïve approach	+8	46	164
NP's proposed approach	+25	57	163

Q: How do you interpret these findings?

A: These findings indicate that the *Consensus-Forecasts*-based predictions have **not** been as reliable as the naïve model in forecasting year-ahead average-annual long Canada rates. Charitably-speaking, there has been no information value in the consensus predictions of the business economists surveyed for the *Consensus Forecasts* publication. Moreover, the consensus forecasts that the Company proposes to employ within its AAF have tended to predict 10-year Canada yields that are 25 bps higher, on average, than those which subsequently prevailed during the following calendar years. This persistent upward or over-estimate bias within the *Consensus Forecast* predictions will disadvantage NP's ratepayers to the tune of almost $1.0 million annually if the Board approves the Company's proposal.

Q: Has there possibly been an improvement in the relative accuracy and a diminution in the upward bias of the consensus forecasts since the fall of 1999, when the Company first began to utilize its Board-approved AAF?

A: Unfortunately, this has not happened, as shown in the table below – which summarizes the findings from Schedule 25 for the years from 1999 onwards. Indeed, both in absolute terms and relative to the naïve approach, the forecasting capabilities of the *Consensus-Forecasts*-surveyed economists have deteriorated, and their intended or unintended upward bias has gotten worse (42 bps for the past 7 years versus 25 bps for the entire 13-year period). Indeed, the Applicant should have been alerted to this significant upward bias in the *Consensus Forecasts* numbers through its Response to CA-NP-132, which shows that the consensus forecasts exceeded the subsequently-

observed 10-year Canada bond yields during 5 of the past 6 years and by an average of 47 bps over this 6 year (2001-2006) period.

For 1993-2006:			
Prediction Model	Average Error (in bps)	Mean Absolute Error (in bps)	Maximum Error (in bps)
Naïve approach	+18	27	44
NP's proposed approach	+42	46	99

Q: What is the second reason why you would advise the Board against approving the Company's proposed change to its AAF?

A: The second reason that the Board should decline to approve NP's proposal with regard to setting the riskfree rate component of its AAF is that the Company's current approach is far superior to the proposed method for forecasting subsequent-year 30-year Canada bond yields – which is, after all, the purpose of the exercise. My conclusion here is based on the results of back-testing the Company's current and proposed approaches, as far as data availability will allow, and comparing the resulting rate forecasts with the subsequently-observed, annual-average, 30-year benchmark Canada bond yields. The analysis and results are set out on page 1 of Schedule 26 in Appendix B, with the supporting input data – other than that which was provided by the Company in its Response to CA-NP-133 – shown on page 2 of Schedule 26.

Q: What does your Schedule 26 analysis show?

A: Had the Company used its current procedure for establishing the 30-year-Canada riskfree rate for every year from 1998 through 2006, the average forecast error would have been 9 bps (showing a little bit of up-side bias as rates generally declined over this period), the mean absolute error would have been 32 bps, and the maximum forecast error would have been 68 bps. On the other hand, had NP used its currently-proposed procedure during every year over the 1998-2006 period, the average error and up-side bias would have been a substantial (and expensive to ratepayers) bias of

44 bps, its mean absolute forecast error would have been 47 bps and its maximum error would have been 109 bps. It is clear that, historically, the Company's proposed procedure would have (1) produced far less reliable forecasts of subsequent-year 30-year Canada yields than its currently-approved procedure and (2) imparted a consistent and substantial upward bias to the AAF-determined ROE – to the detriment of the Company's ratepayers.

Q: How do you respond to the observation that many other Canadian regulatory boards have approved and use AAFs based on a procedure similar to that which the Company is proposing based on *Consensus Forecasts* numbers?

A: While there is some virtue from a regulatory-policy perspective in using forward-looking test-year input values in the rate-setting-process to minimize *regulatory lag*, in this case of the riskfree-rate component of the AAF, the perception of this virtue simply comes at too high a cost to ratepayers. If it has not already happened, eventually ratepayer advocates in other jurisdictions will discover the persistent bias in the *Consensus Forecasts* predictions and militate to effect a change in the design of the AAFs used in their jurisdictions.

Q: Dr. Cannon, at the start of this section of your evidence you expressed the view that NP's proposal to use the *Consensus Forecasts* predictions within its AAF is inappropriate from a "regulatory fairness and transparency" perspective. In the light of your empirical findings, please explain what you mean by this.

A: I believe that the general concept of employing automatic ROE or return-on-rate-base adjustment mechanisms (AAMs) to reduce the cost and frequency of full-blown rate hearings is a good one. However, I also believe that, in assenting to the use of AAMs, both regulatory boards and ratepayers have a legitimate right to expect that these AAMs will be implemented in an unbiased and transparent manner. Consequently, if a utility proposes and its regulatory board accepts a design feature within an AAM that incorporates a known, persistent, allowed-ROE-enhancing bias that ratepayers may not be aware of, then these acts will, in effect, impose a hidden tax on ratepayers – which is undoubtedly an affront to regulatory fairness and transparency.

Q: What then do you recommend the Board do with regard to NP's proposal to change its AAF to use *Consensus Forecasts* predictions and 30-versus-10-year Canada yield spreads in the determination of the riskfree rate component of the AAF?

A: First, I recommend that the Board deny the Company's request for the aforestated change to its AAF. Furthermore, the Board should require that NP establish that there is no consistent bias in the *Consensus Forecasts* predictions (at least those in the November issue) before the Board will entertain a similar change proposal from the Company at a future GRA.

Second, in the light of the excellent results produced by the Company's current approach to forecasting 30-year Canada yields for use in annually up-dating ROE values within its AAF, as well as considering the simplicity and transparency of its current procedure, I recommend that the Board affirm its approval for the existing procedure. To borrow a hackneyed expression, "if it ain't broke, don't fix it!"

Q: Based on your earlier cost-of-capital analyses and other information, are there additional recommendations that you wish to make with respect to NP's Automatic Adjustment Formula?

A: Yes, there are. I believe that the riskfree rate component of the AAF should be set at 4.87%, based on the mid-point of my 30-year Canada bond yield forecast for the test year. Furthermore, based on the totality of my equity-return studies, as set out in Section V of my evidence, I recommend that the Board approve an equity risk premium of 2.73% for use in the Company's AAF.

In addition, it is my view that NP has failed to live up to its obligations under the trigger mechanism in its current Automatic Adjustment Mechanism (AAM). As Grant Thornton points out on page 24 of its Report dated July 27, 2007, NP earned a ROE of 9.46% on its book common equity during 2006 when the AAF-determined allowed return on common equity for 2006 was 8.77%, or 0.69% below its achieved return. I believe that this difference – being in excess of 0.50% – should have required the Company to file a report with the Board explaining the reasons for the 69 bps

difference between its actual return and the AAF-determined allowed return on equity for 2006. I should note that there is no presumption in my position here that any particular achieved return – whether above 8.77% or 9.24% – is excessive. Rather, to gauge the on-going effectiveness of NP's AAM, the Board needs to understand the nature and sources of the differences that emerge overtime between achieved returns and AAF-determined returns.

Finally, it is my observation that the *Globe and Mail* no longer publishes daily rate/yield quotes for individual Government of Canada bond series. Consequently, if the Board accepts my position that the existing 30-year Canada yields, rather than the *Consensus Forecasts'* 10-year Canada yield forecasts, should remain the base for setting the riskfree rate within the AAF, then a new source of information about these 30-year Canada bond yields will have to be prescribed. The Bank of Canada website would be a logical and impartial source of this information on a daily basis.

VII. DISCUSSION OF THE PREFILED EVIDENCE OF MS. KATHLEEN MCSHANE

Q: Please comment on Ms. McShane's **Comparable Earnings** analysis.

A: My *first* reservation about Ms. McShane's Comparable Earnings (CE) analysis is her choice of the time period for observing industrial returns. She acknowledges that because industrial returns are cyclical, their measurement "should encompass an entire business cycle, covering years of both expansion and decline," in order to be reflective of a "future normal" business cycle (see Volume 3, Section 1, page 58). Her choice to employ the 13-year period from 1994 to 2006, however, is a highly biased implementation of this principle. None of her 13 years is a recessionary year and none is a year of less than 1.5% real growth in the Canadian economy. Rather, all 13 years are expansionary years – some at slower rates but still in excess of 1.5% p.a., and some at faster rates up to 5.5% p.a. Contrary to her principles, she has chosen to ignore the 3-year, 1990-1992 recession, while including all the expansionary years since 1993. This can be seen clearly in the graph of the Canadian real GDP provided in Response to CA-NP-419. Ms. McShane's time period for her CE analysis is therefore less than one entire business cycle and highly skewed toward rapid economic expansion with its beneficial, upwardly-biased impact on corporate returns. This is confirmed by the fact that when the returns for Ms. McShane's Canadian industrial sample are extended back through 1990 and up-dated to include 2006, the sample mean return declines by 1.2%.

In Response to CA-NP-280, Ms. McShane acknowledges that her CE test period contains no recession years, but she justifies her time-period choice by stating "the entire period 1994-2006 can be viewed as a business cycle" [note: she does not say "entire business cycle"], "since it includes a balance of years of expansion (above trend growth), economic downturns" [but there are no "downturns" during the 1994-2006 period … every year had positive growth in excess of 1.5%] "and growth at approximately trend (average) levels." This was the lamest excuse for excluding recession years and "cherry-picking" a favourable CE test period that I had ever encountered until I read the next line from Ms. McShane's CA-NP-280 Response, where she states: "The year 1993 is excluded from the measurement of the business cycle for the purposes of applying the comparable earnings test to Canadian industrial companies due to the hang-over of the effects of the 1990-1992

recession," which can reasonably only be interpreted as her purging her CE test and its results of any of the lingering influences of recessionary conditions on corporate equity returns. If this is not "cherry picking" an upwardly-return-biased CE sample period, then I don't know what is.

It should also be noted that Ms. McShane's industrial sample means for 1997 and 2005 in her original and updated Schedule 26 are incorrect – the sample mean for 1997 is 17.2% and for 2005 is 14.0%.

My *second* concern with Ms. McShane's Canadian CE study centers on the industrial return figures she uses for some of her sample companies. Given the recent revelations of widespread obfuscation of corporate profit reporting (e.g., focusing investors' attention on EBITDA and "pro forma" figures, instead of GAAP earnings) and the outright "management" or "doctoring" of reported earnings (e.g., frequent earnings re-statements or revisions to re-write past history, the classification of capital gains as regular income, classifying losing divisions as "discontinued" in order to dis-own their losses for return-calculation purposes, "cookie jar" accounting, questionable revisions to assumptions about the future returns on pension assets, etc.), it would seem prudent for Ms. McShane to examine her individual-company returns data and "cleanse" them of at least the obvious distortions. For example, in Schedule 26 of her Statistical Exhibit, she has **Empire Company** earning a 69.1% return in 2000 – virtually all of which came from including the proceeds of the company's selling its investment in Hannaford Bros. Co. Similarly, Ms. McShane's Schedule 26 figures peg **Weston's** 1998 ROCE at 37.3% – a value that can be reached or explained only by including the proceeds of Weston's sale of its E.B. Eddy Limited (forest products) subsidiary in the annual earnings figure used to compute ROCE, even though these sale proceeds are clearly identified as an "unusual item" in Weston's 1998 financial statements. Ms. McShane's 52.7% ROCE figure for **Algoma Central** for 1997 would, instead, have been 16.3% if she had not included the $52.5 million after-tax gain that Algoma Central made on the sale of forest lands in her return calculation. Similarly, almost two-thirds of the 38.4% ROCE value that Ms. McShane uses as her 1997 return for **Torstar Corporation** is accounted for by the after-tax gain on the sale of its investments in two companies named Miles Kimball and Hebdo Mag. The **Thomson Corporation**, one of Ms. McShane's sample firms, is another example of a company that

perpetually distorts the reflection of the earning capabilities from its business operations by including gains and losses on the disposal of its subsidiaries and investments in its earnings calculation. For example, over a quarter of Thomson's before-tax earnings for 2001 are attributable to these capital gains, and more than three-quarters of its 1998 earnings available for common shareholders are attributable to the after-tax gain the firm made on the sale of its Thomson Travel Group business that year. Ms. McShane appears to be oblivious to these contaminations in Thomson's earnings statements when she calculates annual equity returns for this company. These are but 6 examples of the distorted figures that Ms. McShane ought to have identified and corrected if she wished the Board to have confidence that her CE results could serve as an appropriate proxy for the fair returns for NP – whose return allowances certainly do not contemplate including the gains and losses on asset sales or the sales of subsidiaries as part of the equity-return computation.

When Ms. McShane was questioned in CA-NP-418 about her extraordinary 69.1% ROCE value for Empire Company for the year 2000, her defense for not cleansing or correcting this value was that "by focusing on the returns of a sample of companies and the achieved returns over *a full business cycle* [italics added], the impacts of non-recurring elements of earnings, positive and negative, would be expected to balance out." Well, first of all, as we have shown, Ms. McShane's industrial-sample ROCEs do not cover a "full" business cycle. But, more importantly, surely the Board will have more confidence in the results of a CE test where the proper ROCE data has been used consistently throughout the analysis, than in a test, like that presented by Ms. McShane, where it is left to chance and wishful thinking that the errors in the data employed will somehow cancel one another out.

If the proper ROCE values for Empire Company for 2000 (3.9%), for George Weston for 1998 (11.9%), for Algoma Central for 1997 (16.3%), for Torstar for 1997 (12.8%), for Thomson for 1998 and 2001 (7.9% and 4.9%, respectively), and for TVA Group (that Ms. McShane mentions in her Response to CA-NP-418) for 2001 (-9.6%), are used to replace the corresponding inappropriate and preposterous values that Ms. McShane incorporates in her prefiled CE evidence, then her industrial-sample mean value for the 1994-2006 period declines from 12.5% to 11.9% and the sample median value falls from 12.5% to 11.5%

Considering the first two points I have raised together, if we correct for Ms. McShane's inappropriate ROCE data and extend the time period for her sample ROCE values back to 1990, we get the proper base for her CE test, which is the entire-business-cycle "raw" average industrial returns of 10.8% (based on two-thirds weight to sample median and one-third weight to sample mean values).

The extent of Ms. McShane's downward relative-risk adjustment to her "raw" CE sample-average return findings is my *third* area of concern about her CE test. As discussed, in Volume 3, Section 1, at page 58, Ms. McShane acknowledges that her sample industrials are "slightly higher risk" than the benchmark utility. To reflect this in her CE-based return result for the benchmark utility (and by extension, for NP), she reduces her indicated return from the 12.5%-12.75% range (with a mid-point of 12.63%) to 12.5% or the lower end of her CE range – in other words, a downward relative-risk indicated-return adjustment of a mere 13 bps. In my judgment, this downward adjustment is much, much too small, given that the riskiness of her typical or benchmark utility is only 55% as great as that of her typical industrial firm, as the following table shows when all four risk measures are weighted equally. This table is based on Ms. McShane's 1994-2006 data (except as indicated by the *, where the data is from Dr. Cannon's evidence preparation and is shown in Schedule 27 of Appendix B of this evidence), with all figures equal to two-thirds of the sample median and one-third of the sample mean.

Risk Measures:	Price Beta 2001-06	Std Dev of Investment Returns, 2001-06, %	Std Dev of Annual ROCEs, 1994-2006, %	SEE of Annual ROCEs, 1994-2006 %
Ms. McShane's average or benchmark utility:	0.33	4.31	2.12*	1.39*
Ms. McShane's typical industrial:	0.38	5.63	6.23	5.98
Benchmark utility as a percentage of typical industrial:	86.8%	76.6%	34.0%	23.2%

Finally, my *fourth* concern with Ms. McShane's CE evidence is her calling on returns from a sample of 159 U.S. industrial companies to check the reasonableness of the return range she finds with her Canadian sample (Volume 3, Section 1, page 59). First, she

acknowledges that the firms in her U.S. sample are riskier than those in her Canadian sample. More fundamentally, however, when we go beyond Canadian industrial returns there is little realistic hope that analysts and the Board will be able to understand and effectively make the numerous adjustments that would be required to translate corporate accounting returns in the U.S., or any other foreign country, into something that could legitimately be considered a "comparable" to Canadian utility returns. Undoubtedly, adjustments would be required to account for such factors as: different corporate tax rates and structures; different accounting rules; differences in the use of stock option compensation and how its is accounted for; foreign currency translation effects; differences in environmental regulations and labour laws; withholding taxes; differences in the tax treatments of personal dividend income and inter-corporate dividends; differences in the ease with which corporations can repurchase their own common shares (thus effectively pushing up their ROCEs); and differences in the degrees of corporate concentration and effective competition within the Canadian economy versus the U.S. or some other foreign market. I do not believe that the Board is prepared to undertake this task, especially when appropriate industrial samples can be constructed from among publicly-traded Canadian companies.

Q: Ms. McShane uses two versions of the **Equity Risk Premium** test in her prefiled evidence. Please give us your assessment of her ERP test based on risk adjusting the market risk premium (MRP) that she covers on pages 32 through 46 in Volume 3, Section 1 of the Application.

A: I have a number of criticisms of this version of Ms. McShane's ERP test. *First*, she uses only the long-term government bond yield as her proxy for the "riskfree" rate, even though she acknowledges that long-term government bonds are subject to considerable "market risk" and experience "a larger change in price for a given percentage change in interest rates" than short-term bonds or T-bills (see Response to CA-NP-273, answer (b)) – that is, long-term government bonds embody considerable *price volatility risk*. Nowhere does she attempt to adjust for the fact that long-term government yields are **not** truly riskfree, by, for example, backing out an estimate of the current *term premium* or *maturity risk premium* from existing or forecasted 30-year Canada bond yields or long-term U.S. treasury yields.

My *second* reservation with Ms. McShane's ERP test based on risk adjusting the MRP is that while she acknowledges in several places that (a) the ERP test is a *forward-looking* concept that reflects investors' expectations about the future and (b) that, "if available, direct estimates of the forward-looking risk premium should supplement estimates of the risk premium made using historical data as the point of departure" (Volume 3, Section 1, page 32, lines 876-880), she gives no credit to, nor does she use the results of, the many recent studies of forward-looking market (equity) risk premiums – many of which I reviewed in my own ERP evidence in Section V.B.. There is now virtually universal agreement among academics and practitioners that historical U.S. MRPs derived from 20th-century historical data overstate the MRPs that investors can reasonably expect over the next few decades. Ms. McShane indicates that she is aware of these studies (Volume 3, Section 1, page 40, lines 1083-1085), but does not reference any of them or reveal and use any of their results. Rather, she focuses almost all of her analysis on backward-looking data from the 1947-2006 period and fails to give serious consideration to evidence from the growing body of future-oriented MRP studies.

My *third* concern with Ms. McShane's ERP evidence centers around the rather inadequate 0.65-0.70 relative-risk adjustment she makes to her estimated MRP to get an estimate of the appropriate ERP for the benchmark Canadian utility (see Volume 3, Section 1, page 46, lines 1247-1249). With her 0.65-0.70 adjustment factor, Ms. McShane is implying that the benchmark Canadian utility is 65% to 70% as risky as the typical firm in the overall market (i.e., the S&P/TSX Composite Index in the case of the Canadian stock market). However, this adjustment factor significantly overstates the relative riskiness of the average-risk, benchmark utility, leading, in turn, to an over-stated estimate of the benchmark utility's required ERP.

Ms. McShane arrives at this overly-generous 0.65-0.70 adjustment factor by focusing (a) on "adjusted betas," as opposed to "raw" betas, as her measure of relative systematic market risk and (2) on the ratios of the standard deviation of returns (SD(r)s) for the Utilities Index versus the SD(r)s for other S&P/TSX Sector Indices (see Schedule 11 in her Statistical Exhibit), as opposed to the SD(r)s for individual utilities versus the SD(r) for the typical firm in the S&P/TSX Composite Index, as her measure of relative total investment riskiness.

With respect to her use of "adjusted betas," Ms. McShane acknowledges that historical "adjusted betas" are not designed to be predictors of future values of the true betas for firms or utilities (Response to CA-NP-277, part d), but rather are better predictors of return. Not only does Ms. McShane not provide any evidence or references to support the latter part of this assertion, but I am sure that this Board and other regulatory boards will be surprised to find that "adjusted betas" are not intended to be a measure of future relative risk. The proper measure of relative, individual-company, systematic risk is the "raw" rate-of-return-based beta value – the one I have used throughout my earlier evidence.

With regard to total investment risk as measured by SD(r), when Ms. McShane uses SD(r) values for the S&P/TSX Composite Index as a whole, and for various sectoral indices, the measured risk values are already reduced, via the diversification-across-all-firms-in-the-index effect, and do not reflect the extent of the SD(r) risk faced by individual firms or utilities within the indices. The proper way to gauge the relative total investment risk exposure for an individual firm and the benchmark utility is to compare individual SD(r) values with the corresponding value for the typical stock within the S&P/TSX Composite Index (for use in the ERP test) or within the sample of low-risk industrials (for use in the CE test). When asked about her initial failure to provide evidence with respect to individual industrial-company and utility SD(r) values, it was stated that "Ms. McShane does not use the standard deviations for individual companies because they give equal weight to each company regardless of market size" (Response to CA-NP-275, part b), which is a curious excuse since she uses individual-firm beta values for characterizing her Canadian utility and industrial samples, in Schedules 13 and 25 respectively, without any apparent need to weight these beta values by associated-company market size.

The upshot of this discussion is that if Ms. McShane is going to rely solely on historical beta and SD(r) evidence to find her relative-risk adjustment factor within the context of the adjusting-the-MRP ERP test, she should use a factor of 0.42-0.52, as I have calculated in Schedules 12 and 13 of Appendix B, based on market risk values for the 60 months ending June 2007.

Q: What is your assessment of Ms. McShane's "Utility-Specific ERP Analysis" using historic utility ERPs, as set out on pages 47-48 of Volume 3, Section 1?

A: This analysis is a highly selective and incomplete interpretation of the historical evidence for forward-prediction purposes, and should be dismissed completely by the Board. Ms. McShane is correct in suggesting that historic government bond returns have risen and averaged a high level over the past 50 years because of the dramatic drop in interest rates since the early 1980s. What she does **not** acknowledge, but is equally true, is that historic *utility* returns in the U.S. and Canada have risen and been elevated for much the same reason – that is, as interest-sensitive equities, their share prices (and hence experienced rates of return) rise as interest rates fall.

But then Ms. McShane asserts (Volume 3, Section 1, page 48, lines 1298-1303) that, as the decline in rates from the early 1980s to today, with their associated high bond returns, cannot be repeated, future bond return expectations should reflect current coupon yields and the likelihood of relatively low interest rates going forward. What she should *also* have said – but did **not** – is that, in the same rate environment that she is assuming for her bond return projection, utility returns will also be much lower than their historical averages, because utility share prices going forward will not get the high-octane boost from falling interest rates that they experienced over the past 25 years. Consequently, the utility ERPs based on the difference between *future* utility returns and *future* bond returns will be much, much lower than the 5.0%-5.5% range that Ms. McShane would have us believe at the bottom of page 48 of her evidence.

Q: Please give us your view of Ms. McShane's "Utility-Specific ERP Analysis" based on DCF-derived utility costs of equity capital, as set out on pages 49-51 of Volume 3, Section 1, of NP's Application.

A: My *first* reservation about Ms. McShane's analysis in this section of her evidence is that it is based on results using a sample of U.S. utilities. I do not accept Ms. McShane's premise that "U.S. and Canadian utilities are reasonable proxies for one another" because, not that the utilities themselves are so different, but rather because the regulatory and

financial market environments that shape their investors' experienced returns and forward-looking expectations are so different.

My *second* criticism of Ms. McShane's DCF-based ERP test is that she inserts Canadian data input values into ERP regression models (shown at the bottom of pages 50 and 51 of Volume 3, Section 1) that are themselves derived from historical U.S. data. This is not only an improper statistical analysis technique, but it is even more problematic since Ms. McShane has acknowledged, at lines 1008-1010 on page 37, that historically there have been significant differences between Canadian and U.S. ERPs, and on page 47 at lines 1280-1285, significant differences between Canadian and U.S. *utility* ERPs. This issue was addressed in CA-NP-283. After reading the Response to CA-NP-283, it is still my view that the regression studies shown on pages 50 and 51 of Ms. McShane's Direct Testimony are simply a "smoke screen" for appearing to legitimize the proposition that, because U.S. utilities have historically had higher ERPs than those enjoyed by Canadian rate-regulated (and protected) utilities, Canadian regulatory boards should simply raise the ERP awards for Canadian utilities to match those in the U.S. – regardless of the differences between the Canadian and U.S. environments.

My *third* concern with this version of Ms. McShane's ERP test is that most of it is **not** ERP test evidence at all, but simply a re-casting of DCF model results made to appear as ERP evidence. What she really does in this section of her evidence is, first, to use the **DCF model** to estimate U.S. utility **costs of equity capital** and then, from these, she derives *implied* ERPs, from which she purports to develop ERP results – as stated at the top of page 50 and shown in Appendix C of her evidence. But these are **not** ERP findings at all, but rather the results of an application of the DCF test.

For example, when, at lines 1350-1352 on page 50 of her evidence, Ms. McShane concludes that "the data suggest that there has been an inverse relationship between the risk-free rate (as proxied by the long-term government bond yield) and utility equity risk premiums," the actual relationship she has found is that DCF-based utility *costs of equity capital* are less-than-100% responsive to changes in long government yields. This is hardly a surprising result. **But it is DCF evidence, not ERP evidence**, and should not be counted twice under both the ERP and DCF banners.

The reason that it is important to make this clarification is to point out that Ms. McShane is essentially *double-counting* the results and the impacts of the DCF approach to cost-of-equity estimation – once on its own within its own section (pages 52-54 of Volume 3, Section 1) and once again as a conceptual "fifth column" within her ERP test section. This, in effect, requires one to question whether the 75% weight that Ms. McShane ascribes to the attracting capital tests to justify her equity-return recommendation is inappropriately over-weighted in favour of (a) the DCF test results and (b) findings associated with U.S. utility-company data.

Q: What are your views with regard to the relevancy and usefulness of the results of Ms. McShane's **Discounted Cash Flow** test, that she briefly discusses on pages 52-54 of Volume 3, Section 1, and more fully in Appendix D in that section?

A: My *first* reservation with Ms. McShane's DCF evidence relates to her exclusive reliance on U.S. utility company data. There are simply too many differences in economic policies, accounting rules, corporate tax regimes, regulatory systems and norms, financial market conditions, etc. to rely 100% on U.S.-based results to estimate Canadian utility costs of equity capital and the appropriate allowed ROEs for these Canadian companies. Moreover, 100% reliance on U.S. data is not necessary, as perfectly good DCF studies based on a sample of Canadian utilities (with the average representing the Canadian – not U.S. – benchmark utility) can be completed, as I have shown in Section V.C. of my evidence. Ms. McShane's rationale for using only U.S. data – that is, that there are insufficient analysts' growth forecasts for Canadian utilities – would be more credible if securities analysts had a more reliable history of unbiased forecasts. But they do not, as Ms. McShane acknowledges when she refers to "the documented optimism of analysts' forecasts historically" at the bottom of page 4 of her Appendix D.

This, then, leads into my *second* concern with Ms. McShane's DCF test results – namely, their reliance of U.S. securities analysts' historical 5-year growth rate forecasts as assembled and published by I/B/E/S. As has been revealed over the past 8-9 years, there has been, especially among U.S. securities analysts, an incentive to, and job-related pressure to, inflate earnings growth forecasts to assist associated investment bankers with

their bonus-producing activities. Moreover, it is in the nature of the pro-forma earnings forecasting task that analysts focus on the "if everything goes as planned or expected" scenario, and rarely is any allowance made for the unforeseen events that knock earnings (and hence growth rates) down – precisely because they are "unforeseen." But that does not mean that these growth-crippling events do not occasionally occur. So there has been an upward bias in analysts' growth forecasts, and there are no studies of the reliability or accuracy of either I/B/E/S or Value Line earnings-growth-rate estimates completed in recent years to see whether the analysts' collective historical bias has diminished or disappeared. In the absence of such a study, I believe that the Board should be cautious about attaching too much credibility to U.S.-analyst-forecast-based DCF test results.

My *third* and final criticism of Ms. McShane's DCF analysis relates to her use of the two-stage version of the DCF model and, in particular, to her assumption that the second-stage, perpetual earnings growth rate (beyond the initial 5 years) for mature utilities will be equal to the projected long-run growth rate in the nominal GDP for the overall economy. This assumption is logically too-high, and it imparts a systematic upward bias to Ms. McShane's estimated utility costs of equity capital and ERPs. The second-stage growth rate assumption is, first of all, empirically suspect – utilities are generally mature firms and are bound to grow more slowly than newly-established firms and firms tied to new and expanding sectors of the economy within the overall growth matrix. Second, the growth-rate-equals-that-of-the-overall-economy-in-the-long-run assumption for second stage perpetual growth is illogical in the sense that it cannot be true for all firms unless there were never any new firms created. Starting from a zero base, new firms *must* grow faster than average to get to a sustainable, foothold size; consequently, all existing firms and utilities must grow at least slightly slower than the average, where the latter is the combination of the infinite initial growth rates of new firms and the, by-mathematical-necessity, slightly slower-than-average growth rates of existing and mature companies.

Q: Dr. Cannon, do you have any other comments on Ms. McShane's prefiled testimony?

A: Yes, I have one final point that has implications throughout Ms. McShane's testimony. In Volume 3, Section 1, on page 29 at lines 787-789 and again on page 30 at lines 823-825, Ms. McShane concludes that, at a 45% CER, investors would consider NP to be an

"average risk" Canadian utility, comparable to the benchmark utility, with respect to overall investment risk and, hence, warrant the benchmark utility's appropriate return on equity.

On the face of it, this assessment of NP's relative overall investment risk exposure seems to be inconsistent with the position taken in the Response to CA-NP-266, part (f), where Ms. McShane's view is that NP has a lower business risk than the typical firm in her sample of publicly-traded Canadian utilities from which she draws her characterization of the benchmark utility, while, at the same time, her capital structure and CER evidence show that NP also has a lower exposure to financial risk than all these sample publicly-traded utilities. Nevertheless, in her Response to CA-NP-268, she sticks with her categorization of NP as being "approximately in the middle of the pack" in terms of total (business plus financial) risk among Canadian regulated utilities because NP's "debt ratings (which provide a concrete measure of its relative total risk) are identical to the average of the operating companies listed in the table above," the latter being the operating subsidiaries of her Schedule 13 publicly-traded utilities.

The flaw in Ms. McShane's reasoning is that *debt ratings* measure the risk exposure of a company's bondholders and do not measure investment risk from the perspective of a utility's equity investors, as Ms. McShane acknowledges in Response to CA-NP-272. But, the allowed equity returns for rate-regulated utilities such as NP are supposed to compensate their shareholders for their shareholders' risk exposure, not for their bondholders' view of risk. By muddling bondholder risk together with shareholder risk, Ms. McShane has persuaded herself that the total investment risk to NP's shareholder is in the "average" category – thus deserving a benchmark-mirroring allowed ROCE – when the preponderance of quantitative and qualitative evidence clearly positions NP in the "lower-than-average-risk" category, warranting a lower-than-benchmark equity-return award from the Board.

APPENDIX A

SUMMARY OF BACKGROUND AND QUALIFICATIONS OF

DR. WILLIAM T. CANNON

Commerce '83 Teaching Fellow in Finance, School of Business, Queen's University

Education

1976 Ph.D. Business Economics, Harvard University.
- (1971-1974) Attended a joint doctoral program between the Harvard Business School and the Economics Department of Harvard College; Fields of concentration: Business Finance and Monetary Economics

1969 M.B.A. York University.

1967 B. Com. University of Manitoba.

Positions Held

2005 – present Commerce '83 Teaching Fellow in Finance, School of Business, Queen's University

1974 - 2005 Associate Professor of Finance, School of Business, Queen's University.
- Have taught in several Executive Development Programs offered by the Queen's School of Business

1971 - 1974 Employed as the Research Assistant to Dean Lawrence E. Fouraker
- Prepared case studies for, and taught some of the classes in, the Harvard Business School's Executive Program

1969 - 1971 Employed at the Head Office of The Bank of Nova Scotia as Assistant to the then Deputy Chief General Manager, Dr. Robert M. MacIntosh (subsequently President of the Canadian Bankers' Association)

Consulting Relationships and Experience

- Have advised the Ontario Energy Board in connection with the restructuring and regulation of Ontario's electricity distribution system in the areas of capital structure policies, allowed rates of return, performance-based regulation (PBR), and mergers, acquisitions, amalgamations, and divestitures.

- Have advised the Ontario Energy Board with respect to the March 1997 "Draft Guidelines on a Formula-Based Return on Common Equity For Regulated Utilities," and the Review of these Guidelines during 2003.

- Have advised the Staff of the Ontario Energy Board during the O.E.B. hearings in connection with Inter-City Gas' takeover of Northern and Central Gas (Nov.-Dec. 1984), Unicorp Canada's takeover of Union Enterprises (March-May 1985), Westcoast Energy's takeover of ICG Ontario (Sept.-Dec. 1989) and British Gas' takeover of Consumers' Gas (March-July 1990), and prepared and defended testimony in these cases; have also advised O.E.B. Staff and prepared evidence in connection with Gulf Canada's application to acquire (indirectly) shares in Consumers' Gas (Sept.-Oct. 1986) and in connection with Westcoast Energy's takeover of Union Energy in E.B.R.L.G. 36 (Oct.- Nov. 1992).

- Have advised the Ontario Energy Board in connection with its review of the policies and capital budgeting procedures surrounding the expansion of the natural gas distribution system in Ontario (E.B.O. 134).

- Have advised the Ontario Ministry of Environment and Energy in connection with the NEB's 1993 Inter-Coastal Pipe Line hearing and the proposed revision of the Undertakings of the Ontario gas distribution utilities to facilitate their diversification into non-gas-utility businesses.

- Have advised the Ontario Energy Board, the Government of Ontario, the Consumer Advocate of Newfoundland and Labrador, the B.C. Petroleum Corporation, and CanWest Gas Supply Inc. on rate-of-return regulatory matters and testified as an expert witness in various Consumers' Gas, Union Gas, Centra Gas Ontario, Tecumseh Gas Storage, Westcoast Energy, TransCanada PipeLines, and Pacific Northern Gas rate hearings, as well as the NEB's 1994 Multi-Pipeline Cost of Capital Hearing (RH-2-94) and the 2006 Newfoundland and Labrador Hydro GRA.

- Have advised the B.C. Petroleum Corporation regarding debenture valuation.

- Have consulted to Toronto-Dominion Bank (TD Securities Inc.), Royal Trust Company, and the Bank of Montreal

Other Endeavors

- Member of Investment Committee of The Community Foundation of Greater Kingston, 2000 - present

- Manage numerous private investment portfolios

- Have conducted extensive research into corporate financing strategies, portfolio management strategies, the development of financial instruments, and the asset and liability management policies of financial intermediaries

- Have written numerous case studies on business financing and investment problems, and on investment and portfolio management and other financial intermediary management problems

Academic Awards & Honours

2005	Awarded the QSB "Commerce '83 Teaching Fellowship in Finance"
1999, 2002	Recipient of Commerce Teaching Excellence Awards.
1994, 1996	Recipient of Queen's MBA Teaching Excellence Awards.
1981	Recipient of the Queen's University Alumni Award for Excellence in Teaching.
1967 - 1969	Fellow in the CIBC's Centennial International Fellowship Programme administered through the Faculty of Administrative Studies at York University.
2003	ICBC Arnoldi Award for long-standing contribution to ICBC (Inter-Collegiate Business Competition)

Regulatory Consulting Publications

"Cost of Capital," paper presented at CAMPUT's Queen's Conference on Energy Regulation, July 2005, July 2006, and July 2007.

"Testimony on the Automatic Adjustment Mechanism, the Embedded Cost of Debt, and the Test-Year Cost of Borrowing in Regard To the Newfoudland & Labrador Hydro 2006 General Rate Application", prefiled testimony before the Newfoundland and Labrador Board of Commissioners of Public Utilities, October 27, 2006.

"Review of the Board's Guidelines For Setting ROE," prefiled written testimony before the Ontario Energy Board in RP-2002-0158 and EB-2002-0484, June 2003

"A Discussion Paper on Adjudicating Mergers, Acquisitions, Amalgamations and Divestitures by Participants Within Ontario's Electricity Market," prepared for the Ontario Energy Board, June 1999.

"A Discussion Paper on the Determination of Return on Equity and Return on Rate Base For Electric Distribution Utilities in Ontario," prepared for the Ontario Energy Board, December 1998.

"The Appropriate Return on Equity For the Transco and Disco Business Operations of the Ontario Hydro Services Company", prepared for the Staff of the Ontario Energy Board in connection with the Ontario Hydro rate hearing, January 22, 1999.

"Prefiled Testimony in Connection With the Application of Union Gas Limited Before the Ontario Energy Board in E.B.R.O.499," September 1998.

"Prefiled Testimony in Connection With the Applications of Union Gas Limited and Centra Gas Ontario Inc. Before the Ontario Energy Board in E.B.R.O. 493/494." July 1996

"Prefiled Testimony in Connection With the Application of The Consumers' Gas Company Ltd. Before the Ontario Energy Board in E.B.R.O. 487." May 1994.

"Written Evidence of Dr. William T. Cannon Filed On Behalf of Minister of Environment and Energy For Ontario and Industrial Gas Users Association Before the National Energy Board in RH-2-94." September 1994.

"Prefiled Testimony in Connection With the Application of The Consumers' Gas Company Ltd. Before the Ontario Energy Board in E.B.R.O. 485." July 1993.

"Prefiled Testimony in Connection With the 1991 Application of TransCanada PipeLines Ltd. Before the National Energy Board in RH-1-91." April 1991.

"Prefiled Testimony in Connection With the Application of The Consumers' Gas Company Ltd. Before the Ontario Energy Board in E.B.R.O. 473." October 1991.

"Prefiled Testimony in Connection With the Application of The Consumers' Gas Company Ltd. Before the Ontario Energy Board in E.B.R.O. 464." March 1990.

"Prefiled Testimony in Connection With the Applications of British Gas PLC and GW Utilities Limited, GW-CG Investments Limited, and In Connection With a Reference From the Lieutenant Governor in Council, Regarding the Proposed Change of Control of The Consumers' Gas Company Ltd. in E.B.R.L.G. 35 et al." June 1990.

"Prefiled Testimony in Connection With the 1990 Application of Westcoast Energy Inc. Before the National Energy Board in RH-1-90." September 1990.

"Prefiled Testimony in Connection With the Application of Tecumseh Gas Storage Limited Before the Ontario Energy Board in E.B.R.O. 455." June 1989.

"Prefiled Testimony in Connection with the 1989 Application of Westcoast Energy Inc. Before the National Energy Board in RH-2-89." September 1989.

"Prefiled Testimony in Connection With the Applications of Inter-City Gas Corporation and Westcoast Energy Inc. Regarding the Proposed Change in Control of ICG Utilities (Canada) Ltd. and ICG Utilities (Ontario) Ltd. Before the Ontario Energy Board in E.B.R.L.G. 34." November 1989.

"Prefiled Testimony in Connection With the Application of The Consumers' Gas Company Ltd. Before the Ontario Energy Board in E.B.R.O. 452." June 1988.

"Prefiled Testimony in Connection With the December 1986 Application of Westcoast Transmission Company Limited Before the National Energy Board." August 1987.

"Prefiled Testimony in Connection With the Application The Consumers' Gas Company Ltd. Before the Ontario Energy Board in E.B.R.O. 414." May 1986.

Prepared background materials for Ontario Energy Board Staff in Connection with Gulf Canada's Indirect Acquisition of Consumers' Gas, which were reproduced in Special Counsel's Submission to the Ontario Energy Board in E.B.R.L.G. 30, October 1986.

"Prefiled Rate-of-Return Testimony in Connection With the Application of Pacific Northern Gas Ltd. Before the B.C. Public Utilities Commission." April 1985.

"Prefiled Testimony in Connection With Ontario Energy Board Reference Re Union Enterprises Limited and Unicorp Canada Corporation in E.B.R.L.G. 28." April 1985.

"Prefiled Testimony in Connection With the Application of The Consumers' Gas Company Ltd. Before the Ontario Energy Board in E.B.R.O. 403." May 1985.

"Prefiled Testimony in Connection With the Applications of Inter-City Gas Corp. et al, and Norcen Energy Resources Ltd. Before the Ontario Energy Board in E.B.O. 118, 119." December 1984.

"Prefiled Testimony in Connection With the December 1, 1982 Application of Westcoast Transmission Company Limited before the National Energy Board." April 1983.

"Prefiled Testimony in Connection With the Application of Union Gas Ltd. Before the Ontario Energy Board in E.B.R.O. 382." January 1982.

"Prefiled Testimony in Connection With the Application of The Consumers' Gas Company Ltd. Before the Ontario Energy Board in E.B.R.O. 386." July 1982.

Other Research And Publications (Excluding Case Studies)

Cannon, W.T. (2005) "Cost of Capital" – QSB monograph on theoretical and practical approaches to estimating a firm's overall cost of capital.

Cannon, W.T. (2003) "The Capital Asset Pricing Model Approach To Estimating the Cost of Equity Capital" – QSB monograph (a) dealing with the estimation of equity capital costs in an efficient market environment and (b) providing a review of recent studies of the "market risk premium."

Cannon, W.T. (2003) "Cyclically-Normalized, Real Economic Earnings" – QSB monograph reviewing the need for, and procedures for, adjusting corporate earnings reports to make the figures relevant for stock valuation purposes.

Cannon, W.T. (2001). "Hedging Corporate Interest Rate Risk." Queen's School of Business monograph.

Cannon, W.T. (2001). "Preferred Share Financing." Queen's School of Business monograph.

Cannon, W.T. (2001). "Explaining and Forecasting Interest Rates." Queen's School of Business monograph.

Cannon, W.T. (2001). "The Canadian Life Insurance Industry." Queen's School of Business monograph.

Cannon, W.T. (2000). "The Evolution of the Canadian Banks During the Latter Half of the 20th Century and a Peek At Their Future." Queen's School of Business monograph.

Cannon, W.T. (2000). "The Consumer Credit Market in Canada." Queen's School of Business monograph.

Cannon, W.T. (2000). "The Residential Mortgage Market in Canada." Queen's School of Business monograph.

Cannon, W.T. (1999). "Mapping Ontario's Electric Distribution Terrain", Standard & Poor's Canadian Focus, November 1999.

Cannon, W.T. (1996). "Pro Forma Financial Statement Forecasting For Assessing the Impact of Strategic and Policy Choices and Environmental Changes." Queen's School of Business monograph.

Cannon, W.T. (1996). "A Guide to the FRICT Analysis Framework For Making Corporate Financing Decisions." Queen's School of Business monograph on a practical approach to analyzing business financing decisions.

Cannon, W.T. (1996). "The Fundamental Securities Analyst's Common Stock Valuation Model." Queen's School of Business monograph on the practical approaches to common stock valuation used by fundamental securities analysts.

Cannon, W.T. (1995). "Financial Leverage, Income, and Risk." Queen's School of Business monograph.

Cannon, W.T. (1994). "A Practical Framework For Making Capital Budgeting Decisions." Queen's School of Business monograph.

Cannon, W.T. (1993). "Financial Ratio Analysis For Stock Valuation Purposes." Queen's School of Business monograph.

Cannon, W.T. (1987). "The Aggregate Customer Net Benefit Test - A New Framework for Gas Utility Capital Budgeting Decisions." Published as Appendix C of the Ontario Energy Board Staff Discussion Paper "A Review of the Expansion of the Natural Gas System in Ontario." in E.B.O. 134, Feb. 2, 1987.

Cannon, W.T. & Neave, T. (1985). "Consumer Credit." The Canadian Encyclopedia, Hurtig Publishers Ltd., Edmonton.

Cannon, W.T. (1981). "Integrating the Pure Theory of Financial Intermediation," paper submitted to the Journal of Financial and Quantitative Analysis; returned for revision.

Cannon, W.T. (1981). "Financing and Stabilization Policies in a Cyclical Industry: The Case of Inco in the Seventies." Technical Paper No. 1, Center for Resource Studies, Queen's University, Kingston, Ontario, June 1981.

Cannon, W.T. (1979). "Financing With Floating-Rate Term Preferred Shares." Paper presented at the Spring 1979 Conference of the Financial Research Foundation of Canada, at Niagara-On-The-Lake.

Cannon, W.T. (1979). "New Mining Ventures: The Case for Preserving After-Tax Financing." Paper published by the Center for Resource Studies, Queen's University, in August 1979.

Cannon, W.T. (1977). "Integrating the Pure Theory of Financial Intermediation," paper presented at the C.A.A.S. Meeting in Fredericton, N.B., in June 1977; abbreviated version of this paper is published in the Proceedings of this Meeting.

Cannon, W.T. (1976). "Models of Pure Financial Intermediation, With Specific Application to Firms in the Savings and Loan Industry." Unpublished PhD thesis completed for Harvard University in May 1976.

Courses Taught at Queen's University

MBAS 823 - Corporate Valuation and Merger and Acquisition Analysis
MBAS 824 - Corporate Financing and Investment Decisions
MBAST 822 - Finance II
MBAST 823 - Applied Corporate Finance
MBAST 825 - Financial Institutions
MBAST 923 - Finance Concentration
Business 821 - Financial Management
Business 922 - Corporate Financial Planning I
Business 923 - Corporate Financial Planning II
Business 924 - Investment and Portfolio Management
Business 926 - Canadian Financial Institutions and Markets
Business 929 - Management of Financial Institutions
Commerce 322 - Corporate Financial Planning - I

Commerce 323 - Corporate Financial Planning - II
Commerce 324 - Investment and Portfolio Management
Commerce 326 - Canadian Financial Institutions and Markets
Commerce 329 - Management of Financial Institutions
Commerce 485 - Independent Business Project
Commerce 501 – Undergraduate Thesis course
EMBA – supervision of several theses

Professional Associations

American Finance Association

Administrative Activities - Queen's University and School of Business

2000 -	Chair of the Pension Committee of the Board of Trustees of Queen's University and of its Investment Policy and its Investment Manager Search Sub-Committees.
2002 -	Chair of the Faculty Board of the Queen's School of Business and its Academic Appeals Committee.
2004 - 2005	Chair of Internal Academic Review Committee for Linguistics Unit
2006 -	Member of Chancellor A. Charles Baillie Teaching Award Selection Committee
2002 - 2006	Member of the School of Business Undergraduate Program Committee, also in 1979-1983, and 1996-1997.
2001 - 2006	Member of the Internal Advisory Board of the Queen's Financial Economics Group
2001 - 2004	Member of the MBA For Commerce Grads Program Development Committee
2002 -	Faculty Advisor to Queen's Investment Club
1998 - 2000	Chair of the Senate Budget Review Committee.

1991 - 2000	Vice-Chair of the Pension Committee of the Board of Trustees of Queen's University, and its Investment Policy and its Investment Manager Search Sub-Committees.
1997 - 1999	Business School representative on the Queen's University Senate, also in 1983-1986.
1997 - 1998	Member of the Joint Board-Senate Principal Search Committee.
1992 - 1993	Member of the School of Business Promotion, Tenure, and Renewal Committee, also from 1984-88.
1990	Member of the Principal's Advisory Search Committee on the Dean of Women.
1990	Member of the Principal's Advisory Search Committee on the Director of Residences.
1988 - 1996	Chair of the Queen's University Residences (Ban Righ) Board.
1987 - 1995	Member of the School of Business Research Committee.
1987 - 1988	Principal's Delegate on the University Residences Board.
1987 - 1988	Member of the Board of Directors of the Queen's Bookstore (also 1981-1985) and Principal's Taskforce on Bookstore Operations, 1983-1985.
1985 - 1986	Member of the Student Services Sub-Group.
1983 - 1997	Secretary of the School of Business' Advisory Council.
1983 - 1985	Member of the Senate Committee on Academic Development.
1978 - 1981	Elected Member of the Senate Budget Review Committee.
1978 - 1981	Treasurer and Executive Committee Member of the Queen's University Faculty Association.
1977 - 1980	Treasurer and Executive Committee Member of the Queen's University Faculty Club.

APPENDIX *B*

SUPPORTING

STATISTICAL

EXHIBITS

Appendix B
Schedule 1

GROSS DOMESTIC PRODUCT (GDP) IN 2002 CONSTANT DOLLARS AND THE INDEX OF INDUSTRIAL PRODUCTION, ANNUALLY FROM 1977 THROUGH 2006

Year	GDP in 2002 Constant Dollars* ($billions)	Change From Previous Year %	Index of Industrial Production	Change From Previous Year %
1977	571.8	3.6	82.8	3.4
1978	595.1	4.1	85.7	3.5
1979	620.1	4.2	89.9	4.8
1980	628.7	1.4	86.8	-3.4
1981	647.8	3.0	88.6	2.1
1982	628.8	-2.9	76.4	-9.8
1983	645.9	2.7	85.0	6.5
1984	683.5	5.8	95.4	12.2
1985	716.2	4.8	100.7	5.6
1986	733.4	2.4	100.0	-0.8
1987	764.7	4.3	104.4	4.4
1988	802.7	5.0	110.8	6.1
1989	823.7	2.6	110.3	-0.4
1990	825.3	0.2	107.2	-2.8
1991	808.1	-2.1	103.1	-3.8
1992	815.1	0.9	104.2	1.1
1993	834.2	2.3	109.5	5.1
1994	874.3	4.8	116.1	6.0
1995	898.8	2.8	120.9	4.1
1996	913.4	1.6	122.6	1.4
1997	952.0	4.2	128.7	5.0
1998	991.0	4.1	131.6	2.3
1999	1045.8	5.5	137.7	4.6
2000	1100.5	5.2	143.4	4.2
2001	1120.1	1.8	139.2	-2.9
2002	1152.9	2.9	142.3	2.3
2003	1174.6	1.9	142.6	0.2
2004	1210.7	3.1	145.2	1.8
2005	1247.8	3.1	146.5	0.9
2006	1282.2	2.8	147.1	0.4
2007:1	1300.6	-	-	-

Source: Bank of Canada Review and Bank of Canada Weekly Financial Statistics.

* Based on chain-weighted values from 1982 on.

Appendix B
Schedule 2

THE CANDIAN CONSUMER PRICE INDEX (CPI)

Period	Average Level of CPI For the Period (1992=100)	Year-to-Year CPI Inflation Rate %	Expected or Forecasted CPI Inflation Rate* %
1977	40.0	8.0	5.9
1978	43.6	9.0	9.1
1979	47.6	9.1	8.6
1980	52.5	10.2	9.5
1981	58.9	12.4	11.1
1982	65.3	10.9	12.3
1983	69.1	5.7	9.7
1984	72.1	4.4	4.6
1985	75.0	3.9	5.0
1986	78.1	4.2	4.45
1987	81.5	4.4	4.2
1988	84.8	4.0	4.85
1989	89.0	5.0	4.8
1990	93.3	4.8	4.6
1991	98.5	5.6	6.1
1992	100.0	1.5	3.4
1993	101.8	1.8	2.5
1994	102.0	0.2	2.0
1995	104.2	2.2	1.8
1996	105.9	1.6	2.0
1997	107.6	1.6	1.8
1998	108.6	0.9	1.8
1999	110.5	1.7	1.4
2000	113.5	2.7	2.3
2001	116.4	2.6	2.5
2002	119.0	2.2	1.8
2003	122.3	2.8	2.5
2004	124.6	1.9	1.8
2005	127.3	2.2	2.0
2006	129.9	2.0	2.5
2007:May	132.8	2.0	2.0
Average For:			
1991-2006 (16 years)	-	2.1	2.4

* Based on "Central Consensus" forecasts for 1985-1992 and on the actual year-over-year CPI inflation rate prevailing during the fourth quarter of the previous year, for years prior to 1985; the 1991 value is based on the Conference Board of Canada's autumn 1990 forecast for 1991, the 1993 value is taken from The Financial Post's quarterly forecast on page 4 of its November 14th, 1992 issue, and the 1994 figure is taken from the consensus forecast published by The Financial Post on page 6 of its October 16th, 1993 issue. The 1995 figure is taken from the consensus forecast published by The Financial Post on page 6 of its October 1st, 1994 issue, while the 1996 and subsequent values are taken from KPMG's "Survey of Economic Expectations" for 1996 and subsequent years. The latter "Survey" has been published by Watson Wyatt since 2001.

Source: Bank of Canada Review

Appendix B
Schedule 3

HISTORICAL CANADIAN INTEREST RATES AND YIELDS
- AVERAGES FOR ANNUAL AND QUARTERLY PERIODS

Year and Quarter	Government of Canada 91-Day Treasury Bills	Chartered Bank Prime	Government of Canada Long-Term Bonds	ScotiaMcLeod Weighted Long-Term Corporate Bonds
	%	%	%	%
1970	6.10	8.17	7.97	9.18
1971	3.60	6.48	6.95	8.35
1972	3.55	6.00	7.23	8.30
1973	5.39	7.65	7.55	8.47
1974	7.80	10.66	8.87	10.10
1975	7.37	9.48	9.00	10.75
1976	8.90	10.00	9.22	10.54
1977	7.35	8.53	8.69	9.72
1978	8.59	9.66	9.24	10.02
1979	11.55	12.72	10.17	10.88
1980	12.75	14.20	12.33	13.22
1981	17.77	19.21	15.03	16.11
1982	13.81	16.07	14.36	16.03
1983	9.32	11.19	11.77	12.73
1984	11.11	12.05	12.74	13.53
1985	9.44	10.64	11.11	11.82
1986	8.99	10.52	9.54	10.29
1987	8.19	9.52	9.95	10.68
1988	9.42	10.75	10.23	10.94
1989	12.02	13.26	9.92	10.83
1990	12.80	14.11	10.81	11.85
1991	8.85	10.08	9.82	10.84
1992	6.50	7.56	8.77	9.90
1993	4.91	6.00	7.86	8.89
1994	5.42	6.77	8.60	9.33
1995	6.98	8.60	8.35	9.09
1996	4.30	6.17	7.54	8.11
1997	3.13	4.96	6.71	6.98
1998	4.71	6.65	5.57	6.20
1999	4.69	6.46	5.72	6.60
2000	5.40	7.21	5.73	7.13
2001	3.88	5.94	5.77	7.09
2002	2.51	4.19	5.68	6.98
2003	2.72	4.67	5.35	6.52
2004	2.81	4.04	5.13	6.06
2005	2.71	4.40	4.43	5.40
2006	3.99	5.75	4.27	5.37
2007:Q1	4.17	6.00	4.16	5.22
2007:Q2	4.24	6.00	4.34	5.54

Sources: Bank of Canada Review and Bank of Canada Weekly Financial Statistics.

ACTUAL AND MIDPOINT ALLOWED RETURNS ON COMMON EQUITY

FOR NEWFOUNDLAND POWER INC.

Year	Midpoint of Allowed ROCE Range	Actual Achieved ROCE	Actual Minus Allowed
	%	%	%
1990	13.95	13.71	-0.24
1991	13.25	13.29	0.04
1992	13.25	13.47	0.22
1993	13.25	12.79	-0.46
1994	13.25	12.03	-1.22
1995	13.25	12.07	-1.18
1996	11.00	11.21	0.21
1997	11.00	11.14	0.14
1998	9.25	9.58	0.33
1999	9.25	9.81	0.56
2000	9.59	10.80	1.21
2001	9.59	11.35	1.76
2002	9.05	10.65	1.60
2003	9.75	10.22	0.47
2004	9.75	10.12	0.37
2005	9.24	9.60	0.36
2006	9.24	9.46	0.22
Average:			
1990-2006	10.99	11.25	0.26
1996-2006	9.70	10.36	0.66

Risk Measure Based On:

Standard Deviation, or Deviations From Mean ROCE:	
1990-2006	1.38
1996-2006	0.67

Standard Error of Estimate, or Deviations From Trend Line ROCE:	
1990-2006	0.63
1996-2006	0.57

Deviations of Actual from Allowed ROCE:	
1990-2006	0.82
1996-2006	0.86

ACTUAL AND MIDPOINT ALLOWED RETURNS ON COMMON EQUITY

FOR ENBRIDGE GAS DISTRIBUTION INC.

Fiscal Year Primarily Occurring In Calendar Year	Midpoint of Allowed ROCE Range	Actual Achieved ROCE	Actual Minus Allowed
	%	%	%
1990	13.25	13.57	0.32
1991	13.125	9.40	-3.725
1992	13.125	13.29	0.165
1993	12.30	15.26	2.96
1994	11.60	14.69	3.09
1995	11.65	10.71	-0.94
1996	11.875	15.00	3.125
1997	11.50	13.17	1.67
1998	10.30	8.31	-1.99
1999	9.51	7.943	-1.567
2000	9.73	8.229	-1.501
2001	9.54	10.800	1.260
2002	9.66	8.982	-0.678
2003	9.69	9.743	0.053
2004	9.69	12.165	2.475
2005	9.57	9.457	-0.113
2006	8.74	7.60	-1.14
Average:			
1990-2006	10.87	11.08	0.20
1996-2006	9.98	10.13	0.15

Risk Measure Based On:

Standard Deviation, or Deviations From Mean ROCE:	
1990-2006	2.57
1996-2006	2.29
Standard Error of Estimate, or Deviations From Trend Line ROCE:	
1990-2006	2.10
1996-2006	2.04
Deviations of Actual from Allowed ROCE:	
1990-2006	1.94
1996-2006	1.67

ACTUAL AND MIDPOINT ALLOWED RETURNS ON COMMON EQUITY

FOR UNION GAS LIMITED

Fiscal Year Primarily Occurring In Calendar Year	Midpoint of Allowed ROCE Range %	Actual Achieved ROCE %	Actual Minus Allowed %
1990	13.50	10.70	-2.80
1991	13.50	11.50	-2.00
1992	13.00	14.00	1.00
1993	12.50	15.30	2.80
1994	11.75	10.95	-0.80
1995	11.75	12.17	0.42
1996	11.75	13.47	1.72
1997	11.00	12.19	1.19
1998	10.44	8.03	-2.41
1999	9.61	8.76	-0.85
2000	9.95	10.62	0.67
2001	9.95	9.30	-0.65
2002	9.95	10.67	0.72
2003	9.95	11.98	2.03
2004	9.62	10.31	0.69
2005	9.63	10.80	1.17
2006	9.62	8.05	-1.57
Average:			
1990-2006	11.03	11.11	0.08
1996-2006	10.13	10.38	0.25

Risk Measure Based On:

Standard Deviation, or Deviations From Mean ROCE:	
1990-2006	1.94
1996-2006	1.66

Standard Error of Estimate, or Deviations From Trend Line ROCE:	
1990-2006	1.65
1996-2006	1.57

Deviations of Actual from Allowed ROCE:	
1990-2006	1.58
1996-2006	1.37

A COMPARISON OF THE FISCAL 2006 YEAREND CAPITAL STRUCTURE RATIOS FOR FIRMS IN THE SAMPLE OF PUBLICLY-TRADED CANADIAN UTILITY COMPANIES

	All Debt	Preferred Shares	Common Equity
	%	%	%
Canadian Utilities	51.1	10.5	38.4
Emera (NS Power)	56.0	-	44.0
Enbridge Inc.	68.6	0.9	30.5
Fortis Inc.	61.5	7.2	31.3
Pacific Northern Gas	49.1	3.0	47.9
Terasen (BC Gas)[a]	65.2	-	34.8
TransCanada Corporation	61.7	2.5	35.8
Average of 7 Utilities	59.0	3.5	37.5
Newfoundland Power:			
2006 Yearend Actual	54.4	1.3	44.3
Proposed for 2008	54.0	1.2	44.8

[a] Not publicly-traded subsequent to November 2005.

A COMPARISON OF THE CAPITAL STRUCTURE PROPORTIONS
MOST RECENTLY ADOPTED BY REGULATORY BOARDS FOR VARIOUS
CANADIAN ELECTRICITY AND NATURAL GAS DISTRIBUTORS

	All Debt	Preferred Shares	Common Equity
	%	%	%
ATCO Electric Distribution	56.1	6.9	37.0
ATCO Gas	55.1	6.9	38.0
Enbridge Gas Distribution	61.3	2.7	36.0
EPCOR Utilities Distribution	61.0	-	39.0
FortisAlberta Inc.	63.0	-	37.0
FortisBC Inc.	60.0	-	40.0
Gaz Metropolitain	54.0	7.5	38.5
Maritime Electric	57.3	-	42.7
Nova Scotia Power	53.3	9.2	37.5
Pacific Northern Gas-Western System	56.2	3.8	40.0
Pacific Northern Gas-Northeast System	60.2	3.8	36.0
Terasen Gas	65.0	-	35.0
Union Gas	60.6	3.4	36.0
Average of 13 Distributors	58.7	3.4	37.9
Newfoundland Power:			
Currently Approved	54.1	1.4	44.5
Proposed for 2008	54.0	1.2	44.8

COMPARATIVE RATES OF TOTAL INVESTMENT RETURN AND
EXPERIENCED MARKET EQUITY RISK PREMIUMS
(Percentage Rates of Return from December to December)

Year	S&P/TSX and T.S.E. "300" Composite Stock Index	Canadian 91-Day Treasury Bills	Experienced Market-Average Equity Risk Premiums[a]	Scotia Capital Long-Term Bond Value Index[b]
	%	%	%	%
1957	-20.58	3.83	-24.41	7.94
1958	31.25	2.51	28.74	1.92
1959	4.59	4.62	-0.03	-5.07
1960	1.78	3.31	-1.53	12.19
1961	32.75	2.89	29.86	9.16
1962	-7.09	4.22	-11.31	5.03
1963	15.60	3.63	11.97	4.58
1964	25.43	3.79	21.64	6.16
1965	6.68	3.92	2.76	0.05
1966	-7.07	5.03	-12.10	-1.05
1967	18.09	4.59	13.50	-0.48
1968	22.45	6.44	16.01	2.14
1969	-0.81	7.09	-7.90	-2.86
1970	-3.57	6.70	-10.27	16.39
1971	8.01	3.81	4.20	14.84
1972	27.38	3.55	23.83	8.11
1973	0.27	5.11	-4.84	1.97
1974	-25.93	7.85	-33.78	-4.53
1975	18.48	7.41	11.07	8.02
1976	11.02	9.27	1.75	23.64
1977	10.71	7.66	3.05	9.04
1978	29.72	8.34	21.38	4.10
1979	44.77	11.41	33.36	-2.83
1980	30.13	14.97	15.16	2.18
1981	-10.25	18.41	-28.66	-2.09
1982	5.54	15.42	-9.88	45.82
1983	35.49	9.62	25.87	9.61
1984	-2.39	11.59	-13.98	16.90
1985	25.07	9.88	15.19	26.68
1986	8.95	9.33	-0.38	17.21
1987	5.88	8.48	-2.60	1.78
1988	11.08	9.41	1.67	11.30
1989	21.37	12.36	9.01	15.17
1990	-14.80	13.48	-28.28	4.32
1991	12.02	9.83	2.19	25.30
1992	-1.43	7.08	-8.51	11.57
1993	32.55	5.51	27.04	22.09
1994	-0.18	5.35	-5.53	-7.39
1995	14.53	7.57	6.96	26.34
1996	28.35	5.02	23.33	14.18
1997	14.98	3.20	11.78	18.46
1998	-1.58	4.74	-6.32	12.85
1999	31.71	4.66	27.05	-5.98
2000	7.41	5.49	1.92	12.97
2001	-12.57	4.72	-17.29	6.06
2002	-12.44	2.52	-14.96	11.05
2003	26.72	2.91	23.81	9.07
2004	14.48	2.30	12.18	10.26
2005	24.13	2.58	21.55	13.84
2006	17.26	3.97	13.29	4.08

	Arith Mean	Geom Mean	Arith Mean	Geom Mean	Arith Mean	Geom Mean	Geom Mean
1957-06	11.12	9.94	6.75	6.68	4.37	2.99	8.60
1962-06	11.25	10.15	7.12	7.05	4.13	2.82	9.01
1967-06	11.82	10.69	7.49	7.43	4.32	2.96	9.79
1972-06	12.24	11.02	7.74	7.67	4.50	3.02	10.39
1977-06	13.24	12.15	7.93	7.85	5.31	3.96	10.96

[a] Col. 1 minus col. 2. [b] Includes provincials and corporates, as well as Canada bonds.

Source: Scotia Capital, Fixed Income Research department, various annual "Investment Returns" publications.

CANADIAN EQUITY RISK PREMIA, IN CANADIAN DOLLARS, OVER TIME*

Year	Market ERP %	Year	Market ERP %	Year	Market ERP %
1936	22.4	1960	-3.5	1984	-14.6
1937	-18.8	1961	27.6	1985	13.6
1938	6.0	1962	-12.1	1986	-0.9
1939	-2.9	1963	10.5	1987	-3.6
1940	-22.3	1964	20.3	1988	0.8
1941	-1.4	1965	1.5	1989	11.2
1942	10.9	1966	-12.6	1990	-24.9
1943	16.6	1967	12.3	1991	1.8
1944	10.5	1968	15.8	1992	-10.3
1945	33.1	1969	-8.2	1993	24.3
1946	-4.4	1970	-11.8	1994	-7.9
1947	-2.3	1971	1.0	1995	5.7
1948	9.6	1972	20.5	1996	20.9
1949	19.7	1973	-7.0	1997	8.4
1950	45.6	1974	-34.1	1998	-7.2
1951	21.2	1975	9.6	1999	26.3
1952	-3.7	1976	1.6	2000	1.3
1953	-1.4	1977	2.1	2001	-18.3
1954	35.3	1978	20.8	2002	-18.2
1955	24.6	1979	35.0	2003	21.4
1956	10.1	1980	18.5	2004	9.3
1957	-24.7	1981	-23.4	2005	19.6
1958	27.3	1982	-9.5	2006	13.0
1959	-0.2	1983	23.8		

Time Period	Arithmetic Average	Geometric Average
1936-2006	5.37%	4.03%
1947-2006	5.53%	4.17%
1957-2006	3.46%	2.16%

* The equity risk premiums are the differences, annually, between the total investment returns on TSE stocks and the *income return* on Government of Canada long-term bonds.

Sources: Ibbotson Associates, "Canadian Risk Premium over Time Report"; Dr. Cannon's calculations for 2003-2006.

Appendix B
Schedule 9

COMPARATIVE RATES OF TOTAL REAL INVESTMENT RETURN AND VARIOUS EXPERIENCED MARKET EQUITY RISK PREMIUMS

Year	Real Canadian Common Stock Returns	Real 91-Day T-Bill Returns	Real Canadian Long Bond Returns	Market Risk Premium (MRP) Based on T-Bills	Market Risk Premium (MRP) Based on Long Cda Bonds
	%	%	%	%	%
1924	13.31	n.a.	9.84	n.a.	3.47
1925	25.26	n.a.	2.33	n.a.	22.93
1926	26.70	n.a.	7.32	n.a.	19.39
1927	46.27	n.a.	11.20	n.a.	35.07
1928	31.70	n.a.	-0.37	n.a.	32.07
1929	-13.96	n.a.	-0.40	n.a.	-13.56
1930	-26.30	n.a.	16.54	n.a.	-42.84
1931	-25.11	n.a.	6.15	n.a.	-31.27
1932	-5.92	n.a.	21.41	n.a.	-27.33
1933	55.20	n.a.	9.90	n.a.	45.30
1934	18.86	-0.53	18.26	19.39	0.60
1935	27.66	-1.13	-1.46	28.79	29.12
1936	23.95	-0.24	9.87	24.18	14.07
1937	-19.45	-3.62	-4.86	-15.83	-14.59
1938	11.53	2.83	7.95	8.70	3.58
1939	-1.97	-1.47	-5.06	-0.50	3.09
1940	-23.26	-4.41	3.15	-18.85	-26.41
1941	-3.95	-5.22	-2.19	1.26	-1.76
1942	10.79	-2.27	0.19	13.07	10.60
1943	17.47	-1.36	1.98	18.83	15.50
1944	15.59	2.26	5.08	13.32	10.50
1945	33.55	-1.48	3.25	35.03	30.31
1946	-6.64	-4.85	0.48	-1.79	-7.13
1947	-12.58	-12.52	-10.12	-0.06	-2.46
1948	2.79	-7.96	-10.52	10.74	13.30
1949	21.77	-0.21	4.13	21.98	17.64
1950	39.76	-5.34	-5.96	45.09	45.71
1951	12.37	-8.71	-12.25	21.08	24.62
1952	0.76	2.25	3.21	-1.49	-2.44
1953	2.15	1.65	3.64	0.50	-1.49
1954	39.05	1.53	9.99	37.52	29.06
1955	27.04	0.85	-0.93	26.19	27.97
1956	9.97	-0.05	-6.40	10.02	16.36
1957	-21.93	2.10	4.10	-24.02	-26.03
1958	27.64	-0.64	-8.28	28.29	35.92
1959	3.45	3.63	-5.47	-0.18	8.92
1960	0.15	1.87	5.38	-1.72	-5.23
1961	32.75	2.89	9.78	29.85	22.97
1962	-8.56	2.40	1.42	-10.96	-9.98
1963	13.22	1.53	2.11	11.69	11.11
1964	22.90	1.70	4.81	21.20	18.09
1965	3.54	0.97	-2.01	2.58	5.55
1966	-10.15	1.65	-1.82	-11.80	-8.33
1967	13.77	0.79	-5.77	12.98	19.55
1968	17.61	2.27	-4.72	15.34	22.33
1969	-5.37	2.48	-6.52	-7.86	1.14
1970	-4.76	5.26	20.47	-10.02	-25.23
1971	2.90	-1.11	6.28	4.01	-3.38
1972	21.18	-1.46	-3.81	22.64	24.99
1973	-8.31	-3.58	-7.00	-4.73	-1.31
1974	-34.06	-3.66	-12.48	-30.40	-21.58
1975	8.25	-1.74	-6.06	9.99	14.31
1976	4.89	3.39	12.45	1.50	-7.56
1977	1.13	-1.47	-3.20	2.60	4.33
1978	19.65	0.47	-6.57	19.18	26.22
1979	31.90	2.53	-11.28	29.37	43.18
1980	17.12	2.36	-8.15	14.77	25.27
1981	-19.99	7.30	-13.55	-27.29	-6.44
1982	-3.39	5.51	30.89	-8.89	-34.27
1983	29.53	5.03	4.78	24.50	24.75
1984	-5.86	7.96	11.00	-13.82	-16.86
1985	19.82	5.17	20.01	14.65	-0.19
1986	4.57	5.08	12.80	-0.51	-8.24
1987	1.66	4.13	-3.55	-2.47	5.21
1988	6.82	5.55	6.21	1.27	0.61
1989	15.34	7.30	10.52	8.04	4.83
1990	-18.83	8.58	-1.55	-27.41	-17.28
1991	7.93	5.58	19.89	2.35	-11.96
1992	-3.49	4.28	10.72	-7.77	-14.20
1993	30.35	3.53	20.84	26.82	9.51
1994	-0.37	5.12	-10.64	-5.49	10.26
1995	12.56	5.59	24.11	6.97	-11.55
1996	25.58	2.24	11.83	23.34	13.75
1997	14.12	2.53	16.58	11.59	-2.46
1998	-2.58	3.75	12.98	-6.33	-15.56
1999	28.41	2.19	-9.48	26.21	37.89
2000	4.05	2.33	10.08	1.72	-6.04
2001	-13.18	3.41	3.21	-16.59	-16.39
2002	-15.72	-1.28	5.98	-14.44	-21.70
2003	24.25	0.92	5.95	23.33	18.30
2004	12.11	0.13	6.21	11.98	5.90
2005	21.51	0.51	12.63	21.00	8.88
2006	15.37	2.37	1.56	13.00	13.81
Geometric Means:					
1924-06	7.06	n.a.	3.05	n.a.	3.25
1934-06	6.78	1.01	2.37	5.64	3.74
1948-06	7.18	1.87	2.53	5.12	3.79
1957-06	5.60	2.55	3.36	2.94	1.40
Arithmetic Means:					
1924-06	8.60	n.a.	3.48	n.a.	5.12
1934-06	8.04	1.09	2.81	6.95	5.23
1948-06	8.39	1.92	3.03	6.47	5.37
1957-06	6.79	2.59	3.87	4.20	2.92

Sources: Mercer Investment Consulting; Canadian Institute of Actuaries, Report on Canadian Economic Statistics 1924-2006.

CANADIAN LONG-RUN SECURITY RETURNS AND EQUITY RISK PREMIA

BASED ON DATA FROM 1900 ONWARDS

	Nominal Canadian Dollar Returns On:		
	Canadian Equities	Gov't of Cda 91-Day T-Bills	Gov't of Cda Long-Term Bonds
	%	%	%
1900-2000:			
Geometric Mean	9.7	4.9	5.0
Arithmetic Mean	11.0	4.9	5.4
2001 Returns	-12.57	4.72	6.06
2002 Returns	-12.44	2.52	11.05
2003 Returns	26.72	2.91	9.07
2004 Returns	14.48	2.30	10.26
2005 Returns	24.13	2.58	13.84
2006 Returns	17.26	3.97	4.08
1900-2006:			
Geometric Mean	9.62	4.80	5.22
Arithmetic Mean	10.92	4.80	5.61

1900-2006 Equity Risk Premia	Arithmetic Mean	Geometric Mean
Equities versus T-Bills	6.12	4.81
Equities versus Long Canada Bonds	5.32	4.38

Sources: Elroy Dimson, Paul Marsh, and Mike Staunton, Triumph of the Optimists: 101 Years of Global Investment Returns, Princeton, NJ; Princeton University Press, 2002; Scotia Capital Markets data for 2001-2006; Dr. Cannon's calculations.

U.S. LONG-RUN SECURITY RETURNS AND EQUITY RISK PREMIA

BASED ON DATA FROM 1900 ONWARDS

	Nominal U.S. Dollar Returns On:		
	U.S. Equities	U.S. T-Bills	Long-Term U.S. Treasury Bonds
	%	%	%
1900-2000:			
Geometric Mean	10.1	4.1	4.8
Arithmetic Mean	12.0	4.1	5.1
2001 Returns	-11.89	6.76	4.34
2002 Returns	-22.10	11.78	16.99
2003 Returns	28.68	2.24	2.61
2004 Returns	10.88	3.54	7.94
2005 Returns	4.91	2.79	6.61
2006 Returns	15.79	3.08	2.06
1900-2006:			
Geometric Mean	9.69	4.15	4.90
Arithmetic Mean	11.57	4.15	5.19

1900-2006 Equity Risk Premia	Arithmetic Mean	Geometric Mean
Equities versus US T-Bills	7.42	5.48
Equities versus LT Treasury Bonds	6.38	4.70

Sources: Elroy Dimson, Paul Marsh, and Mike Staunton, Triumph of the Optimists: 101 Years of Global Investment Returns, Princeton, NJ; Princeton University Press, 2002; Scotia Capital Markets and Lehman Brothers' data for 2001-2006; Dr. Cannon's calculations.

TREND IN BETA VALUES FOR FIRMS IN SAMPLE OF PUBLICLY-TRADED UTILITIES

Utility Company Name	Common Share Beta Values For the 60 Months Ending: Dec. 1996	Dec. 1997	Dec. 1998	Dec. 1999	Dec. 2000	Dec. 2001	Dec. 2002	Dec. 2003	Dec. 2004	Dec. 2005	Dec. 2006	June 2007
Canadian Utilities "A"	0.42	0.52	0.62	0.54	0.37	0.26	0.19	0.05	0.02	0.19	0.29	0.42
Emera (NS Power)	0.50*	0.41	0.55	0.41	0.27	0.19	0.15	-0.06	-0.01	0.04	0.08	0.14
Enbridge Inc.	0.44	0.43	0.48	0.26	0.07	-0.11	-0.18	-0.38	-0.33	-0.19	0.21	0.28
Fortis Inc.	0.33	0.27	0.48	0.33	0.23	0.14	0.13	-0.06	-0.00	0.18	0.45	0.51
Pacific Northern Gas	0.29	0.38	0.55	0.47	0.43	0.40	0.43	0.35	0.45	0.52	0.54	0.55
Terasen (BC Gas)	0.56	0.47	0.48	0.36	0.25	0.17	0.11	-0.15	-0.19	n.a.	n.a.	n.a.
TransCanada Corporation	0.53	0.37	0.55	0.21	0.16	-0.08	-0.09	-0.37	-0.16	-0.15	0.34	0.44
Utility Sample Mean	0.44	0.41	0.53	0.37	0.25	0.14	0.11	-0.09	-0.03	0.10	0.32	0.39
Utility Sample Median	0.44	0.41	0.55	0.36	0.25	0.17	0.13	-0.06	-0.01	0.11	0.315	0.43
2/3 Median + 1/3 Mean	0.44	0.41	0.54	0.36	0.25	0.16	0.12	-0.07	-0.02	0.11	0.32	0.42
Utility Sample or Benchmark Utility As a Percent of All S&P/TSX Firms: (Based on 2/3 Median + 1/3 Mean Values)												
	46.9	43.7	58.5	41.6	33.4	24.4	19.1	n.a.	n.a.	14.6	33.0	41.7
Utility Sample or Benchmark Utility As a Percent of Industrial Sample: (Based on 2/3 Median + 1/3 Mean Values)												
	64.7	62.1	81.8	69.2	59.5	45.7	32.4	n.a.	n.a.	30.6	62.7	85.0

Sources: "Research Insight" database; Dr. Cannon's own calculations.

* Based on 48 months of returns data only.

TREND IN STANDARD DEVIATIONS OF INVESTMENT RETURNS
FOR FIRMS IN SAMPLE OF PUBLICLY-TRADED UTILITIES

Utility Company Name	Common Share Beta Values For the 60 Months Ending: Dec. 1996 %	Dec. 1997 %	Dec. 1998 %	Dec. 1999 %	Dec. 2000 %	Dec. 2001 %	Dec. 2002 %	Dec. 2003 %	Dec. 2004 %	Dec. 2005 %	Dec. 2006 %	June 2007 %
Canadian Utilities "A"	3.79	3.66	4.38	4.58	5.40	5.28	5.22	4.82	4.75	4.02	4.62	4.95
Emera (NS Power)	3.10*	3.25	4.32	4.65	4.90	5.04	4.97	4.35	4.16	3.88	3.77	3.82
Enbridge Inc.	3.58	4.78	5.04	5.12	5.94	6.70	5.68	5.54	5.57	4.56	3.59	3.90
Fortis Inc.	3.43	3.19	3.73	3.61	3.72	4.12	4.24	4.07	4.07	4.81	5.22	5.64
Pacific Northern Gas	4.16	4.71	5.02	5.17	8.45	10.91	11.70	11.64	11.56	9.63	6.80	5.01
Terasen (BC Gas)	3.51	3.54	3.97	4.63	5.45	5.79	5.82	5.62	4.79	n.a.	n.a.	n.a.
TransCanada Corporation	3.59	4.07	5.46	6.29	7.79	8.05	7.10	6.81	5.70	3.69	3.38	3.64
Utility Sample Mean	3.59	3.89	4.56	4.86	5.95	6.56	6.39	6.12	5.80	5.10	4.56	4.49
Utility Sample Median	3.58	3.66	4.38	4.65	5.45	5.79	5.68	5.54	4.79	4.29	4.20	4.43
2/3 Median + 1/3 Mean	3.58	3.74	4.44	4.72	5.62	6.05	5.92	5.73	5.13	4.56	4.32	4.45
Utility Sample or Benchmark Utility As a Percent of All S&P/TSX Firms: (Based on 2/3 Median + 1/3 Mean Values)												
	39.6	40.4	45.2	45.5	49.8	51.9	51.5	48.0	47.1	46.7	48.2	51.6
Utility Sample or Benchmark Utility As a Percent of Industrial Sample: (Based on 2/3 Median + 1/3 Mean Values)												
	57.4	57.4	63.6	65.6	72.0	74.5	71.4	78.6	70.8	69.0	73.1	78.6

Sources: "Research Insight" database; Dr. Cannon's own calculations.

* Based on 48 months of returns data only.

CALCULATION OF REPRESENTATIVE DIVIDEND YIELDS FOR A SAMPLE OF CANADIAN, PUBLICLY-TRADED, REGULATED UTILITY/PIPELINE COMPANIES

Utility/Pipeline Company	Indicated Annual DPS As At July 20, 2006	Closing Share Price As At July 20, 2006	Dividend Yield Based On July 20, 2006 Closing Share Price
	$	$	%
Canadian Utilities	1.26	48.72	2.59
Emera (NS Power)	0.91	21.11	4.31
Enbridge Inc.	1.23	38.19	3.22
Fortis Inc.	0.84	27.10	3.10
Pacific Northern Gas	0.80	18.25	4.38
Terasen (BC Gas)	n.a.	n.a.	n.a.
TransCanada Corporation	1.36	39.61	3.43
Utility Sample:			
Mean			3.50
Median			3.32
2/3 Median + 1/3 Mean			3.38

HISTORICAL DIVIDEND-PER-SHARE AND FORECASTED EPS GROWTH RATES FOR A SAMPLE OF CANADIAN, PUBLICLY-TRADED, REGULATED UTILITY/PIPELINE COMPANIES

I. HISTORICAL DIVIDEND-PER-SHARE GROWTH RATES (% p.a.)[a]

Over Period From/To	Cdn Utili -ties	Emera (NS Power)	Enbridge Inc.	Fortis Inc.	PNG	Terasen (BC Gas)	TCPL	Utility Mean . Incl. PNG[b]	Utility Mean . Excl. PNG
	%	%	%	%	%	%	%	%	%
1992-00	3.2	n.a.	3.0	2.7	-4.4	3.9	1.8	1.7	2.9
1993-01	3.6	1.6	4.3	2.5	n.a.	4.7	0.5	2.9	2.9
1994-02	3.9	1.6	5.4	2.3	n.a.	5.8	0.7	3.3	3.3
1995-03	4.3	1.2	6.5	2.6	-2.0	6.9	0.7	2.9	3.7
1996-04	4.6	1.2	7.7	2.9	-2.3	7.9	0.7	3.2	4.2
1997-05	4.4	1.2	8.8	3.7	-2.8	8.0	0.4	3.4	4.4
1998-06	6.9	1.0	9.4	5.1	-3.9	n.a.	0.5	3.2	4.6
1999-07	4.8	1.0	9.4	7.7	-4.1	n.a.	2.5	3.5	5.1
1991-07 (16 yrs)	3.9	n.a.	n.a.	5.1	0.2	n.a.	4.1	3.3	4.4
DPS Growth Rates Based on Regression Trend Line Values:									
1991-07	4.5	1.3	7.7	4.4	-2.1	6.0	2.2	3.4	4.3

II. ANALYSTS' 5-YEAR-FORWARD MEDIAN EPS GROWTH RATE ESTIMATES (% p.a.)

	3.0	n.a.	8.0	n.a.	n.a.	n.a.	4.5	n.a.	n.a.

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[a] See page 2 of this schedule for the historical DPS values on which these growth rate calculations are based.

[b] PNG's DPS growth rate is taken to be zero for 1993-01, 1994-02 for purposes of averaging.

[c] For 1993 to 2007 only.

[d] For 1992 to 2007 only.

[e] For 1991 to 2005 only.

HISTORICAL AND INDICATED DIVIDEND PER SHARE VALUES FOR A SAMPLE OF CANADIAN, PUBLICLY-TRADED, REGULATED UTILITY/PIPELINE COMPANIES[a]

	Canadian Utilities	Emera (NS Power)	Enbridge Inc.	Fortis Inc.
	$	$	$	$
1991	0.69	n.a.	n.a.	0.37
1992	0.70	n.a.	0.50	0.373
1993	0.71	0.75	0.50	0.385
1994	0.72	0.76	0.50	0.405
1995	0.73	0.78	0.50	0.423
1996	0.74	0.80	0.508	0.43
1997	0.78	0.81	0.53	0.44
1998	0.82	0.82	0.56	0.45
1999	0.86	0.83	0.598	0.453
2000	0.90	0.84	0.635	0.46
2001	0.94	0.85	0.70	0.468
2002	0.98	0.86	0.76	0.485
2003	1.02	0.86	0.83	0.52
2004	1.06	0.88	0.92	0.54
2005	1.10	0.89	1.038	0.588
2006	1.40	0.89	1.15	0.67
2007	1.25	0.90	1.23	0.82

	Pacific Northern Gas	Terasen (BC Gas)	TransCanada Corporation
	$	$	$
1991	0.775	0.45	0.72
1992	0.80	0.45	0.76
1993	0.88	0.45	0.84
1994	0.88	0.45	0.92
1995	0.94	0.45	1.00
1996	0.96	0.45	1.08
1997	1.00	0.488	1.16
1998	1.10	0.545	1.21
1999	1.12	0.583	1.12
2000	0.56	0.613	0.88
2001	0.00	0.65	0.875
2002	0.00	0.705	0.975
2003	0.80	0.765	1.06
2004	0.80	0.825	1.14
2005	0.80	0.90	1.20
2006	0.80	n.a.	1.26
2007	0.80	n.a.	1.36

[a] DPS values from 1991 through 2006 are taken from company annual reports; 2007 values are based on first half actual payments and the indicated rate for the remainder of 2007.

HISTORICAL DIVIDEND PAYOUT RATIOS FOR A SAMPLE OF CANADIAN, PUBLICLY-TRADED, REGULATED UTILITY/PIPELINE COMPANIES

	Canadian Utilities	Emera (NS Power)	Enbridge Inc.	Fortis Inc.	Pacific Northern Gas	Terasen (BC Gas)	TransCanada Corporation.
	%	%	%	%	%	%	%
1991	77.3	n.a.	n.a.	61.4	47.7	46.4	53.7
1992	70.1	n.a.	105.4	58.4	54.0	257.1	48.7
1993	68.5	69.8	98.8	60.2	54.0	62.9	51.9
1994	64.7	68.9	183.9	65.9	48.9	96.8	57.5
1995	61.1	70.4	89.1	66.8	56.3	77.6	57.1
1996	55.2	76.3	69.8	72.9	47.8	35.6	58.4
1997	54.7	75.4	67.3	73.9	46.3	76.8	76.8
1998	54.7	82.8	67.7	84.9	63.6	58.9	155.1
1999	54.4	71.6	62.6	80.8	58.3	60.1	inf[b]
2000	50.1	70.0	50.0	67.6	30.6	59.5	58.7
2001	50.3	70.8	48.1	51.9	0.0	58.8	67.3
2002	40.7	101.2	42.2	49.9	0.0	57.6	62.5
2003	50.0	71.7	41.2	48.9	53.9	60.0	60.2
2004	43.4	73.3	47.7	50.3	56.7	57.7	53.5
2005	52.6	80.2	63.0	43.7	45.7	94.0	48.2
2006	54.5	78.1	63.5	47.2	63.0	n.a.	57.0

UTILITY AVERAGE DIVIDEND PAYOUT RATIO PERCENTAGE[a]

1991: 57.3	1995: 68.3	1999: 69.7	2003: 55.1
1992: 71.9	1996: 59.4	2000: 55.2	2004: 54.7
1993: 66.6	1997: 67.3	2001: 49.6	2005: 61.1
1994: 71.8	1998: 73.2	2002: 50.4	2006: 60.6

UTILITY AVERAGE PAYOUT RATIO PERCENTAGE, EXCLUDING PNG[a]

1991: 59.7	1995: 70.4	1999: 71.6	2003: 55.3
1992: 75.4	1996: 61.4	2000: 59.8	2004: 54.3
1993: 68.7	1997: 70.8	2001: 57.9	2005: 63.6
1994: 75.6	1998: 74.8	2002: 58.8	2006: 60.1

Source: Company annual reports.

[a] Payout ratios in excess of 100% are taken to be equal to 100% for averaging purposes.

[b] Infinity indicates positive DPS paid even though earnings were negative.

APPLICATION OF CRITERIA FOR SELECTING INDUSTRIAL SAMPLE FROM AMONG THOSE GICS-SECTOR-ELIGIBLE COMPANIES THAT WERE INCLUDED IN THE S&P/TSX COMPOSITE INDEX IN BOTH MAY 2007 AND DECEMBER 2002

Company Name	Eliminated By Virtue of Incomplete or Inconsistent Data	Failure to Satisfy Share Price Volatility Criterion	Failure to Satisfy Dividend Consistency Requirement
Alimentation Couche-Tard	√		
Alliance Atlantis Comm	√		
Angiotech Pharmaceuticals	√		
ATS Automation Tooling	√		
Axcan Pharma	√		
Ballard Power Systems	√		
Biovail Corp		√	
Bombardier Inc.		√	
CAE Inc.		√	
Cdn National Railway	√		
Cdn Pacific Railway	√		
Canadian Tire		√	
Canwest Global	√		
Cogeco Cable	√		
Corus Entertainment	√		
Cott Corp.	√		
Dorel Industries	√		
Finning International		√	
Forzani Group	√		
Gildan Activewear	√		
IPSCO Inc.		√	
Linamar Corp.		√	
Magna International			√
Maple Leaf Foods		√	
Metro Inc.	√		
Petro-Canada	√		
QLT Inc.		√	
Quebecor Inc.		√	√
Quebecor World	√		
Rothmans Inc.		√	
Saputo Inc.	√		
Sears Canada		√	
Shaw Communications		√	
Shoppers Drug Mart	√		
SNC-Lavalin Group	√		
Stantec Inc.	√		
Suncor Energy	√		
Transat A.T.		√	
Westjet Airlines	√		

COMPANIES COMPRISING THE INDUSTRIAL SAMPLE,
INCLUDING THE NATURE OF THEIR BUSINESS AND THEIR GLOBAL
INDUSTRY CLASSIFICATION STANDARD (GICS) CATEGORY

Company Name	Type/Nature of Business	GICS Category
Astral Media	TV, radio, & outdoor advertising producer	25401030
CCL Industries	Producer of packaging for consumer household, personal case, pharmaceutical & food products	15103010
Empire Company	Grocery chains and real estate manager	30101030
Imperial Oil	Integrated oil & chemical company	10102010
Jean Coutu Group	Operator of drugstore chains	30101010
Loblaw Companies	Grocery store chains and food wholesaler	30101030
MDS Inc.	Health care products & services provider	35102010
St. Lawrence Cement	Supplier of cement and other construction materials	15102010
Thomson Corp.	Information services provider and publisher	25401040
Toromont Industries	Refrigeration and gas compression equipment manufacturer, and Caterpillar dealer for Ontario	20106010
Torstar Corp.	Newspaper and book publisher	25401040
Transcontinental	Printing and publishing	20201010
Weston (George)	Diversified food processor and distributor	30101030

TREND IN BETA VALUES FOR THE 13 FIRMS IN THE LOW-RISK INDUSTRIAL SAMPLE

	Common Share Beta Values For the 60 Months Ending:											
Industrial Company Name	Dec. 1996	Dec. 1997	Dec. 1998	Dec. 1999	Dec. 2000	Dec. 2001	Dec. 2002	Dec. 2003	Dec. 2004	Dec. 2005	Dec. 2006	June 2007
Astral Media	0.38	0.33	0.25	0.07	0.28	0.35	0.57	0.66	0.85	0.74	0.88	0.77
CCL Industries	0.30	0.42	0.51	0.34	0.41	0.19	0.12	-0.05	0.10	0.03	0.39	0.65
Empire Company	0.06	0.47	0.57	0.51	0.50	0.48	0.41	0.26	0.36	0.28	0.54	0.53
Imperial Oil	0.54	0.32	0.40	0.31	0.17	0.07	0.10	-0.04	-0.02	0.42	1.05	1.25
Jean Coutu Group	0.11	0.19	0.60	0.40	0.27	0.24	0.26	-0.15	-0.19	0.08	0.30	0.30
Loblaw Companies	0.75	0.75	0.57	0.35	0.11	0.02	-0.01	-0.13	-0.02	0.10	0.35	0.45
MDS Inc.	0.73	0.76	0.66	0.52	0.76	0.73	0.72	0.99	1.12	0.85	0.87	1.03
St. Lawrence Cement	1.22	0.99	0.79	0.54	0.34	0.22	0.18	-0.09	-0.05	0.03	0.06	0.09
Thomson Corp	0.84	0.82	0.87	0.72	0.71	0.58	0.60	0.52	0.53	0.46	0.50	0.45
Toromont Industries	0.76	0.68	0.84	0.78	0.64	0.39	0.39	0.27	0.36	0.40	0.66	0.62
Torstar Corp.	0.73	0.82	0.90	0.74	0.53	0.47	0.44	0.28	0.34	0.39	0.26	0.29
Transcontinental	0.45	0.68	0.87	0.78	0.55	0.54	0.51	0.30	0.36	0.38	0.51	0.42
Weston (George)	0.75	0.91	0.75	0.59	0.32	0.15	0.05	-0.10	-0.08	-0.03	0.35	0.43
Industrial Sample:												
Mean	0.59	0.63	0.66	0.51	0.43	0.34	0.33	0.21	0.28	0.32	0.52	0.56
Median	0.73	0.68	0.66	0.52	0.41	0.35	0.39	0.26	0.34	0.38	0.50	0.45
2/3 Median + 1/3 Mean	0.68	0.66	0.66	0.52	0.42	0.35	0.37	0.24	0.32	0.36	0.51	0.49
Industrial Sample As a Percent of All S&P/TSX Firms: (Based on 2/3 Median + 1/3 Mean Values)												
	72.5	70.4	71.4	60.0	56.1	53.3	58.9	51.1	60.0	47.8	52.6	47.9

Sources: "Research Insight" database; Dr. Cannon's own calculations.

TREND IN STANDARD DEVIATIONS OF INVESTMENT RETURNS
FOR THE 13 FIRMS IN THE LOW-RISK INDUSTRIAL SAMPLE

Industrial Company Name	Standard Deviations of Investment Returns Over 60 Months Ending: Dec. 1996 %	Dec. 1997 %	Dec. 1998 %	Dec. 1999 %	Dec. 2000 %	Dec. 2001 %	Dec. 2002 %	Dec. 2003 %	Dec. 2004 %	Dec. 2005 %	Dec. 2006 %	June 2007 %
Astral Media	7.61	8.60	9.90	9.10	10.46	10.49	10.27	8.87	8.69	5.17	5.03	4.71
CCL Industries	5.28	5.16	5.55	5.44	6.89	8.33	8.62	8.62	9.10	8.34	7.45	7.95
Empire Company	6.05	6.34	7.14	7.63	7.63	8.26	8.31	7.36	6.95	6.70	5.89	4.65
Imperial Oil	4.85	4.90	5.36	6.32	6.64	7.01	6.97	6.42	5.33	6.67	6.81	7.32
Jean Coutu Group	7.32	7.71	8.90	8.07	8.18	8.90	8.52	7.19	7.30	8.23	7.87	8.44
Loblaw Companies	4.88	5.91	6.55	6.56	7.22	7.26	6.51	5.58	5.53	4.89	4.71	4.76
MDS Inc.	7.47	7.22	6.81	6.90	9.93	10.76	10.75	10.94	11.02	8.41	6.55	5.97
St. Lawrence Cement	11.87	11.55	9.16	8.33	8.39	7.78	8.41	7.11	7.20	6.54	6.46	7.39
Thomson Corp	5.12	4.98	5.69	5.87	7.73	7.43	7.49	7.07	6.86	4.40	4.43	3.90
Toromont Industries	7.44	7.84	8.88	8.49	8.57	8.91	8.81	8.07	7.78	7.11	5.64	5.54
Torstar Corp.	5.25	5.50	6.25	6.38	7.24	8.02	7.90	7.31	7.30	6.29	5.18	5.31
Transcontinental	7.91	7.43	8.19	7.62	7.02	7.29	7.33	6.45	6.56	6.84	6.66	6.02
Weston (George)	4.86	6.20	6.74	7.18	7.84	7.86	7.26	6.38	5.93	4.93	4.81	4.70
Industrial Sample:												
Mean	6.61	6.87	7.32	7.22	7.98	8.33	8.24	7.49	7.35	6.50	5.96	5.90
Median	6.05	6.34	6.81	7.18	7.73	8.02	8.31	7.19	7.20	6.67	5.89	5.54
2/3 Median + 1/3 Mean	6.24	6.52	6.98	7.19	7.81	8.12	8.29	7.29	7.25	6.61	5.91	5.66
Industrial Sample As a Percent of All S&P/TSX Firms: (Based on 2/3 Median + 1/3 Mean Values)												
	69.1	70.4	71.0	69.3	69.2	69.7	71.5	61.0	66.5	67.7	65.9	65.6

Sources: "Research Insight" database.

SAMPLE OF 13 INDUSTRIAL COMPANIES
– INDIVIDUAL COMPANY EQUITY RISKINESS DATA
FOR THE 1990-2006 PERIOD

Industrial Company Name	Variability of Equity Returns Over 1990-2006 SD of ROCE	Variability of Equity Returns Over 1990-2006 SEE of ROCE	Common Share Beta Value 2002-07*	Standard Deviation of Investment Returns 2002-07*
	%	%		%
Astral Media	4.92	4.48	0.77	4.71
CCL Industries	4.16	3.36	0.65	7.95
Empire Company	3.90	3.43	0.53	4.65
Imperial Oil	13.60	4.31	1.25	7.32
Jean Coutu Group	3.46	2.61	1.30	8.44
Loblaw Companies	5.18	5.18	0.45	4.76
MDS Inc.	3.32	3.01	1.03	5.97
St. Lawrence Cement	7.49	6.00	0.09	7.39
Thomson Corp.	2.55	2.43	0.45	3.90
Toromont Industries	4.66	4.61	0.62	5.54
Torstar Corp.	5.84	4.76	0.29	5.31
Transcontinental	5.12	3.76	0.42	6.02
Weston (George)	5.43	4.68	0.43	4.70
13 Industrials:				
Mean	5.36	4.05	0.56	5.90
Median	4.92	4.31	0.45	5.54
2/3 Median + 1/3 Mean	5.06	4.23	0.49	5.66

Sources: Company annual reports; The Financial Post Corporation Service cards; Dr. Cannon's own calculations.

* For the 60 months ending June 2007

A COMPARISON OF UTILITY AND INDUSTRIAL HISTORICAL EQUITY RISKINESS BASED ON BOTH THE VARIABILITY OF ACCOUNTING EQUITY RETURNS OVER TIME AND MARKET-BASED MEASURES OF INVESTMENT RISKINESS

Industrial Company Name	Variability of Equity Returns Over 1990-2006: SD of ROCE %	Variability of Equity Returns Over 1990-2006: SEE of ROCE %	Common Share Beta Value 2002-07*	Standard Deviation of Investment Returns 2002-07* %
I. SAMPLE OF PUBLICLY-TRADED UTILITIES:				
Canadian Utilities	1.35	1.21	0.42	4.95
Emera (NS Power)	1.38	1.17	0.14	3.82
Enbridge Inc.	2.61	2.38	0.28	3.90
Fortis Inc.	1.51	1.51	0.51	5.64
Pacific Northern Gas	3.01	1.13	0.55	5.01
TransCanada Corporation	3.78	3.78	0.44	3.64
Utility Sample:				
Mean	2.27	1.86	0.39	4.49
Median	2.06	1.36	0.43	4.43
2/3 Median + 1/3 Mean	2.13	1.53	0.417	4.45
II. INDUSTRIAL-COMPANY SAMPLE, BASED ON 2/3 MEDIAN + 1/3 MEAN VALUES:				
2/3 Median + 1/3 Mean	5.06	4.23	0.49	5.66
III. BENCHMARK UTILITY AS A PERCENTAGE OF THE TYPICAL LOW-RISK INDUSTRIAL:				
	42.1%	36.1%	85.0%*	78.6%*
			62.7%**	73.1%**

Sources: Company annual reports; The Financial Post Corporation Service cards; Dr. Cannon's own calculations.

* For the 60 months ending June 2007.
** For the 60 months ending December 2006 – see Schedules 12 and 13.

SAMPLE OF 13 CANADIAN INDUSTRIAL COMPANIES – INDIVIDUAL COMPANY DATA ON AVERAGE EQUITY RETURNS AND AVERAGE MV/BV RATIOS

Industrial Company Name	Average Return on Common Equity (ROCE) 1990 – 2006 %	Average Market-to-Book Value Ratio For Common Shares (MV/BV) 1990 – 2006 %
Astral Media	6.8	1.58
CCL Industries	7.6	1.18
Empire Company	8.6	1.47
Imperial Oil	18.7	2.79
Jean Coutu Group	14.8	3.17
Loblaw Companies	13.4	2.99
MDS Inc.	8.9	2.18
St. Lawrence Cement	7.6	1.56
Thomson Corp.	9.8	3.48
Toromont Industries	18.3	2.56
Torstar Corp.	9.4	2.10
Transcontinental	10.0	1.50
Weston (George)	10.6	2.49
Industrials:		
Mean	11.1	2.23
Median	9.8	2.18
2/3 Median + 1/3 Mean	10.2	2.20

Sources: Company annual reports; The Financial Post Corporation Service cards; The Toronto Stock Exchange Review.

Note: Year-by-year data for each company is set out in Schedule 23.

INDUSTRIAL COMPANIES ROCE DATA

Year	Astral Media	CCL Industries	Empire Company	Imperial Oil	Jean Coutu	Loblaw Co.	MDS Inc.	St. Lawrence Cement	Thomson Corp.	Toromont Industries	Torstar Corp.	Trans-continental Inc.	Weston (George)
1990	8.50	7.40	0.10	3.70	18.90	14.60	9.50	6.60	14.00	16.20	6.70	2.40	8.70
1991	8.10	2.70	3.70	2.40	20.30	13.40	9.40	-1.60	9.90	14.00	-0.60	0.30	5.90
1992	6.30	-1.20	6.80	2.90	18.50	8.80	8.10	-12.40	5.70	13.60	8.10	8.10	3.50
1993	5.80	0.80	12.50	4.20	10.10	9.70	8.30	-2.80	11.90	17.30	-1.70	9.60	4.50
1994	7.00	8.60	9.60	5.70	17.00	12.50	9.40	4.20	13.50	30.60	7.90	8.20	5.50
1995	1.30	9.50	3.90	8.60	15.20	13.40	10.30	7.70	12.60	27.10	6.70	10.40	6.80
1996	-9.40	10.30	11.70	14.10	16.20	14.20	12.90	4.90	10.30	24.30	9.70	1.90	9.00
1997	7.10	9.60	12.50	17.60	15.30	15.30	14.10	11.90	12.30	20.00	12.80	11.70	11.70
1998	7.80	8.70	3.50	11.20	15.50	12.80	9.00	16.40	7.90	16.60	11.90	12.10	11.90
1999	6.40	9.40	12.70	11.70	15.70	13.70	14.00	16.30	7.50	16.60	12.10	12.20	13.70
2000	3.80	4.70	3.90	32.40	14.90	15.70	11.90	10.60	8.50	15.40	12.50	13.10	17.40
2001	8.20	4.40	10.50	28.40	15.10	16.80	8.10	12.70	4.90	16.40	0.50	4.00	16.50
2002	10.00	4.40	12.10	25.70	15.50	18.90	8.10	15.50	7.20	12.50	21.30	18.70	18.30
2003	9.60	12.40	10.80	30.60	16.70	19.30	3.50	11.20	10.00	16.50	15.90	17.50	19.50
2004	10.70	13.70	11.20	34.60	9.20	19.20	3.50	11.20	10.60	17.80	14.60	13.90	10.20
2005	12.00	10.90	10.20	40.10	7.00	13.20	2.20	3.40	9.40	17.60	13.00	13.30	16.20
2006	13.10	12.70	9.90	43.40	10.90	-3.90	9.60	13.00	11.00	19.00	9.20	12.20	1.60
Average (1990-06)	6.84	7.59	8.56	18.66	14.82	13.39	8.94	7.58	9.84	18.32	9.45	9.98	10.64

INDUSTRIAL COMPANIES MV/BV DATA

Year	Astral Media	CCL Industries	Empire Company	Imperial Oil	Jean Coutu	Loblaw Co.	MDS Inc.	St. Lawrence Cement	Thomson Corp.	Toromont Industries	Torstar Corp.	Trans-continental Inc.	Weston (George)
1990	1.46	1.08	1.52	1.58	3.23	2.15	1.89	1.66	2.95	1.47	1.83	0.86	1.65
1991	0.98	1.25	1.70	1.41	3.93	2.22	2.00	1.64	3.04	1.50	1.60	0.72	1.59
1992	0.97	1.05	1.65	1.24	3.92	1.84	1.72	1.25	2.90	1.66	1.57	1.10	1.35
1993	1.31	1.04	1.74	1.33	2.56	1.94	1.22	1.18	3.09	2.25	1.61	1.53	1.49
1994	1.44	1.01	1.49	1.37	1.52	1.88	1.14	1.53	3.25	2.75	1.75	1.31	1.45
1995	1.11	1.16	1.32	1.59	1.74	2.03	1.28	1.23	3.04	2.84	1.47	1.12	1.48
1996	1.09	1.21	1.25	1.89	1.68	2.46	1.98	1.09	3.72	3.35	2.00	1.27	1.67
1997	1.28	1.39	1.70	2.61	2.45	3.62	3.28	1.52	4.65	3.56	2.37	1.28	2.51
1998	1.67	1.24	1.79	2.62	3.20	3.99	3.37	1.77	4.26	3.23	2.18	1.46	3.10
1999	1.86	1.02	1.65	2.95	3.04	3.68	3.09	1.76	4.16	2.56	1.82	1.55	2.96
2000	2.03	0.71	1.26	3.34	3.40	3.85	3.19	1.54	4.54	2.39	2.21	1.47	3.13
2001	2.36	0.70	1.35	3.70	3.92	4.15	2.68	1.63	4.11	2.39	2.43	1.50	3.81
2002	1.88	1.19	1.39	3.49	5.55	4.11	2.35	1.65	3.66	2.21	3.02	2.23	4.01
2003	1.58	1.42	1.17	3.59	4.83	3.73	2.10	1.38	3.12	2.37	2.97	2.24	3.30
2004	1.86	1.40	1.26	3.90	3.94	3.55	2.00	1.73	3.04	2.93	2.67	2.33	3.31
2005	1.92	1.58	1.40	5.39	2.97	3.14	1.85	1.90	2.79	3.23	2.31	1.99	3.10
2006	2.05	1.64	1.36	5.51	2.08	2.51	1.97	2.06	2.82	2.89	1.85	1.56	2.46
Average (1990-06)	1.58	1.18	1.47	2.79	3.17	2.99	2.18	1.56	3.48	2.56	2.10	1.50	2.49

A COMPARISON OF ALLOWED EQUITY RETURNS AMONG CANADIAN ENERGY UTILITIES AND PIPELINES STRATIFIED BY OVERALL OR TOTAL INVESTMENT RISKINESS

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
MUCH HIGHER THAN AVERAGE RISK:												
Pacific Northern Gas	11.00	10.75	10.00	10.25	10.00	9.88	10.17	9.80	9.68	9.45	9.02	
Mean Allowed ROCE	11.00	10.75	10.00	10.25	10.00	9.88	10.17	9.80	9.68	9.45	9.02	
HIGHER THAN AVERAGE RISK:												
Nova Scotia Power	10.75	10.75	10.75	10.75	10.75	10.15	10.15	10.15	9.55	9.55	9.55	
FortisBC	10.50	10.25	9.50	10.00	9.75	9.53	9.82	9.55	9.43	9.20	8.77	
Union Gas	11.00	10.44	9.61	9.95	9.95	9.95	9.95	9.62	9.62	9.62	8.54	
Gaz Metro	11.50	10.75	9.64	9.72	9.60	9.67	9.89	9.45	9.69	8.95	8.73	
Mean Allowed ROCE	10.94	10.55	9.87	10.10	10.01	9.82	9.95	9.69	9.57	9.33	8.90	
AVERAGE RISK (BENCHMARK):												
ATCO Electric	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	9.40	9.60	9.50	8.93	8.51	
ATCO Gas	10.50	9.38	9.38	9.38	9.75	9.75	9.50	9.50	9.50	8.93	8.51	
Enbridge Gas Distribution	11.50	10.30	9.51	9.73	9.54	9.66	9.69	9.69	9.57	8.74	8.39	
FortisAlberta	n.a.	n.a.	n.a.	n.a.	n.a.	9.50	9.50	9.60	9.50	8.93	8.51	
Mean Allowed ROCE	11.00	9.84	9.45	9.56	9.65	9.64	9.52	9.60	9.52	8.88	8.48	
LOWER THAN AVERAGE RISK:												
Terasen Gas	10.25	10.00	9.25	9.50	9.25	9.13	9.42	9.15	9.03	8.80	8.37	
TransCanada Pipelines	10.67	10.21	9.58	9.90	9.61	9.53	9.79	9.56	9.46	8.88	8.46	
Mean Allowed ROCE	10.46	10.10	9.41	9.70	9.43	9.33	9.60	9.36	9.25	8.84	8.41	
ALLOWED ROCE PREMIUMS:												11-Year Average
Much Higher vs Higher Risk	0.06	0.20	0.13	0.15	-0.01	0.06	0.22	0.11	0.11	0.12	0.12	0.12
Higher vs Average Risk	-0.06	0.71	0.42	0.54	0.36	0.18	0.43	0.09	0.05	0.45	0.42	0.33
Average vs Lower Risk	0.54	-0.26	0.04	-0.14	0.22	0.31	-0.08	0.24	0.27	0.04	0.07	0.12

TIME-SERIES DATA FOR ASSESSING THE RELATIVE ACCURACY OF *CONSENSUS FORECASTS'* PREDICTIONS OF SUBSEQUENT 10-YEAR CANADA BOND YIELDS

Date of Forecast or Observation	10-Year Canada Bond Yield Forecasts From the November Issue of *Consensus Forecasts*: 3-Month Forward	12-Month Forward	Average of 3 and 12 Month Forward	Average Actual 10-Year Canada Benchmark Yield During Oct-Nov[a]	Actual Average 10-Year Canada Yield During Subsequent Calendar Year	Observed Forecast Errors or Differences: *Consensus Forecasts* Minus Subsequent Year's Actual	Previous Year's Oct/Nov[a] Actual Minus Subsequent Year's Actual
	%	%	%	%	%	%	%
Nov. 1993	6.8	6.8	6.80	6.79[b]	8.43	-1.63	-1.64
Nov. 1994	9.2	8.8	9.00	9.15	8.15	0.85	1.00
Nov. 1995	7.6	7.6	7.60	7.68	7.22	0.38	0.46
Nov. 1996	6.5	6.5	6.50	6.33	6.14	0.36	0.19
Nov. 1997	6.0	5.9	5.95	5.55	5.27	0.68	0.28
Nov. 1998	5.2	5.3	5.25	5.08	5.56	-0.31	-0.48
Nov. 1999	6.1	5.9	6.00	6.13	5.92	0.08	0.21
Nov. 2000	5.9	5.8	5.85	5.76	5.48	0.37	0.28
Nov. 2001	4.9	5.4	5.15	5.00	5.29	-0.14	-0.29
Nov. 2002	5.3	5.7	5.50	5.15	4.81	0.69	0.34
Nov. 2003	5.0	5.3	5.15	4.88	4.57	0.58	0.31
Nov. 2004	4.9	5.2	5.05	4.50	4.06	0.99	0.44
Nov. 2005	4.4	4.7	4.55	4.16	4.21	0.34	-0.05
Nov. 2006	4.1	4.2	4.15	4.09	n.a.	n.a.	n.a.
				Average Error		0.25	0.08
				Mean Absolute Error		0.57	0.46
				Maximum Error		1.63	1.64

[a] The average benchmark 10-year Canada yield for the last 2 weeks of October and the first 2 weeks of November.

[b] 10-Year Government of Canada bond yield at the end of October.

A PROFORMA COMPARISON OF THE FORECAST OF THE 30-YEAR CANADA BOND YIELD, WITHIN THE AUTOMATIC ADJUSTMENT MECHANISM, USING NP'S EXISTING PROCEDURE AND ITS PROPOSED PROCEDURE BASED ON *CONSENSUS FORECASTS* PREDICTIONS

(column)	(1)	(2)	(3)	(4)	(5)
				Pro Forma Forecast Error	
Pro Forma Test Year	Forecast Using NP's Current Procedure[a]	Forecast Using NP's Proposed Procedure[b]	Actual Average 30-Year Canada Yield Prevailing During Year	NP's Current Procedure Minus Actual	NP's Proposed Procedure Minus Actual
	%	%	%	%	%
1998	6.07[c]	6.51	5.57	0.50	0.94
1999	5.52[d]	5.67	5.72	-0.20	-0.05
2000	6.18	6.12	5.73	0.45	0.39
2001	5.75	5.73	5.77	-0.02	-0.04
2002	5.00	5.63	5.68	-0.68	-0.05
2003	5.63	5.98	5.35	0.28	0.63
2004	4.97	5.68	5.13	-0.16	0.55
2005	4.96	5.52	4.43	0.53	1.09
2006	4.37	4.79	4.27	0.10	0.52
			Average Error	0.09	0.44
			Mean Absolute Error	0.32	0.47
			Maximum Error	0.68	1.09

[a] The average of closing ask yields on the three most-recently-issued series of long-term Government of Canada bonds for the last 5 trading days of October and the first 5 trading days of November each year – see page 2 of this Schedule for details.

[b] The average of the 3-month forward and 12-month forward 10-year Canada yield consensus predictions from the November issue of *Consensus Forecasts* each year, plus the average 30-versus-10-year Canada yield spread for October of the previous year.

[c] The average yield on the Canada's 8.00% of 2027 and 8.00% of 2025 for October 24th and 31st and November 7th, 1997.

[d] The average yield on Canada's 8.00% of 2027 and 5.75% of 2029 for October 23rd and 30th and November 6th, 1998.

UNDERLYING INPUT DATA SUPPORTING FIGURES IN COLUMNS (1) AND (2) ON PAGE 1 OF SCHEDULE 26

A. YIELDS ON VARIOUS GOVERNMENT OF CANADA BONDS ON VARIOUS DATES, AS REPORTED IN THE GLOBE AND MAIL NEWSPAPER

2003 Date:	Oct. 25.	Oct. 26.	Oct. 27.	Oct. 28.	Oct. 29.	Nov. 1.	Nov. 2.	Nov. 3.	Nov. 4.	Nov. 5.	10-Day Average
8.00% of 2027:	4.94	4.95	5.00	4.99	4.95	4.98	4.96	4.94	4.95	5.01	4.967
5.75% of 2029:	4.95	4.96	5.01	4.99	4.96	4.98	4.97	4.95	4.96	5.01	4.974
5.75% of 2033:	4.93	4.94	4.99	4.97	4.94	4.96	4.95	4.93	4.94	4.99	4.954
										Mean of Above:	4.97

2002 Date:	Oct. 25.	Oct. 28.	Oct. 29.	Oct. 30.	Oct. 31.	Nov. 1.	Nov. 4.	Nov. 5.	Nov. 6.	Nov. 7.	10-Day Average
8.00% of 2027:	5.75	5.77	5.70	5.68	5.60	5.62	5.64	5.70	5.69	5.60	5.675
5.75% of 2029:	5.71	5.73	5.67	5.64	5.56	5.58	5.59	5.66	5.65	5.55	5.634
5.75% of 2033:	5.65	5.68	5.61	5.58	5.50	5.52	5.54	5.61	5.59	5.50	5.578
										Mean of Above:	5.63

1999 Date:	Oct. 25.	Oct. 26.	Oct. 27.	Oct. 28.	Oct. 29.	Nov. 1.	Nov. 2.	Nov. 3.	Nov. 4.	Nov. 5.	10-Day Average
8.00% of 2027:	6.37	6.43	6.35	6.28	6.17	6.11	6.10	6.13	6.12	6.13	6.219
5.75% of 2029:	6.29	6.36	6.29	6.21	6.09	6.02	6.01	6.05	6.04	6.05	6.141
										Mean of Above:	6.18

1998 Date:	Oct. 23.	Oct. 30.	Nov. 6.	3-Date Average
8.00% of 2027:	5.49	5.50	5.65	5.547
5.75% of 2029:	5.44	5.44	5.58	5.487
		Mean of Above:		5.52

1997 Date:	Oct. 24.	Oct. 31.	Nov. 7.	3-Date Average
8.00% of 2027:	6.18	6.01	6.03	6.073
5.75% of 2025:	6.18	6.01	6.04	6.076
		Mean of Above:		6.07

B. 30-YEAR VERSUS 10-YEAR GOVERNMENT OF CANADA BOND YIELD SPREADS: AVERAGES FOR OCTOBER OF EACH YEAR, IN PERCENTAGES

Year:	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Average 30-Year Yield:	6.17	5.36	6.21	5.61	5.71	5.61	5.35	5.02	4.28	4.17
Average 10-Year Yield:	5.61	4.92	6.09	5.72	5.23	5.13	4.82	4.55	4.04	4.10
30/10 Spread:	0.56	0.44	0.12	-0.11	0.48	0.48	0.53	0.47	0.24	0.07

BACKGROUND UTILITY-COMPANY EQUITY RETURN DATA AND CALCULATIONS TO SUPPORT THE HISTORICAL RISK VALUE FIGURES USED IN SCHEDULE 21 AND IN THE TABLE IN SECTION VII OF THE TEXT OF THE EVIDENCE

Annual Achieved Rates of Return on Average Common Equity

Year	Canadian Utilities	Emera Inc.	Enbridge Inc.	Fortis Inc.	PNG	TransCanada Corporation		
1990	11.80	n.a.	n.a.	13.49	15.10	15.30		
1991	12.50	n.a.	n.a.	12.66	14.90	14.80		
1992	13.50	8.20	16.30	12.38	12.50	14.80		
1993	13.40	12.00	17.70	11.84	13.00	13.90		
1994	13.70	11.90	9.50	10.71	13.40	12.80		
1995	14.00	11.50	13.20	10.74	11.80	13.10		
1996	14.80	10.60	15.00	9.61	13.30	13.00		
1997	14.80	10.60	14.20	9.43	13.30	12.40		
1998	14.80	9.50	13.80	8.24	10.10	8.30		
1999	14.50	10.80	14.30	8.55	10.80	0.00		
2000	15.40	10.90	18.60	9.73	9.80	13.60		
2001	15.00	10.60	18.60	12.44	7.50	11.60		
2002	17.70	6.70	18.30	12.23	5.90	13.40		
2003	13.70	9.80	19.00	12.30	7.60	14.40		
2004	15.20	9.80	17.00	11.28	7.00	16.30		
2005	12.20	9.00	13.20	12.40	8.30	17.60	Sample Mean	Sample Median
2006	14.30	9.10	13.90	11.87	5.90	14.50		
For 1990-2006:								
SD (ROCE)	1.3467	1.3807	2.6134	1.5132	3.0092	3.7787	2.274	2.063
SEE (ROCE)	1.2084	1.1651	2.3840	1.5097	1.1322	3.7762	1.863	1.359
For 1994-2006:								
SD (ROCE)	1.2001	1.2821	2.7220	1.4392	2.6693	4.1632	2.246	2.054
SEE (ROCE)	1.2000	0.9715	2.4041	1.1449	1.1785	3.8777	1.796	1.189

Source: Dr. Cannon's own calculations.