JOINT SUBMISSION
OF THE
ATCO UTILITIES AND ALTAGAS UTILITIES

PREPARED TESTIMONY

on

FAIR RETURN ON EQUITY
FOR A BENCHMARK UTILITY

of

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I. INTRODUCTION

A. PREFACE

My name is Kathleen C. McShane and my business address is 4550 Montgomery Avenue, Suite 350N, Bethesda, Maryland 20814. I am a Senior Vice President of Foster Associates, Inc., an economic consulting firm. I hold a Masters in Business Administration with a concentration in Finance from the University of Florida (1980) and am a Chartered Financial Analyst (1989). My fields of expertise are finance and form of regulation. I have presented expert testimony on behalf of Canadian utilities in more than 100 cases since 1987. My professional experience is detailed in Appendix A to this Exhibit.

B. PURPOSE OF TESTIMONY

The purpose of this testimony is

(a) to recommend a benchmark return on equity to be used as a point of departure for setting the allowed returns on equity for the Alberta utilities; and,

(b) to recommend an automatic adjustment mechanism for changing the allowed returns on equity in subsequent years to reflect changes in the capital markets that impact on the utility cost of equity.

This testimony is being filed jointly on behalf of the ATCO Utilities (ATCO Electric TRANSCO and ATCO Electric DISCO, ATCO Gas and ATCO Pipelines) and AltaGas Utilities.

C. SUMMARY OF CONCLUSIONS

1. In setting allowed returns for the Alberta utilities for 2004, and implementing a formula for subsequent years, the following factors should be recognized:

(a) Globalization of capital markets means that competition for equity is not limited to domestic markets. The allowed returns need to recognize global return opportunities. In particular, the allowed returns should recognize that U.S. utilities are viewed as close proxies for an investment in a Canadian utility.

(b) There has been a material increase in the spreads between the yields on long-term utility bonds and Government of Canada bonds. The expanded debt premium is evidence that the equity risk premium required by Canadian utilities relative to long Canadas has also expanded.

(c) The comparable earnings test shows an increasing divergence between returns achieved by low risk competitive industrials and the level of allowed returns. The comparable return standard requires that the Board give weight to the comparable earnings test in setting allowed returns for the Alberta utilities.

2. The Board needs to recognize that no single test used to estimate a fair return is sufficient in isolation. All should be given weight in arriving at a fair return.

The three tests traditionally used to arrive at a fair return indicate the following results:

Equity Risk Premium	10.5-10.75%
Discounted Cash Flow	11.0-11.25%
Comparable Earnings	no less than 13.0%

3. The application of the above tests, in conjunction with the three key factors delineated above, indicate that a fair return for a benchmark, or average risk, Canadian utility for 2004 is in the range of 11.0-11.5%.

4. For purposes of an automatic adjustment mechanism, I recommend that:

(a) The Board change the benchmark return by 50% of the change in forecast 30-year Canada yields.

(b) The mechanism apply for the three-year period 2005-2007, with a review in 2007.

(c) The mechanism be applicable within a range of long Canadas of 4-8%, and comprise the requirement for a review if the utility/long Canada bond yield spread exceeds 50% of the utility equity risk premium established by the Board.

II. GENERIC RETURN ON EQUITY ISSUES

On April 16, 2003, the Board determined that it would proceed with a Generic Cost of Capital Proceeding. The Board noted in its Notice of Hearing that a standardized approach to rate of return and capital structure has the "potential to achieve certain positive benefits including reduced regulatory costs, while continuing to result in a fair return for all utilities and in just and reasonable rates for all customers." In a follow-up ruling issued May 28, 2003, the Board confirmed that it "expects to adopt a standardized approach to rate of return and capital structure."

In Appendix A to the May 28 ruling, the Board set out the scope of the proceeding, which included the following Return on Equity Issues:

1. Return on Equity Methodology
2. Allowed 2004 Return on Equity
3. Annual Adjustment Mechanism
4. Process to Review the Return on Equity

This testimony will address those issues. The Capital Structure issues have been addressed in separate documents. To the extent appropriate, this evidence will draw upon the evidence filed in the most recent ATCO Electric, ATCO Gas, ATCO Pipelines and AltaGas Utilities General Rate and General Tariff Applications, with updates as appropriate.

III. DEFINITION OF A BENCHMARK RETURN ON EQUITY

In the context of a generic proceeding encompassing return on equity, a benchmark return on equity should be set by the Board. A benchmark return on equity is one that can be used as a point of departure (or "benchmark") for estimating the cost of equity for each of the companies to which the generic approach will apply. For purposes of this testimony, the benchmark return on equity will be defined as the return on equity applicable to an average risk Canadian utility. An average risk utility would be defined as one which, on a stand-alone basis, has a capital structure, given its business risks, that is compatible with a debt rating in the A category.

A debt rating in the A category is consistent with the fair return principles of assuring access to the capital markets at reasonable cost under most market conditions so that the utility can maintain creditworthiness and financial integrity. The median debt ratings of the major utilities in Canada are currently A/A- by DBRS and A- by Standard & Poor's.

The applicability of the benchmark return on equity to a specific utility then becomes dependent on the business risks and capital structure adopted for that utility. If the common equity ratio adopted for a particular utility is sufficient to result in that utility facing average total, or investment, risk, the benchmark return on equity can be directly applied to the utility, with no adjustment. If, however, the subject utility, with the adopted capital structure, faces more or less investment risk than the typical (average) Canadian utility, an increment to, or reduction from, the benchmark return on equity to reflect its differential total risk, will be required.

IV. BACKGROUND

In convening a generic hearing, this Board joins a number of other Canadian regulators in seeking to devise a more streamlined approach to determining the cost of capital. A review of the Canadian regulatory jurisdictions which have adopted generic and formulaic approaches to cost of capital indicates all have gravitated solely to the equity risk premium test for setting the allowed return on equity and for designing automatic adjustment mechanisms.

Previously, Canadian regulators typically considered three types of tests (with varying weights accorded to the results) in determining allowed returns: comparable earnings, discounted cash flow and equity risk premium, with the latter comprising a number of variants, including the Capital Asset Price Model (CAPM).

By the mid-1990s, a number of Canadian, as contrasted with U.S., regulators were seeking to streamline the process of setting allowed returns, given the time (and cost) required to revisit the issue on an annual basis. In arriving at a methodology that would serve the dual purposes of setting a benchmark return and for implementing an automatic adjustment mechanism for subsequent changes to the benchmark return, regulators were generally concerned with:

(1) The perceived reliability of the available data in assessing the level of the forward-looking benchmark return on equity; and,

(2) The availability of an objective measure of subsequent changes in the level of the required equity return.

With respect to the first concern, the application of the comparable earnings test, to which this Board had historically given weight, had become problematic. First, the sharp decline in inflation in 1992 (from an average of 4.7% over the period 1983-1991 to an average of 1.5% in 1992-1996) cast considerable doubt on the relevance of pre-1991 returns on equity to a future business cycle. Second, the level of returns on equity for low risk industrial firms between 1990-1994 reflected the impact of a prolonged recession and restructuring period. Similar to the returns achieved during a relatively high inflation environment, the relationship between the "recession/restructuring" period returns and future achievable returns was somewhat tenuous.

Related factors led Canadian regulators to give little weight to the discounted cash flow test. The discounted cash flow model requires estimates of investor expectations of future growth in conjunction with prevailing dividend yields. With the protracted decline in earnings, and concurrent lack of growth (or reductions) in dividends, historic growth rates for industrial firms provided no insight into investor expectations for future growth rates. In contrast to the U.S., there was (and continues to be) a dearth of direct measures of investor growth expectations for publicly-traded Canadian firms, as embodied in consensus forecasts of long-term earnings growth rates. In the absence of such estimates, the DCF model could not be reliably applied to either industrials or utilities.

The risk premium test was effectively the only remaining choice for Canadian regulators. As a result, its initial adoption by Canadian regulators as virtually the sole basis for setting a benchmark return and for designing an automatic adjustment mechanism was not unreasonable. The risk premium test provided an objective (observable) means of establishing a point of departure for estimating the required utility equity return, i.e., the long Canada yield, as well as for estimating subsequent changes in the equity return requirement.

Further, with the preponderance of Canadian regulators relying on virtually the same approach, each regulatory Board could be relatively confident that the returns of utilities under their jurisdiction would not deviate significantly from those adopted elsewhere in the country.

The first generic approach to ROE and an automatic adjustment mechanism was adopted by the British Columbia Utilities Commission in June 1994, followed by the National Energy Board in March 1995. Subsequently, the Ontario Energy Board (March 1997), the Public Utilities Board of Manitoba (May 1997), The Public Utilities Board of Newfoundland and Labrador (July 1998), and the Régie in Québec (February 1999) also adopted automatic adjustment mechanisms. The resulting approved benchmark returns are in a relatively narrow range as the starting risk premiums and automatic adjustment mechanisms adopted by Canadian regulators are virtually identical.

The typical automatic adjustment formula has changed allowed returns on equity from year-to-year by 75-80% of the change in forecast long Canada yields, resulting in a reduction in allowed

returns of approximately 225 basis points between 1993-1995 and 2001-2003 as 30-year Canadas have declined from an average of 8.3% in 1993-1995 to a 2001-June 2003 average of 5.6% (Schedule 1).

Although this Board has not explicitly adopted an automatic adjustment formula, the risk premiums which it has allowed over the last seven years for the utilities under its jurisdiction have been similar to the formulaic returns set in other jurisdictions. Table 1 below summarizes the returns allowed for the Alberta utilities since the first benchmark return on equity and automatic adjustment mechanism was adopted by the BCUC in June 1994. All of these decisions have been based either primarily, or solely, on the results of the equity risk premium test.

In contrast to the formulaic returns set in other jurisdictions, the Board has not incorporated an inverse relationship between interest rates and equity risk premiums in its decisions. In this regard, the Board has stated, "the Board is not convinced that the historical data relating equity risk premium to long-term bond yields demonstrates a readily identifiable relationship between the two factors at interest rates below 10 per cent" (EUB Decision 2000-9 (March 2, 2000)).

Table 1

EUB ROE DECISIONS
(June 1994-June 2003)

Company Name	Decision Date	Test Year	Equity Return	30-Year Canada Yield	Risk Premium
	(1)	(2)	(3)	(4)	(5)
NOVA Gas Transmission	11/94	1994	11.75	8.25	3.500
Centra Gas Alberta, Inc.	1/96	1995	12.00	8.25	3.750
NOVA Gas Transmission	1/96	1995	11.50	8.38	3.125
Centra Gas Alberta, Inc.	1/96	1996	11.75	8.00	3.750
ATCO Electric/EPCOR/ TransAlta	10/97	1996	11.25	7.75	3.500
CWNG	2/00	1997	10.50	6.70	3.800
CWNG	2/00	1998	9.375	5.60	3.775
TransAlta/EPCOR	11/99	1999	9.25	5.75	3.500
TransAlta/EPCOR	11/99	2000	9.25	5.75	3.500
AltaGas Utilities, Inc.	8/02	2000	9.90	6.00	3.900
AltaGas Utilities, Inc.	8/02	2001	9.70	5.80	3.900
ATCO Gas & Pipelines (S)	12/01	2001	9.75	6.00	3.750
AltaGas Utilities, Inc.	8/02	2002	9.70	5.80	3.900
ATCO Gas & Pipelines (S)	12/01	2002	9.75	6.00	3.750

Source: Various EUB Decisions.

V. CAPITAL MARKET TRENDS

In setting a benchmark return, the Board needs to recognize the following key factors which have not been captured in the formulaic returns approved in other Canadian jurisdictions.

(1) Globalization of Capital Markets

(2) Market Perceptions of Relative Utility Risk (Increased Utility/Canada Bond Yield Spreads)

(3) Increasing Divergence Between Low Risk Industrial Returns and Utility Allowed Returns

A. GLOBALIZATION OF CAPITAL MARKETS

Since the benchmark returns and automatic adjustment formulas were first introduced in mid-1994 and early 1995, investment by Canadians outside of Canada, as well as investment by non-Canadians in Canada, has grown rapidly. In 1995, the cap on foreign investment held in Canadian pension funds and RRSPs stood at 20%. It has since been raised to 30% (2001); the Federal Government has been urged by associations representing pension funds to remove it entirely. The Investment Funds Institute of Canada (IFIC) had estimated that raising the cap to 20% would increase returns by 1% and raising the cap to 30% would increase the returns by another 0.5%.

Foreign stock purchases by Canadians have increased from $83 billion in 1995 to $665 billion in 2002. Canadian stock purchases by foreign investors over the same time period have grown from $38 billion to $214 billion. Of the $665 billion, approximately 51% was U.S. stocks and 41% was UK stocks.[1] Over the same time period. Canadian direct investment abroad has increased rapidly from $161 in 1995 to $432 billion in 2002.[2] Direct investment in Canada by foreigners has also grown, from $168 billion to $349 billion.[2]

The IFIC monthly reports indicate that over 50% of Canadian equity mutual funds assets are invested in foreign equities. Their report "Year 2002 in Review" stated,

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[1] Statistics Canada, "Canada's International Transactions in Securities", February 2003.
[2] Statistics Canada, "Canada's International Investment Position".

> "During the period of 1991-1998, the percentage of sales in equity mutual funds that were comprised of non-domestic equities has hovered around the 41-58% range. This has significantly increased in 1999 and onwards. While performance in the markets is the major factor affecting such an increase, these figures can also be attributed to increases in foreign content limits in registered retirement savings plans as well as increased interest and availability of foreign clone funds."

In 2001, although the total percentage of foreign assets in the top 100 Canadian pension funds was only approximately 26%, the percentage of foreign equity to total equity was almost 50%.[3]

With the increasing cross-border flows of equity capital, Canadian utilities have to compete globally to attract equity capital, irrespective of whether their own shareholders are Canadian or foreign. Canadian investors will compare the returns available to them in both domestic and foreign stocks and select those that they expect to provide the best risk/return opportunities. Claims that differences between Canadian and U.S. capital markets result in differences in required risk-adjusted returns (i.e., lower required returns in Canada) do not stand up under scrutiny. The principal difference that has been cited is the dividend tax credit in Canada. Since a significant portion of Canadian investment is held in tax-deferred accounts (e.g., trusteed pension funds), the dividend tax credit is not applicable. The marginal investor – who sets security prices – is most likely a non-taxable institutional investor.

In addition, in the past decade, there have been increasing cross-border investments in regulated assets. U.S. firms that have invested in Canadian utilities include Duke Energy (Union Gas and Westcoast), Aquila Corp. (Aquila Networks (Alberta)), and Trans-Elect (Altalink). Canadian firms with regulated assets in the U.S. include Terasen (Express Pipeline), TransCanada (includes Great Lakes, Northern Border), Enbridge Inc. (includes Alliance, Enbridge Energy Partners), Gaz Metro (Vermont Gas) and Emera (Bangor Hydro). The Ontario Teachers Pension Plan, one of the largest Canadian pension funds, has taken an investment position in AltaLink; it has also taken an equity position in Express Pipeline (preponderantly U.S.). Each of these firms will allocate incremental equity resources among its North American investments on the basis of

[3] Benefits Canada, "The Top 100 Pension Funds of 2002".

the risk/return profile. For some of these utilities, the only access to the public equity markets is through the U.S. stock exchanges via the parent company (e.g. Union Gas).

In earlier decisions of the Board, the relevance of U.S. data has been discounted. For example, in Decision 2000-9 for Canadian Western Natural Gas (CWNG), the Board concluded that,

> "...CWNG itself did not operate directly in the U.S. and had minimal indirect business activities in the country. Accordingly, based on all of the arguments related to this issue, the Board considers that the use of U.S. data represents an upper bound for the calculation of the market risk premium." (EUB Decision 2000-9, March 2, 2000, page 65).

The fact that a company has no operations in the U.S. is not pertinent when the capital markets in which capital is raised are global in nature. The cost of capital for an investment that is solely traded in Canada will be determined by reference to securities that are traded in both Canadian and U.S. markets. If the price in Canada for a security traded in both markets does not equate to its U.S. price (after allowing for the exchange rate), arbitrage opportunities will be pursued until the prices do equate. Prices of Canadian company shares that are traded in the U.S. will be priced relative to their U.S. peers. In turn, securities that are traded solely on a Canadian exchange will be priced relative to those that trade in the U.S. Thus, the cost of capital to a purely domestic Canadian utility will reflect a global opportunity cost of capital, particularly as relates to its closest proxies, U.S. utilities.

The following table compares the allowed returns for Canadian utilities to those allowed for U.S. utilities (gas and electric utilities) over the past 10 years.

Table 2

Year	Average Allowed ROE Canadian Utilities	Average 30-Year Canada Yield	Risk Premium	Average Allowed ROE U.S. Utilities	Average 30-Year/ Long-Term Treasury Yield	Risk Premium
1994	11.6%	8.7%	2.9%	11.3%	7.4%	4.0%
1995	12.1	8.4	3.7	11.5	6.8	4.7
1996	11.4	7.8	3.6	11.3	6.7	4.6
1997	10.9	6.7	4.2	11.3	6.6	4.8
1998	10.2	5.6	4.6	11.6	5.5	6.0
1999	9.5	5.7	3.8	10.7	5.9	4.8
2000	9.8	5.7	4.1	11.4	5.9	5.5
2001	9.7	5.8	3.9	11.0	5.5	5.5
2002	9.6	5.7	3.9	11.1	5.4	5.7
2003	9.8	5.5[1/]	4.3	11.5[1/]	4.9[1/]	6.6

[1/] 1st Quarter 2003.

Source: Schedule 2.

Table 2 above shows that Canadian utility returns were at similar or higher levels than U.S. utility returns in 1994, when the first automatic ROE adjustment mechanism was introduced in Canada by the BCUC. However, while the average allowed utility return in the U.S. has remained within a very narrow range, allowed utility returns in Canada have declined by approximately 2% between 1994-1996 and 1999-2003.

Given the decline in interest rates in Canada relative to that in the U.S., it should be expected that the differential between the allowed returns in the two countries would have similarly declined. However, as Canadian regulators gravitated toward the equity risk premium test in the mid-1990s, the differential disappeared, and is now significantly negative despite the close relationship between Canadian and U.S. government bond yields. There is no capital market basis for the current negative spread between the allowed returns in Canada versus the U.S. The current levels of allowed returns in Canada, in my view, reflect a significant overestimate of the extent to which the cost of equity has tracked long Canada yields since the mid-1990s, and a failure of the automatic adjustment formulas to recognize that the factors that underpinned the

decline in long Canada bonds did not similarly reduce expected and required utility equity returns.

Further, there is no reason to conclude that the magnitude of the differences has been the result of differences in total risk. To the extent that the universe of gas and electric utilities in the U.S. has faced higher business/regulatory risks than Canadian utilities, that difference has been offset by higher allowed common equity ratios. Standard & Poor's (S&P) assigns business profile scores to each of the utilities it rates on a scale of "1" to "10", with "1" being the least risky. The typical business profile score for U.S. gas LDCs rated A- or better is "3"; for transmission/distribution electric utilities rated A- or better it is also "3". For all electrics and gas pipelines rated A- or better, it is "4". (Schedule 3).[4] The typical score assigned to Canadian utilities (gas LDC, electric and gas pipeline) has been "3". Thus, S&P's business risk analysis places the typical Canadian utility in the same business risk category as the typical (or average) U.S. gas distribution utility or transmission/distribution electric utility.

The average allowed common equity ratio for the major investor-owned Canadian utilities over the past five years has been approximately 38%. In contrast, the average allowed common equity ratio for U.S. gas and electric utilities (1998-2003) has been 48%, as shown in the table below. The ten percentage point difference between the average common equity ratios translates into a further 75-100 basis points in equity return when the Canadian and U.S. utilities are placed on an equivalent common equity ratio basis.

[4] Based on utilities rated by S&P as of June 23, 2003.

Table 3

Allowed Common Equity Ratios for U.S. Utilities		
	Gas LDCs	**Electric Utilities**
1998	49.5%	46.1%
1999	49.1	45.1
2000	48.6	48.8
2001	44.0	47.2
2002	48.3	46.3
2003 [1st Qtr.]	50.7	49.9
Average [1/]	48.5	46.8

1/ Weighted by number of decisions in each year.

Source: Regulatory Research Associates, Major Rate Case Decisions January 1990-December 2002 and "January-March 2003".

The principal reason for the difference in allowed returns between the two countries arises from differences in methodologies employed by Canadian and U.S. regulators. U.S. regulators rely primarily (and sometimes exclusively) on the discounted cash flow approach, while Canadian regulators have gravitated toward, an now rely virtually entirely on, the equity risk premium approach. The discounted cash flow approach measures investor expected returns directly, by reference to utility dividend yields and expected growth rates. The equity risk premium test, in contrast, estimates the return indirectly using government bond yields as the point of departure. Because it is difficult to accurately measure changes in the required market risk premium from test period to test period, or measure changes in investors' relative risk perceptions, the allowed returns using the risk premium test tend to track changes in forecast long-term government bond yields only.

Although the DCF test, like the risk premium test, is not without controversy in its application (e.g., the need to infer investor growth expectations), the advantage of a DCF-based approach is that it directly measures the utility cost of equity, without having to infer what changes in the spread between the required (or expected) utility equity return and government bond yields have occurred.

Moreover, the resulting allowed ROEs derived primarily from the discounted cash flow results have been considerably more stable than the Canadian utility allowed returns that have tracked the changes in long Canada bond yields.

The disparity between allowed returns in Canada and the U.S. is of concern to market participants.

The Dominium Bond Rating Service, for example, in its May 10, 2000 report on Hydro One, stated that the allowed ROEs for 1999 and 2000 were "somewhat low compared to other alternative investments ...". Following the National Energy Board's decision for TransCanada PipeLines in June 2002, DBRS referred to the 2002 allowed return of 9.53% as "relatively low".

In the most recent commentary entitled, "The Rating Process and the Cost of Capital for Utilities: Five Reasons Why Canadian Utilities Have Lower Ratios, and Five Changes to Regulation Which Should Be Introduced in Canada" (May 2003), DBRS called for increasing the allowed returns in Canada in order to make them more consistent with U.S. returns.

In early March 2003, Standard & Poor's announced that it was reassessing Canadian regulation as a ratings factor. S&P placed five utilities on CreditWatch with negative implications, raising the number of Canadian regulated companies on CreditWatch (negative) to fifteen. S&P, which rates utilities using global metrics, recognized the strengths of Canadian regulation, but noted that Canadian utilities had financial profiles (e.g., debt ratings and profitability measures) noticeably weaker than their global peers.

A CIBC World Markets Report entitled "Pipelines and Utilities: Time to Lighten Up", published December 2001, stated, in reference to the then recent formulaic reduction in Newfoundland Power's allowed return:

> "The magnitude of the reduction in the case of Newfoundland Power illustrates the flaw in using a brief snapshot of existing rates rather than a forecast of rates that are expected to persist during the upcoming year. More importantly, however, it shows the shortcoming of the formula approach itself. Mechanically tying allowed returns on equity to long bond yields is an approach that is simple for regulators to apply; however,

in recent years, with a steady decline in bond yields, it has produced-allowed returns that are out of sync with the cost of capital, and returns that are being achieved with comparable nonregulated companies or regulated returns that are achievable in the U.S."

B. MARKET PERCEPTIONS OF RELATIVE UTILITY RISK

The majority of Canadian regulators have, in recent years, relied heavily on the Capital Asset Pricing Model (CAPM) to determine the allowed returns for utilities. This model, by its very nature, does not readily allow for quantification of changes in the required utility risk premium.

The CAPM has three elements, the market risk premium, relative risk adjustment (beta), and risk-free rate. All are likely to exhibit systematic changes reflecting shifts in the underlying economic fundamentals or risk, but those changes are difficult to extract from the historic data typically used to make estimates. The beta is particularly problematic, for a number of reasons, including the lack of consensus over its very usefulness as the sole measure of risk. To quote a widely-read and well-regarded professor of finance,

> "Beta, the risk measure from the capital-asset pricing model, looks nice on the surface. It is a simple, easy-to-understand measure of market sensitivity. Unfortunately, beta also has its warts. The actual relationship between beta and rate of return has not corresponded to the relationship predicted in theory during the last third of the twentieth century. Moreover, betas are not stable from period to period, and they are very sensitive to the particular market proxy against which they are measured.
>
> I have argued here that no single measure is likely to capture adequately the variety of systematic risk influences on individual stocks and portfolios. Returns are probably sensitive to general market swings, to changes in interest and inflation rates, to changes in national income, and, undoubtedly, to other economic factors such as exchange rates. And if the best single risk estimate were to be chosen, the traditional beta measure is unlikely to be everyone's first choice. The mystical perfect risk measure is still beyond our grasp." Burton Malkiel, *A Random Walk Down Wall Street*, New York: W. W. Norton & Co., 1999, page 238.

In the last several years, it has become even more problematic, as the "decoupling" between utility shares and the overall equity market during the height of the technology-led "boom and bust" reduced the typical co-movement between utility shares and the equity market index as investors first embraced and then fled from the tech stocks. Although the "decoupling" occurred in both Canada and the U.S., the impact on the observed betas of Canadian utilities was more extreme, given the overwhelming effect on the Canadian market of a small number of technology firms – in particular Nortel, BCE and JDS Uniphase. However, the yields on the bonds of Canadian utilities over the past several years do permit the analyst (and the regulator) to observe directly that the relationship between the required utility return and the risk-free rate has changed.

In contrast to government bond yields, corporate bond yields directly reflect investors' perceptions of the business and financial risks to which a company or industry is exposed. Those risks are the same risks that the equity investor faces. The principal difference is that the equity investor is subordinate to the debt investor, and his claims on the assets of the company are residual to those of the debt holder. It is to be expected that the trend in utility bond yields is an objective indicator of the trend in the utility cost of equity.[5] Consequently, the increase in corporate/government bond yield spreads indicates a higher equity risk premium under current capital market conditions.

Since the mid-1990s, the spread between long-term investment grade utility bond yields has widened significantly. Over the period 1995-1997, the spread between long-term A-rated utility bond yields and long-term Canada bond yields averaged approximately 70 basis points. In August 1998, subsequent to the global market crisis, the spread began to rise dramatically. The average spread in 1997 was only approximately 55 basis points; by 1999, it had risen to 120 basis points. In 2002, the average spread between the yields on a sample of long-term A-rated

[5] The spread between corporate bond yields and government bond yields is frequently utilized in academic studies as a means of tracking changes in investors' relative risk perceptions and the risk premium. Two examples include: Robert S. Harris and Felicia C. Marston, "The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts", *Journal of Applied Finance*, Volume 11, No. 1, 2001; and R. Jagannathan and Z. Wang, "The Conditional CAPM and the Cross-Section of Expected Return", *Journal of Finance*, 1996.

utility bonds was 155 basis points; the spread from January-May 2003 has been close to 175 basis points, although it had retreated in May to around 165 basis points (Schedule 1).[6]

Although corporate spreads do vary in a systematic fashion over the business cycle, tending to expand during cyclical contractions and contract during expansions, the persistence of the higher spreads from 1999-2002 indicates a secular increase.

C. INCREASING DIVERGENCE BETWEEN LOW RISK INDUSTRIAL RETURNS AND UTILITY ALLOWED RETURNS

A third factor that the Board should consider in setting a benchmark return is the increasing divergence between Canadian utility and industrial returns. The comparable earnings test shows that low risk Canadian industrial returns have returned to levels experienced in the years preceding the prolonged period of recession and restructuring in the early 1990s. As discussed in further detail in Section VII(c), the returns for low risk Canadian industrials have increased from an average of approximately 10.5% in 1992-1995 to over 15% in 2000-2002. The full business cycle (1992-2002) average is close to 13.0%. That average is close to 325 basis points higher than the typical Canadian utility allowed return of approximately 9.75% at recent 30-year Canada yields (Schedule 2).

The comparable earnings test has been largely ignored by regulators in recent years. Factors at work in the early 1990s including the dramatic shift in the inflationary environment with the adoption of, and adherence to, low inflation targets, and the restructuring of Canadian industry (in conjunction with a prolonged recession) reduced the reliability of the comparable earnings test. These fundamental changes made past earnings a questionable estimate of future earnings.

[6] The comparisons reflect the CBRS A-rated long-term utility indices through August 2000 and a series of long-term utility issues (term to maturity 25 years or more) with at least one debt rating in the A category (S&P or DBRS) from September 2000 to the present. An alternative estimate of the change in yield spreads was made by comparing the indicated spread estimated by RBC Dominion Securities for a 30-year issue for a sample of regulated companies with A ratings by both debt rating agencies from 1996 to present. The indicated spreads are as follows:

Year	Basis Points	Year	Basis Points
1996	56	2000	137
1997	59	2001	137
1998	108	2002	150
1999	107	2003 (Jan-May)	176

However, twelve years have now transpired since the low inflation targets were adopted by the government; at no time during that period has the annual inflation rate exceeded three percent. In addition, there have been eight years (1994-2002) of experience since the industrial restructuring in Canada, engendered in large part by the 1989 Free Trade Agreement. With that experience, the usefulness of the comparable earnings test has been restored.

The comparable earnings test remains the only test that explicitly recognizes that, in the North American regulatory framework (e.g., Alberta), the return is applied to an original cost rate base. As noted in Decision E91093 (TransAlta) of the Public Utilities Board of Alberta, the comparable earnings test recognizes the difference between original cost and market value.

> "The Board recognizes that, in the competitive world, pricing and investment decisions are based on the current market values of assets and the current cost of new capital. However, because the investment base for regulatory purposes is stated on original cost book values, a rate of return such as that determined under the comparable earnings test becomes meaningful." (page 195)

The logic of that conclusion remains valid. The persistence of moderate inflation continues to create systematic deviations between book and market values. Application of a market-derived cost of capital to book value ignores that distinction. The comparable earnings test recognizes the validity of applying "apples to apples".

As the gap widens between the comparable earnings standard and allowed returns on equity, determined solely by reference to the risk premium test, fairness to both ratepayers and shareholders warrants re-adherence to the comparable earnings test, with weight given to both the cost of attracting capital as well as to the comparable earnings standard.[7]

VI. BENCHMARK ROE IN CURRENT CAPITAL MARKET ENVIRONMENT

There are three standards governing the determination of a fair return which have been articulated in landmark court decisions,[8] as well as numerous utility regulatory decisions. These standards set the parameters for the return requirement necessary to induce investment in public utility assets; they call for a utility to be provided the opportunity to:

1. Attract capital on reasonable terms;

2. Maintain its financial integrity; and,

3. Earn a return on the value of its property commensurate with that of comparable risk enterprises.

For purposes of establishing a benchmark return, I recommend that the Board give weight to all three tests that have traditionally been used to set a fair return: the equity risk premium test, the

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[7] In Utilities Cost Order Decision 2002-70, the Board disallowed a portion of the costs incurred by ATCO Pipelines for the preparation of expert testimony on fair rate of return. Some of that disallowance was for the effort required for the application of the comparable earnings test. In that decision, the Board stated,

> "The Board notes that APS's expert witness on return on equity, Kathleen McShane, submitted a detailed analysis of 17 companies based on the comparable earnings test even though she herself expressed the view that the results of the comparable earnings test were of limited reliability. In Decision 2000-9, the Board stated that for various reasons the Board gave 'little weight to the comparable earnings test' for the purpose of determining an appropriate rate of return. Ms. McShane was also a witness in that proceeding. The Board considers that Kathleen McShane's fees for preparation should be reduced given that time was spent on an analysis based on a test generally recognized to be of limited reliability."

It appears that the Board may have misinterpreted my comments with respect to its usefulness. I remain strongly of the view that it is the only test which measures returns in a manner compatible with the base (original cost) to which they are applied. The specific references by the Board to my testimony regarding the comparable earnings were with respect to evidence prepared in 1996, subsequent to the prolonged period of recession and restructuring.

discounted cash flow test and the comparable earnings test. Reliance on multiple tests recognizes that no one test produces a definitive estimate of the fair return. Each of the three tests has different premises, and each has its own strengths and weaknesses. In principle, the concept of a fair and reasonable return does not reduce to a simple mathematical construct. It would be unjust and unreasonable to view it as such. A fair and reasonable return falls within a range, bounded by the cost of attracting capital and the returns achievable by firms of similar risk to utilities (comparable return standard).

The *Northwestern* case, referenced above, the most frequently cited Canadian court case addressing the fair return issue states,

> "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." (emphasis added)

That statement attests to the fact that the EUB needs to recognize the opportunity cost concept embodied in the comparable earnings return approach.

The base to which the return is applied determines the dollar earnings stream to the utility, which, in turn, generates the return to the shareholder (dividends plus capital appreciation). In the early years of rate of return regulation in North America, there was considerable debate over how to measure the investment base. The controversy arose from the objective that the price for a public utility service should allow a fair return on the fair value of the capital invested in the business. The debate focused on what constituted fair value: Was it historic cost, reproduction cost, or market value? Ultimately, the U.S. courts opted for the "reasonableness of the end result" rather than the specification of a particular method of rate base determination.[9] The use of a historic cost rate base became the norm because it provided an objective, measurable point

[8] Northwestern Utilities Ltd., v. Edmonton (1929 S.C.R. 186); Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia (262 U.S. 679, 1923); and Federal Power Commission v. Hope Natural Gas Company (320 U.S. 301, 1944).
[9] Federal Power Commission v. Hope Natural Gas Company (320 U.S. 301, 1994).

of departure to which the return would be applied. There was no prescription, however, that the historic cost rate base itself constituted the "fair value" of the investment.

The application of a capital market-derived "cost of attracting capital" to a historic rate base in principle means that the value of the investment will trend toward the historic cost. The arguments in support of that result focus on the way "cost" has typically been interpreted and applied in determining other cost elements in the regulation of North American utilities. For most utilities, rates are set on the basis of average book costs; that concept has been applied to cost of debt, depreciation expense, as well as to all operating and maintenance expenses.

For economists, the theoretically appropriate definition of cost is marginal or incremental cost. Average historic costs have been substituted for marginal or incremental costs for two reasons: first, as a practical matter, long-run incremental costs are difficult to measure; second, for the capital intensive utility industries, pricing on the basis of short-run marginal costs would not cover total costs incurred.

The determination of the return on common equity has traditionally been a "hybrid" concept. To the extent that the cost of equity is based on a forward-looking measure of the cost of attracting capital, it is in principle an incremental cost concept. It has not, however, been applied to a similarly determined base. It is applied to an original cost rate base. When there is a significant difference in the historic original cost rate base and the corresponding current cost of the investment, application of a current cost of attracting capital to an original cost rate base produces an earnings stream that is significantly lower than that which is implied by the application of that same cost rate to market value.

The current cost of attracting capital is measured by reference to market values. The discounted cash flow test, for example, measures the return that investors require on the market value of the equity. For a utility regulated on the basis of original cost book value, the current cost of attracting equity capital is only equivalent to the return investors require on book value when the market value of the common stock is equal to its book value.

As the market value of the equity of regulated utilities increases relative to its book value, the application of a market-value derived cost of equity to the book value of that equity increasingly understates investors' return requirements (in dollar terms).

Some would argue that the market-value of utility shares should be equal to book value. However, economic principles do not support that conclusion. A basic economic principle establishes the expected relationship between market value and replacement cost which provides support for market prices in excess of original cost book value. That economic principle holds that, in the longer-run, in the aggregate for an industry, market value should equal replacement cost of the assets. The principle is based on the notion that, if the market value of firms exceeds the replacement cost of the productive capacity, there is an incentive to establish new firms. The existence of additional firms would lower prices of goods and services, lower profits and thus reduce market values of all the firms in the industry. In the opposite circumstance, there is an incentive to disinvest, i.e., to not replace depreciated assets. The disappearance of firms would push up prices of goods and services, raise the profits of the remaining firms, thereby raising the market values of the remaining firms. In equilibrium, market value should equal replacement cost. In the presence of inflation, even at moderate levels, absent significant technological advances, replacement cost should exceed the original cost book value of assets. Consequently, the market value of utility shares should be expected to exceed their book value.

To apply a market-derived current (or "bare-bones") cost of equity to an original cost book value, without offsetting opportunities to achieve returns on book equity commensurate with investor return requirements, will tend to produce an uneconomic allocation of scarce capital resources. Hence, when the allowed return on original cost book value is set, the market-derived cost of attracting capital should be converted to a fair and reasonable return on book equity, so that the stream of dollar earnings on book value equates to the investors' dollar return requirements on market value. That conversion requires a financing flexibility component be added to the "bare-bones" cost of equity.

VII. BENCHMARK ROE FOR 2004

A. EQUITY RISK PREMIUM TEST

The following represents relevant updates to my equity risk premium evidence filed in ATCO Pipelines' 2003/2004 GRA.

1. Risk-Free Rate

For purposes of applying the risk premium test, the risk-free rate is represented by the forecast 30-year Canada. The forecast 30-year Canada yield is based on the consensus forecast of 10-year Canada bonds plus the spread between 10- and 30-year Canadas. *Consensus Forecasts*, Consensus Economics (June 2003) anticipates that the 10-year yield 12-months hence will be 5.1%. The average daily spread between 10- and 30-year Canadas for the month preceding the forecast (May 12 to June 11) was 61 basis points, which, when added to the 10-year forecast, indicates a long Canada yield of 5.72%, or 5.75% as rounded to the nearest quarter point. A 5.75% 30-year Canada yield is a reasonable forecast of the risk-free rate for 2004.

2. Risk Adjusted Market Risk Premium Test

(a) Market Risk Premium

The risk-adjusted market risk premium test, as applied in the ATCO Pipelines 2003/2004 GRA, was based on market return data available through 2001. The U.S. and Canadian historic risk premiums were updated through 2002. They show the following, after a third consecutive poor year in the equity market:

Table 4

Historic Average Risk Premiums (1947-2002)		
	Arithmetic	**Compound**
Canada	5.0%	4.2%
U.S.	6.7%	5.9%

Source: Schedule 4.

In light of the increase in Canadian investors' purchases of U.K. securities,[10] I also looked at the historic U.K. indicated market risk premiums over the same period. The U.K. historic premiums were in the range of 5.5% to 5.9% (compound and arithmetic averages respectively) from 1947-2002 (see Schedule 5).

In arriving at an estimate of the forward-looking market risk premium, I not only looked at the averages above, but also at the trends in the underlying returns. Schedule 5 comprises the following:

(1) Twenty-five year rolling averages of Canadian and U.S. equity and long-term government bond returns measured on an arithmetic average basis.

(2) A series of increasing (arithmetic) average market returns for Canada and the U.S. starting in 1947, with the first average covering 25 years (1947-1972), the next average incorporating 26 years, etc., with the final average encompassing the full 1947-2002 period.

(3) A second series of increasing average returns, similar to the first, but with the first average including the most recent 25 year period (1977-2002), with each subsequent average including an additional year.

A review of the resulting averages, each of which appears on the referenced schedules, indicates that the historic equity market returns have not exhibited a secular increase or decrease and fall in the following ranges:

[10] In 1995, U.K. equities represented 4.5% of all foreign equities purchased by Canadian investors. In 2002, they represented almost 42%. (Statistics Canadas "Canada's International Transactions in Securities", February 2003).

Table 5

	Canada	U.S.
25-Year Rolling Averages:		
Range	9.7-14.2%	9.2-17.0%
Average of Averages	11.8%	12.2%
± 1 standard deviation of Averages	10.7-12.8%	10.3-14.1%
Increasing Averages (1947+):		
Range	11.4-13.6%	11.5-14.6%
Average of Averages	12.6%	13.1%
± 1 standard deviation of Averages	12.0-13.2%	12.4-13.8%
Increasing Averages (2002+):		
Range	10.3-12.3%	11.3-14.5%
Average of Averages	11.0%	12.3%
± 1 standard deviation of Averages	11.5-13.1%	10.4-11.6%

Source: Schedule 5.

On balance, given the absence of an upward or downward trend, the analysis indicates an equity market return in the range of 11.5-12.5%.

In contrast, the achieved total bond returns have experienced a trend, increasing over time as a result of the impact of rising inflation in the early years, which produced capital losses and low returns, followed by falling inflation in more recent years, producing significant capital gains – and high returns. That trend is unlikely to continue. In light of the current low level of long-Canada yields – which limits the possibility of future capital gains – the best estimate of the future expected long Canada return is the recent forecast long Canada yield which underpins the equity risk premium test.

Based on the forecast of 30-year Canadas of 5.75% and a market return of 11.5-12.5%, the indicated market risk premium would be in the range of 5.75-6.75%, or a mid-point of 6.25%.

Based on both achieved risk premiums and the trend analysis, a reasonable estimate of the market risk premium is in the approximate range of 5.75-6.25%, or a mid-point of 6.0%.

(b) Relative Risk Adjustment

The analysis of the relative risk adjustment in my evidence in the ATCO Pipelines 2003 was

conducted based on data ending 2002. I have undertaken no further updates. I concluded in that evidence that a relative risk adjustment of 0.60-0.65 was warranted for an average risk utility; I adopt that estimate for the benchmark utility cost of equity.

(c) Benchmark Utility Risk Premium

A 6.0% market risk premium, adjusted downward by a 0.60-0.65 relative risk adjustment, results in a benchmark utility risk premium of 3.75%.

3. DCF-Based Equity Risk Premium Test

The DCF-based equity risk premium test applied to a sample of relatively "pure-play" U.S. gas distributors, was described in the ATCO Pipelines 2003/2004 GRA testimony. The test was updated through first quarter 2003, as summarized below.

The updated results indicate the following:

- The average utility risk premium over the entire 1993-2003 (1st Q) period was 4.5%; the corresponding average long-term government bond yield was 6.2% (see Schedule 6).

- The test results indicate that there is an inverse relationship between the utility equity risk premium and long-term government bond yields. That relationship is as follows:

$$\text{Equity Risk Premium} = 9.42 - .78\ (\text{Long-Term Government Bond Yield})$$
$$R^2 = 63.3\%$$

The equation above, however, does not capture the impact of the rising spreads between long-term utility and government bond yields during the period of analysis.

Adding the spread between Moody's long-term A-rated utility bonds and long-term government bonds as a second explanatory variable results in the following equation:

1

$$\text{Equity Risk Premium} = 7.87 - .61\ (\text{Long-Term Government Bond Yield}) + .316\ (\text{Spread})$$
$$R^2 = 65.5\%$$

2 The second equation indicates that the equity risk premium increases/decreases by approximately
3 60 basis points for every one percentage point decrease/increase in long-term government bond
4 yields and increases/decreases by 32 basis points for every one percentage point
5 increase/decrease in the utility/government bond yield spread.

6 At a long-Canada yield of 5.75%, and a recent average Canadian A-rated utility/government
7 bond yield spread of approximately 140 basis points, the indicated utility risk premium is 4.9%.

8 Two issues have arisen regarding the application of the DCF-based risk premium test, reliance
9 on U.S. LDCs as a proxy for a benchmark Canadian utility and the reliability of the earnings
10 growth estimates as measures of investor expectations. The issue of reliance on U.S. LDCs as a
11 proxy for a benchmark Canadian utility has been addressed in Section VII-B, Discounted Cash
12 Flow Test.

13 The issue of the reliability of the earnings growth forecasts arises from the documented optimism
14 of the investment analysts who make the forecasts.

15 I do not dispute that studies have shown analysts' forecasts to have been optimistic. However, as
16 long as investors believe the forecasts, and price the securities accordingly, the resulting DCF
17 cost of equity will be an unbiased estimate of investors' expected returns. In the case of the eight
18 LDCs that form the basis for the DCF-based risk premium test, the average expected long-term
19 growth rate for the entire period of analysis was 5.6%. That growth rate is quite similar to the
20 long-term expected nominal growth in the economy as a whole over the same period,[11] and is
21 thus not out-of-line with the level of growth investors would reasonably expect in the long-term.

[11] The average expected long-term nominal rate of growth in the U.S. economy, based on consensus forecasts (Blue Chip *Economic Indicators*, March editions, 1993-2003), has been 5.3% during the same period as the DCF-based risk premium test.

A further means of assessing the reasonableness of growth rates is to compare the resulting DCF costs to the returns that have been allowed for U.S. LDCs over the same period. As I discuss in Section VII-C, the DCF test is the principal (and frequently the only) model relied on by U.S. regulators. The allowed returns for U.S. gas LDCs should thus track their DCF costs of equity. Moreover, the allowed returns will reflect the application of a variety of DCF approaches (e.g., constant growth versus multi-stage models; forecast versus historic growth rates). Consequently, the allowed return should not, in the aggregate across jurisdictions, reflect either an upwardly or downwardly biased measure of the utility cost of equity.

The average DCF cost in my DCF-based risk premium model from 1993-2003 (1st Q) was 10.8%; the average allowed return for U.S. gas LDCs from 1993-2003 (1st Q) was approximately 11.3% (Regulatory Research Associates, *Regulatory Focus: Major Rate Case Decisions, January 1990-December 2002* and *January-March 2003*).[12] The actual allowed returns for LDCs were, on average, some 50 basis points higher than the indicated DCF costs of equity in my equity risk premium study; on this basis, there is no reason to conclude that the DCF costs which form the basis of the DCF-based equity risk premium analysis are upwardly biased.

4. Historic Utility Equity Risk Premiums

The historic utility equity risk premiums for Canada and the U.S. were updated through 2002; the resulting averages are as follows:

---

[12] The average of the most recent allowed returns for the specific eight LDCs in the proxy sample was 11.0%. (See Schedule 2, page 4 of 4). The earned returns on book value for this sample over the period of analysis (1993-2002) were as follows:

Average	12.5%
Median	11.9%
Average of Annual Sample Medians	12.4%

Source: Schedule 6, page 2 of 2).

Table 6

Index	Period	Average Risk Premiums	
		Arithmetic	Compound
TSX Gas/Electric Utilities	1956-2002	4.5%	4.0%
S&P/Moody's LDCs	1947-2002	5.8%	5.2%
S&P/Moody's Electrics	1947-2002	4.8%	4.1%

Source: Schedule 7.

Based on historical average utility risk premiums, the indicated utility risk premium is in the approximate range of 4.25-4.75%.

5. Equity Risk Premium Test – Conclusions

The three equity risk premium tests indicate the following utility risk premiums:

Risk-Adjusted Market Risk Premium	3.75%
DCF-Based Risk Premium	4.9%
Historic Utility Risk Premium	4.5%

Based on the three tests, the estimated equity risk premium for a benchmark Canadian utility is 4.25-4.5%.

Based on the forecast 5.75% 30-year Canada yield, the "bare-bones" cost of equity is 10.0-10.25%. A 50 basis point adjustment for financing flexibility results in a return on equity of 10.5-10.75%.

B. DISCOUNTED CASH FLOW TEST

The discounted cash flow test, in contrast to the CAPM, provides a direct measure of the utility cost of equity. The conceptual basis for the test was set forth in my February 2003 testimony for ATCO Pipelines and will not be repeated here.

However, prior to providing an updated application of the test, I would add the following

observations regarding the test.

1. Reliance On The DCF Test By U.S. Regulators

The discounted cash flow test is the principal, and frequently the only, test relied upon by U.S. regulators. The test was adapted for use in a regulated context by Dr. Myron Gordon, Professor Emeritus at the University of Toronto. It was first presented in a regulatory proceeding in the mid-1960s. Dr. Gordon recently commented on the model in a book review published in the *Globe and Mail* (March 29, 2003), in which he commented on the DCF model as follows,

> "Regulating privately owned electric-power companies in the U.S. has been highly successful, in part due to a model I developed for arriving at a fair rate of return on capital for a utility company."

Another recent article published in *Public Utilities Fortnightly* (May 15, 2003) by Dr. Jeff Makholm, entitled, "In Defense of the 'Gold Standard'", stated,

> "The DCF method has endured for most of the past two decades for three basic reasons:
>
> - It rests on a solid, straightforward theoretical base;
> - It capitalizes on the depth of U.S. capital markets – meaning analysts can use "proxy groups" of publicly traded companies in the same industry to manage the variability of individual company DCF calculations; and
> - It makes use of company growth projections from disinterested industry analysts – a key attribute for a method to gauge the opportunity cost of capital in the mind of investors.[FN]"

The footnote added a further observation:

> "Regulatory commissions outside the United States do not have the luxury of either such deep capital markets (with many publicly traded companies in the same industry) or the associated vast array of stock analysts. As a result, they use other methods, but with less robust results and often more extensive contention."

The author goes on to contrast the DCF method with the CAPM as follows:

> "It is difficult to overstate the practical importance of these three attributes of the DCF method. The CAPM, by comparison, is abstruse as a piece of theory. Further, because most of the components of the calculation are common to all companies (i.e., the risk-free rate and the market risk premium), the CAPM cannot make use of the law of large numbers. That is to say, the problems, associated with which risk-free rate to pick, or which market risk premium to adopt, hinder the result, no matter how many companies the calculations are performed upon."

2. Issues in the Application of the DCF Test

Two issues that have arisen in my application of the DCF test in prior testimony have been (1) the reliance on U.S. proxies rather than Canadian utilities, were in large part due to perceptions that U.S. utilities face a different level of investment risk; and (2) the reliability of using analysts' forecasts of earnings growth as estimates of investor expectations.

With respect to the former, I believe reliance on U.S. utilities is appropriate for several reasons:

1. There are an insufficient number of relatively pure-play Canadian utilities to which the test can be reliably applied to arrive at an estimate of the cost of equity for a benchmark Canadian utility.

2. There is an insufficient data base of analysts' forecasts of long-term earnings growth for individual Canadian utilities to arrive at a consensus view of growth expectations.

3. With increasing integration of the capital markets, Canadian and U.S. utilities are viewed as proxies for one another. The cost of equity for a sample of U.S. utilities of similar risk to a benchmark Canadian utility provides a relevant estimate of the opportunity cost of equity for a benchmark Canadian utility.

The criteria for selection of a sample of U.S. utilities to be used as a proxy for a benchmark Canadian utility were specifically structured so as to ensure a proxy group that was relatively "pure-play" and faced a similar level of business risk to the typical Canadian utility. First, the

selection criteria limited the U.S. utilities chosen to relatively "pure-play" local gas distribution companies (to eliminate the specific risks associated with electric restructuring); the selected LDCs had to have more than 85% of 2001 assets devoted to natural gas distribution operations. The companies also had to have an S&P debt rating of A- or better, equal to or better than the S&P debt ratings for Canadian utilities.

The resulting sample of eight U.S. LDCs has an average Standard & Poor's business risk profile score of "3" (see Schedule 8), which is equal to the average score assigned to date to Canadian utilities. The scores assigned to date to Canadian utilities are as follows:

AltaLink L.P.	2.5
Enbridge Inc./Enbridge Gas Distribution	2
Hydro One Networks	3
Newfoundland Power	3
Nova Gas Transmission	3
Nova Scotia Power	4
TransCanada PipeLines	3
Median	**3**

With respect to the analysts' forecasts of long-term earnings growth, their reliability as estimates of investors' growth expectations was discussed in Section VIII-A.3 dealing with the DCF-based equity risk premium test. As a further comment, I would note that the Federal Energy Regulatory Commission relies on a constant growth model for the electric utilities under its jurisdiction that specifically employ the I/B/E/S earnings growth rates and the *Value Line* sustainable growth rates.

Further, the recent forecasts of long-term earnings growth utilized in my constant growth DCF model are in the range of 5.0-6.0%. These growth rates are consistent with expected long-term economic growth (i.e., growth in nominal GDP) and thus provide a reasonable estimate of the longer-term growth potential of utilities.

The DCF test was applied to the sample of eight U.S. LDCs identified on Schedule 9 using two different measures of investor growth expectations, the consensus of investment analysts' forecasts of long-term earnings growth and the *Value Line* estimates of sustainable growth (see Schedule 9). The "bare-bones" DCF cost of equity for the sample based on these growth estimates and dividend yields covering the three-month period March-May 2003 is in the range of 10.3-11.1%, or approximately 10.25-11.0%, with a mid-point of approximately 10.5-10.75%. Adding a 50 basis point financing flexibility adjustment to the "bare-bones" DCF cost of equity results in a fair return applicable to a benchmark Canadian utility of 11.0-11.25%.

C. COMPARABLE EARNINGS TEST

1. Conceptual Underpinnings

The comparable earnings test provides a measure of the fair return based on the concept of opportunity cost. Specifically, the test is derived from the premise that capital should not be committed to a venture unless it can earn a return commensurate with that available prospectively in alternative ventures of comparable risk. Since regulation is intended to be a surrogate for competition, the opportunity cost principle entails permitting utilities the opportunity to earn a return commensurate with the levels achievable by competitive firms of similar risk. As noted earlier, the principal Canadian court decision dealing with the concept of a fair return (*Northwestern Utilities Ltd. v. Edmonton* (1929 S.C.R. 186)) calls for giving weight to comparable returns in determining a fair return on book value. The comparable earnings test, which measures returns in relation to book value, is the only test that can be directly applied to the equity component of an original cost rate base without an adjustment to correct for the discrepancy between book values and current market values. Neither the application of the risk premium nor the DCF results without adjustment recognizes the discrepancy.

The concept that regulation is a surrogate for competition implies that the regulatory application of a fair return to an original cost rate base should result in a value to investors commensurate with that of similar risk competitive ventures. The fact that a return is applied to an original cost rate base does not mean that the original cost of the assets is the appropriate measure of their fair market value. The comparable earnings standard, as well as the principle of fairness, suggests

that, if competitive industrial firms of similar risk are able to maintain the value of their assets considerably above book value, the return allowed to utilities should likewise not foreclose them from maintaining the value of their assets as reflected in current stock prices.

Finally, the comparable earnings test is applied to competitive firms, not utilities, to avoid circularity. The achieved returns of utilities are in large measure a function of allowed returns. In contrast, the earnings of competitive firms represent returns available to alternative investments independent of the regulatory process.

2. Principal Application Issues

The principal issues in the application of the comparable earnings test are:

- The selection of a sample of industrials of reasonably comparable risk to a benchmark Canadian utility.
- The selection of an appropriate time period over which returns are to be measured in order to estimate prospective returns.
- The need for an adjustment to the "raw" comparable earnings results to reflect the differential risk of a benchmark Canadian utility relative to the selected industrials.

3. Canadian Industrial Returns

(a) Selection of Canadian Industrials

The selection process starts with the recognition that industrials are generally exposed to higher business risk, but lower financial risk, than a benchmark utility. The selection of industrials focuses on total investment risk, i.e., the combined business and financial risks. The comparable earnings test is based on the premise that industrials' higher business risks can be offset by a more conservative capital structure, thus permitting selection of industrial samples of reasonably comparable investment risk to a benchmark utility.

Utilities are generally characterized by relatively low volatility with respect to both earnings and stock market performance. Consequently, the initial universe (275 companies) was comprised of all companies in the S&P/TSX Index in Global Industry Classification Standard (GICS) sectors 20-30. The sectors represented by the GICS codes in this range are: Industrials, Consumer Discretionary and Consumer Staples.[13] The resulting sample contained 90 firms.[14] From this group of 90 companies, all firms with missing book equity or negative common equity during the period 1990-2001, and/or missing market data (December 1996 to December 2001) were removed, as were all companies which paid no dividends in any year 1992-2001. To ensure that low risk companies were selected, all companies with 1997-2001 betas over 0.70 were removed, as well as any companies whose stock was ranked "Higher Risk" or "Speculative" by the Canadian Business Service (CBS).[15] In addition, companies rated non-investment grade by Standard and Poor's, i.e., BB+ or below, were eliminated. The final sample of low risk Canadian industrials is comprised of 15 companies (Schedule 10).[16]

(b) Time Period for Measuring Returns

Since industrials' returns on equity tend to be cyclical, the appropriate period for measuring industrial returns should encompass an entire business cycle, covering years of both expansion and decline. That cycle should be representative of a future normal cycle, e.g., similar in terms of inflation and real economic growth. Over the past trough-to-trough business cycle (1992-2002), the experienced returns on equity of the sample of 15 industrials were as follows.

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[13] Included in these sectors are major industries such as: Food Retail, Food Distributors, Tobacco, Packaged Foods, Soft Drinks, Distillers, Household Appliances, Aerospace and Defense, Electrical Components & Equipment, Industrial Machinery, Publishing & Printing, Department Stores, and General Merchandise.

[14] SNC-Lavalin was removed due to its recent purchase of regulated electric transmission assets in Alberta; Canadian Pacific Railway was also eliminated due to its reorganization in 2000, which rendered its historic data series inconsistent.

[15] Canadian Business Service (CBS) ranks stocks "Very Conservative", "Conservative", "Average", "Higher Risk", or "Speculative".

[16] The sample selection criteria used for this testimony differ from past proceedings, in that coefficients of variation (COVs) were not relied upon as a selection criterion. It has been argued that reliance on COVs results in a sample of companies with market power. To avoid this point of controversy, COVs were not used.

Average:		14.1%
Median		13.8%
Average of annual medians:		13.0%
Source:	Schedule 10.	

Focusing on the median values, the returns are in the approximate range of 13.0-14.0%.

The average economic growth during the 1992-2002 cycle was 3.2%, compared to the consensus forecast growth rate of approximately 2.8% for the next decade (2003-2013).[17] Prospective longer-term Canadian inflation is forecast to average 2.1% (CPI),[18] slightly higher than the average level achieved during the 1992-2002 business cycle (1.8%). The moderately lower expected real growth, but slightly higher inflation relative to the past business cycle, indicate that the experienced returns on book equity, absent extraordinary events, provide a reasonable proxy for the future.

The cycle average is likely to be a conservative estimate of the future level of returns, given the increase in the level of returns achieved during the cycle, from 10.5% (based on the average of annual medians) in 1992-1995 to 14.4% in 1996-2002. The 1992-1995 average of 10.5% reflects in part the effect of the prolonged recession and restructuring. The more recent years' average (1996-2002) return of 14.4% reflects a level of returns similar to those achieved during the prior (1983-1991) business cycle.

(c) Risk Comparison

With respect to the relative investment risk of the Canadian industrials compared to high grade utilities, the business risk of the industrials exceeds that of utilities; however, this difference is largely offset by the industrials' significantly lower financial risk resulting from higher equity ratios (59% in 2002 compared to 37% on average for Canadian utilities).

[17] Consensus Economics, Consensus Forecasts, April 2003.
[18] Consensus Economics, Consensus Forecasts, April 2003.

Comparisons of the industrials' and utilities' bond ratings and stock ratings indicate that they are in a similar risk class. The median CBS stock rating for the industrials is "Very Conservative", equal to the median for a sample of six investor-owned Canadian gas and electric utilities with publicly-traded stock.[19] The median S&P and DBRS debt ratings for the industrials are BBB+ and A(low) respectively, compared to the utilities' median ratings of A- and A (See Schedules 3 and 11). The median adjusted betas for the industrials were 0.56 and 0.57 for the five year periods ending 2001 and 2002 respectively (see Schedule 11), compared to my estimate of the longer-term relative risk adjustment factor for a benchmark utility of 0.60-0.65.

Based on these comparisons, on balance, the Canadian industrials and utilities are in the same investment risk class. However, their one notch lower debt ratings indicate that the industrials are of slightly higher investment risk. To recognize the industrials' marginally higher risk, the comparable earnings test, applied to a benchmark Canadian utility, should be interpreted as indicating a return of no less than 13.0%.

4. Conclusions

The estimate of a normal cycle average level of returns for low risk Canadian industrials is in the approximate range of 13-0-14.0%. Since the level of investment risk faced by the industrials is marginally higher than that of a benchmark Canadian utility, a fair return based on the comparable earnings test is no less than 13.0%.

D. FAIR RETURN ON EQUITY FOR A BENCHMARK CANADIAN UTILITY

The results of the three tests used to estimate a reasonable return on equity for an average risk, or benchmark, Canadian utility are summarized below:

Equity Risk Premium	10.5-10.75%
Discounted Cash Flow	11.0-12.25%
Comparable Earnings	no less than 13.0%

[19] BC Gas Inc., Canadian Utilities Ltd., Enbridge Inc., Emera, Fortis and TransCanada PipeLines.

In arriving at a reasonable return on equity for a benchmark Canadian utility, I have given primary weight to the cost of attracting capital, as measured by both the equity risk premium and DCF tests. However, the comparable earnings test is entitled to significant weight in setting a fair return that balances both ratepayer and shareholder interests. Based on these results, a fair return for a benchmark Canadian utility is in the range of 11.0-11.5%.

The proposed benchmark utility ROE for 2004 applies to each of ATCO Gas, ATCO Electric TRANSCO, ATCO Electric DISCO, and AltaGas Utilities. For ATCO Pipelines, as derived in its 2003 GRA, a 50 basis point incremental risk premium to the benchmark utility ROE is required to compensate for its higher total risk relative to the benchmark.

VIII. AUTOMATIC ADJUSTMENT MECHANISM

The automatic adjustment mechanism for changing the return on equity needs to meet certain criteria:

1. It should be relatively simple to understand and apply;

2. It should be based on changes in one or more reasonably available and verifiable variables;

3. The selected variable should vary in a quantifiable way with the utility cost of equity; and,

4. The selected variable(s) should not be vulnerable to changes caused by company-specific circumstances which may not impact on the cost of equity for a "benchmark" utility.

Although utility dividend yields, utility bond yields and Government of Canada bond yields are all related in a systematic way to the utility cost of capital, only the last is free from company-specific influences. Consequently, I recommend that the forecast long-term benchmark Government of Canada bond be utilized to adjust the allowed return on equity subsequent to 2004.

Specifically, I recommend that the Board rely on the same methodology as the National Energy Board to estimate the long Canada yield for the subsequent year. In RH-2-94, the NEB stated,

> "Each year, the Board will determine the bond yield forecast for the coming test year by examining the November issue of *Consensus Forecasts* (Consensus Economics Inc., London, England). The 3-month-out and 12-month-out forecasts of 10-year Government of Canada bonds will be averaged. To this figure will be added the average spread between 10-year and 30-Government of Canada bond yields."

The NEB also decided that it would calculate the average spread using the daily 10-year and 30-year Government of Canada bond yields throughout October of the year concurrent with the forecast, using *The Financial Post*. These values are available on the Bank of Canada website.

With respect to the relationship between the forecast 30-year Canada and the allowed return, the following are important considerations:

1. The relationship should balance rate stability with the formula's ability to track the cost of capital. There are at least two pragmatic reasons to factor rate stability into the parameters of the automatic adjustment mechanism.

   First, rate stability is important to customers, particularly in an unbundled environment where retailers may bundle delivery and commodity services for an extended contractual period.

   Second, relative stability in the return on equity provides a degree of assurance that the utility will be able to maintain its creditworthiness. As has been observed since the formula approach was introduced in 1994/1995, allowed ROEs in Canada have declined by some 225 basis points. However, embedded debt costs have exhibited a smaller decline. The speed of the embedded long-term cost decline is related to the specific company's term structure of its debt issues and the extent to which the growth of the company requires frequent debt issues. Since the return on common equity is based on the current cost of capital applied to the entire equity, a decline in the current costs of capital will tend to reduce the allowed return on equity more quickly than the embedded cost rate of debt. As a result, the interest coverage ratio of a company subject to an interest rate sensitive ROE formula may be squeezed in a period of declining interest rates, potentially impairing the utility's ability to raise capital on the most favorable terms or at the most propitious time given capital market conditions. Hence, the adoption of an automatic adjustment mechanism should not ignore a utility's obligation to serve, and the need to maintain its ability to attract capital on reasonable terms, and maintain its creditworthiness.

2. The application of the discounted cash flow test indicates that the required equity return is not as sensitive to changes in long-term government bond yield as the equity risk premium test implies. The sensitivity of the equity risk premium test results to changes in long Canada yields arises in large part because of the limited ability to measure the

changes in equity risk premiums corresponding to changes in government bond yields. Hence, there are not only pragmatic reasons, but empirical support, for establishing a formula that is less sensitive to changes in interest rates.

3. The benchmark return can be set using several tests, while subsequent changes in the return need rely on only a single variable (e.g., long Canada yields). The formula mechanism (i.e., the extent to which the ROE moves with the selected variable), would then be premised on the weights given to each of the tests and the sensitivity of each test result to movements in the chosen variable.

4. There should be internal consistency between the manner in which the benchmark return is set and the formula used to implement subsequent changes in return. To illustrate, if the benchmark return is set on the basis of the equity risk premium test only, and the benchmark 2004 ROE is premised solely on the risk premium test and a close tracking between long Canada bonds and the cost of equity, then obviously the automatic adjustment mechanism adopted by the Board also needs to track changes in long-term government bond yields more closely than if multiple tests are used to set the benchmark.

In determining the exact form of the automatic adjustment mechanism the percentage weight given to each test in arriving at the benchmark return should be specified. The proposed benchmark return of 11.0-11.5% is premised on giving primary weight to the cost of attracting capital (75%) and the remainder to comparable earnings (25%). Equal weight was assigned to the two cost of attracting capital tests, equity risk premium and discounted cash flow.

The weights to be given to each of the tests reflects the following considerations. A utility which has the obligation to deliver needs to be able to attract capital on reasonable terms over the business cycle. Therefore, the cost of attracting capital should be the primary benchmark in establishing a fair return on equity. The two cost of attracting capital tests, equity risk premium and discounted cash flow, should be viewed as independent, but equally valid, means of establishing the investor's required return on equity. Nevertheless, the comparable earnings test—which is a measure of the opportunity cost by reference to returns achievable by comparable risk companies—is also entitled to significant weight in order to satisfy the

comparable return standard. These considerations suggest that the following weights be given to the individual tests:

Test	Weight
Equity risk premium	37.5%
Discounted cash flow	37.5%
Comparable earnings	25.0%

Third, the sensitivity of each of the tests to changes in long Canada yields should be specified. The risk-adjusted market risk premium test and the risk premium test based on historic utility risk premiums do not lend themselves to estimating the relationship between the equity risk premium and long-Canada yields, as they are largely based on a long-term average risk premium. In effect, the underlying premise is a constant long-term risk premium, with the corresponding cost of equity increasing/decreasing by 100% of the change in the forecast long Canada yield.

Relative to these two risk premium tests, the discounted cash flow-based risk premium test and the discounted cash flow test itself exhibit significantly less sensitivity to changes in government bond yields.

The dividend yield component of the DCF test itself varies by approximately 40-45 basis points for every one percentage point change in the long-term government bond yield. When the forecast growth rate is added to the dividend yield, the indicated DCF costs have been relatively invariant to changes in long-term government bond yields over the past ten years, increasing and decreasing by slightly less than 25 basis points for every one percentage point change in long-term government bond yields, as indicated in Section VII-A.2.

However, that latter relationship does not take account of the rising spread between long-term utility bond yields and government bond yields which has been experienced during the period of analysis when the changing spread is explicitly accounted for, the relationship between the DCF cost of equity and long-term Treasury yields is an approximately 40 basis point increase/decrease in the utility cost of equity for every one percentage point increase/decrease in long-term government bond yields. That relationship is similar to the relationship between changes in the dividend yield component and long-term government bonds.

On balance, the DCF test (and the DCF-based risk premium test) indicate an approximately 40-45 basis point change in the utility cost of equity for a one percentage point change in long Canada yields.

With respect to the comparable earnings test, the test is based on returns over an entire business cycle. Therefore, changes in long Canada yields have no impact on the indicated return.

Based on the three different sensitivities and the weights to be given to the various tests, the automatic adjustment mechanism should change the benchmark allowed ROE by 50% of the change in forecast 30-year Canada yields.

Table 7 below illustrates the return on equity for a benchmark utility at various levels of implied 30-year Canadas, is based on a 50% adjustment factor to changes in forecast 30-year Canadian yields.

Table 7

30-Year Canada	Risk Premium	Allowed ROE
4.0%	6.375%	10.375%
5.0%	5.875%	10.875%
5.75%	**5.5%**	**11.25%**
6.0%	5.375%	11.375%
7.0%	4.875%	11.875%
8.0%	4.375%	12.375%

Further, I recommend that certain limitations be placed on the operation of the automatic adjustment mechanism.

1. The mechanism should operate for three years subsequent to the determination of the 2004 benchmark return. The benchmark return and the formula should be fully reviewed in 2007.

2. Irrespective of the initial term of the mechanism specified above, the formula should be reviewed if forecast long Canada yields fall below 4% or exceed 8%. Long Canada yields outside of a range of 4.0-8.0% are likely to indicate a materially altered relationship between long Canadas and the utility cost of equity.

The choice of 4% as the bottom end of the range recognizes there has been no experience with long-term Canada yields at or below this level since the 1950s. If long Canada yields were to reach the upper end of the range (8%) the real cost of capital or inflation would be materially higher than that which is currently anticipated. Both circumstances would warrant a review of the validity of the proposed formula.

3. Since the long-term utility bond/Canada spread is an indicator of the utility equity risk premium, significant changes in the spread would also signal a change in the implied relationship between the utility cost of equity and long Canada bond yields. The formula should be reviewed if the spread on an agreed-upon[20] index of long-term A-rated utility bond yields exceeds 50% of the benchmark utility risk premium implicit in the allowed return

[20] In the absence of a publicly-available index, an index agreeable to all parties could be developed by a Board-appointed committee.

JOINT SUBMISSION
OF THE
ATCO UTILITIES AND ALTAGAS UTILITIES

STATISTICAL EXHIBIT

to accompany

PREPARED TESTIMONY

on

FAIR RETURN ON EQUITY
FOR A BENCHMARK UTILITY

of

KATHLEEN C. McSHANE

FOSTER ASSOCIATES, INC.
Bethesda, Maryland 20814

July 2003

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TREND IN INTEREST RATES AND OUTSTANDING BOND YIELDS
(Percent Per Annum)

	Government Securities										
	3-Month Bills		10-Year Bonds		Long-Term Bonds		Canada Bonds Over 10	Canadian Inflation	Scotia Capital Long-Term	Canadian A-Rated	Exchange Rate (Canadian dollar
Year	Canadian	U.S. a/	Canadian	U.S.	Canadian	U.S. b/	Years c/	Indexed Bonds	Corporates	Utility Bonds d/	in U.S. funds)
1976	8.87	5.00		7.61	9.61	7.86	9.18			10.61	1.01
1977	7.33	5.26		7.42	9.15	7.67	8.70			9.95	0.94
1978	8.68	7.22		8.41	9.57	8.49	9.28		10.10	10.16	0.88
1979	11.68	10.04		9.44	10.50	9.29	10.21		10.91	11.08	0.85
1980	12.80	11.51		11.46	14.13	11.30	12.48		13.28	13.46	0.86
1981	17.72	14.08		13.91	15.59	13.44	15.22		16.32	16.26	0.83
1982	13.62	10.69	13.69	13.00	14.13	12.76	14.26		15.86	15.84	0.81
1983	9.32	8.63	11.43	11.10	12.08	11.18	11.79		12.74	12.85	0.81
1984	11.06	9.58	12.73	12.44	13.00	12.39	12.75		13.50	13.56	0.77
1985	9.43	7.49	10.83	10.62	11.20	10.79	11.04		11.74	11.71	0.73
1986	8.97	5.97	9.12	7.68	9.30	7.80	9.52		10.36	10.42	0.72
1987	8.15	5.82	9.50	8.39	9.75	8.59	9.95		10.71	11.00	0.75
1988	9.48	6.69	9.83	8.85	10.05	8.96	10.24		10.93	11.20	0.81
1989	12.04	8.12	9.80	8.49	9.66	8.45	9.92		10.81	11.05	0.84
1990	12.81	7.49	10.76	8.55	10.69	8.61	10.85		11.91	12.13	0.86
1991	8.73	5.38	9.42	7.86	9.72	8.14	9.76		10.80	11.00	0.84
1992	6.59	3.43	8.05	7.01	8.68	7.67	8.77	4.62	9.90	10.01	0.82
1993	4.84	3.02	7.22	5.87	7.86	6.59	7.85	4.28	8.85	9.08	0.77
1994	5.54	4.34	8.43	7.08	8.69	7.39	8.63	4.41	9.44	9.81	0.73
1995	6.89	5.44	8.08	6.58	8.41	6.85	8.28	4.68	9.02	9.29	0.73
1996	4.21	5.04	7.20	6.44	7.75	6.73	7.50	4.61	8.11	8.38	0.73
1997	3.26	5.11	6.11	6.32	6.66	6.58	6.42	4.14	6.95	7.19	0.72
1998	4.73	4.79	5.30	5.26	5.59	5.54	5.47	4.02	6.22	6.38	0.68
1999	4.69	4.71	5.55	5.68	5.72	5.91	5.69	4.07	6.64	6.92	0.67
2000	5.45	5.85	5.89	5.98	5.71	5.88	5.89	3.69	7.13	7.02	0.67
2001	3.78	3.34	5.49	4.99	5.77	5.50	5.76	3.59	7.09	7.25	0.65
2002	2.55	1.63	5.27	4.56	5.67	5.39	5.65	3.49	6.98	7.22	0.64
2002 Jan	1.96	1.76	5.44	5.07	5.68	5.44	5.74	3.73	6.88	7.12	0.63
Feb	2.06	1.79	5.33	4.88	5.70	5.58	5.70	3.72	6.87	7.23	0.62
Mar	2.27	1.79	5.78	5.42	5.97	5.98	6.00	3.68	7.15	7.35	0.63
Apr	2.40	1.77	5.61	5.11	5.90	5.73	5.87	3.60	7.02	7.20	0.64
May	2.61	1.74	5.50	5.08	5.79	5.76	5.77	3.53	6.97	7.16	0.65
June	2.71	1.70	5.43	4.86	5.81	5.67	5.80	3.43	6.99	7.06	0.66
July	2.81	1.71	5.23	4.51	5.73	5.45	5.70	3.45	7.19	7.32	0.63
Aug	2.94	1.69	5.08	4.14	5.51	5.08	5.48	3.39	6.99	7.20	0.64
Sept	2.75	1.57	4.90	3.63	5.44	4.80	5.39	3.24	6.84	7.27	0.63
Oct	2.71	1.44	5.04	3.93	5.56	5.13	5.53	3.45	7.17	7.44	0.64
Nov	2.71	1.33	5.12	4.22	5.53	5.20	5.51	3.42	6.96	7.25	0.64
Dec	2.66	1.22	4.79	3.83	5.36	4.91	5.31	3.29	6.73	7.01	0.63
2003 Jan	2.82	1.18	5.02	4.00	5.47	4.97	5.43	3.21	6.85	7.13	0.66
Feb	2.92	1.20	4.94	3.71	5.44	4.78	5.38	3.00	6.81	7.17	0.67
Mar	3.14	1.14	5.08	3.83	5.55	4.93	5.48	3.05	7.09	7.35	0.68
Apr	3.19	1.13	4.90	3.89	4.90	4.88	5.34	3.13	6.70	6.96	0.70
May	3.17	1.11	4.41	3.37	5.00	4.45	4.89	2.96	6.35	6.64	0.73
June	3.07	0.90	4.45	3.54	5.09	4.63	5.04	3.04	6.22	6.57	0.74

a/ Rates on new issues.

b/ 20-year constant maturities for 1974-1978; 30-year maturities 1978-2001, long-term average (25 years and above), February 2001 forward. Series represents yields on the more actively traded issues adjusted to constant maturities by the U.S. Treasury based on daily closing bids.

c/ Terms to maturity of 10 years or more.

d/ Series is comprised of the CBRS Utilities Index through 1995; CBRS 30-year Utilities Index from 1996- August 2000; a series of liquid long-term utility bonds maintained by Foster Associates from September 2000 forward.

Note. Monthly data reflect rate in effect at end of month.

Source: Bank of Canada Review; CBRS; Globe and Mail; Annual Statistical Digest (Federal Reserve System); Federal Reserve Bulletin (various issues).

EQUITY RETURN AWARDS AND CAPITAL STRUCTURES ADOPTED BY REGULATORY BOARDS FOR INVESTOR-OWNED CANADIAN UTILITIES
(Percentages)

	Decision Date (1)	Order/ File Number (2)	Debt (3)	Preferred Stock (4)	Deferred Taxes (5)	Common Stock Equity (6)	Equity Return (7)	Forecast 30-Year Bond Yield (8)
Electrics								
Aquila Networks Canada (B.C.) Inc	11/02	L-46-02	58.90	0.00	1.10	40.00	9.82	5.92
ATCO Electric a/	10/97	U97065	48.10	16.20		35.70	11.25	7.75
Maritime Electric b/	10/01	EC2001-608	--	--		40.00	11.00	N/A
Newfoundland Power	6/03	PU 19(2003)	54.06	1.39		44.55	9.75	5.60
Nova Scotia Power	10/02	NSUARB-P-875	55.70	9.30		35.00	10.15	6.95 d/
TransAlta Utilities (Integrated) c/	11/99	U99099	49.50	9.50		41.00	9.25	5.75
Generation	11/99	U99099	50.50	9.50		40.00	9.25	5.75
Transmission	11/99	U99099	55.50	9.50		35.00	9.25	5.75
Distribution	11/99	U99099	36.00	9.50		54.50	9.25	5.75
Gas Distributors								
Atco Gas and Pipelines	12/01	2001-96	54.25	6.52		39.23	9.75	6.00
Enbridge Gas Distribution Inc	5/02	RP-2001-0032	61.81	3.19		35.00	9.66	5.93
Gaz Metropolitain	9/02	D-2002-196	54.00	7.50		38.50	9.89	6.07
Pacific Northern Gas	11/02	G-109-01	60.58	3.41		36.00	10.17	5.92
Terasen Gas / BC Gas Utility	11/02	G-109-01	57.64	9.36		33.00	9.42	5.92
Union Gas	1/99; 7/01	RP-1999-0017	61.09	3.91		35.00	9.95	6.11
Gas Pipelines								
Alberta Natural Gas	12/02	RH-2-94	70.00	0.00		30.00	9.79	5.98
Foothills Pipe Lines (Yukon) Ltd.	12/02	RH-2-94	70.00	0.00		30.00	9.79	5.98
TransCanada PipeLines	12/02	RH-3-94/RH-4-2001	67.00	0.00		33.00	9.79	5.98
Trans Quebec & Maritimes Pipeline	12/02	RH-2-94	70.00	0.00		30.00	9.79	5.98
Westcoast Energy	12/02	RH-2-94	63.39	1.61		35.00	9.79	5.98

a/ Superseded by settlements for 1999/2000, and 2001/2002; ROEs and capital structures not specified.
b/ Maritime Electric's ROE and common equity ratio are set by legislation.
c/ Superseded by subsequent settlements and sale of distribution assets to Utilicorp Networks Canada (Alberta); ROE and capital structure not specified.
d/ Average of experts estimates.

Source: Board Decisions.

RATES OF RETURN ON COMMON EQUITY ADOPTED BY REGULATORY BOARDS FOR INVESTOR-OWNED CANADIAN UTILITIES

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Electrics														
Aquila Networks Canada (B.C.) Inc	13.50	NA	11.75	11.50	11.00	12.25	11.25	10.50	10.25	9.50	10.00	9.75	9.53	9.82
ATCO Electric	13.50	13.50	13.25	11.88	NA	NA	11.25	b/	b/	b/	b/	b/	b/	NA
Newfoundland Power	13.95	13.25	NA	NA	NA	NA	11.00	NA	9.25	9.25	9.59	9.59	9.05	9.75
Nova Scotia Power	--	--	--	11.75	NA	NA	10.75	NA	NA	NA	NA	NA	10.15	NA
TransAlta Utilities	13.50	13.50	13.25	11.88	NA	12.25	11.25	b/	c/	9.25	9.25	NA	NA	NA
Average of Electrics	**13.61**	**13.42**	**12.75**	**11.75**	**11.00**	**12.25**	**11.10**	**10.50**	**9.75**	**9.33**	**9.61**	**9.67**	**9.58**	**9.79**
LDCs														
Canadian Western / AGPL	13.25	13.25	12.25	12.25	NA	NA	NA	10.50	9.38	NA	NA	9.75	9.75	NA
Centra Gas Ontario	13.50	13.75	13.50	12.50	11.85	12.13	NA	11.25	10.69	a/	a/	a/	a/	NA
Enbridge Gas Distribution Inc	13.25	13.13	13.13	12.30	11.60	11.65	11.88	11.50	10.30	9.51	9.73	9.54	9.66	NA
Gaz Metro	14.25	14.25	14.00	12.50	12.00	12.00	12.00	11.50	10.75	9.64	9.72	9.60	9.67	9.89
Northwestern Utilities	NA	13.75	13.75	11.88	11.88	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pacific Northern Gas	15.00	14.00	13.25	NA	11.50	12.75	11.75	11.00	10.75	10.00	10.25	10.00	9.88	10.17
Terasen Gas / BC Gas Utility	NA	NA	12.25	NA	10.65	12.00	11.00	10.25	10.00	9.25	9.50	9.25	9.13	9.42
Union Gas	13.75	13.50	13.50	13.00	12.50	11.75	11.75	11.00	10.44	9.61	9.95	9.95	NA	NA
Average of LDCs	**13.83**	**13.66**	**13.20**	**12.40**	**11.71**	**12.05**	**11.68**	**11.00**	**10.33**	**9.60**	**9.83**	**9.68**	**9.62**	**9.83**
Gas Pipelines (NEB)														
TransCanada Pipelines	13.25	13.50	13.25	12.25	11.25	12.25	11.25	10.67	10.21	9.58	9.90	9.61	9.53	9.79
Westcoast Energy	13.25	13.75	12.50	12.25	11.50	12.25	11.25	10.67	10.21	9.58	9.90	9.61	9.53	9.79
Average of Gas Pipelines	**13.25**	**13.63**	**12.88**	**12.25**	**11.38**	**12.25**	**11.25**	**10.67**	**10.21**	**9.58**	**9.90**	**9.61**	**9.53**	**9.79**
Average of All Companies	**13.66**	**13.59**	**13.05**	**12.16**	**11.57**	**12.13**	**11.36**	**10.88**	**10.20**	**9.52**	**9.78**	**9.67**	**9.59**	**9.80**

Note: A rate freeze was in effect for BC Gas in 1990 and 1991, BCUC regulation resumed in late 1991.
Nova Scotia Power was privatized in 1992.

a/ Merged with Union Gas.
b/ Negotiated settlement, details not available.
c/ Negotiated settlement, implicit ROE made public is 10.5%.

Source: Regulatory Decisions

COMPARISON BETWEEN ALLOWED EQUITY RISK PREMIUM FOR CANADIAN AND US UTILITIES

	Canadian Utilities			U.S. Utilities		
Year	Allowed ROE	Average Long Canada Yield	Equity Risk Premium	Allowed ROE	Average Long Treasury Yield	Equity Risk Premium
1990	13.66	10.69	2.97	12.69	8.61	4.08
1991	13.59	9.72	3.87	12.51	8.14	4.37
1992	13.05	8.68	4.37	12.06	7.67	4.39
1993	12.16	7.86	4.30	11.37	6.59	4.78
1994	11.57	8.69	2.88	11.34	7.39	3.95
1995	12.13	8.41	3.72	11.51	6.85	4.66
1996	11.36	7.75	3.61	11.29	6.73	4.56
1997	10.88	6.66	4.22	11.34	6.58	4.76
1998	10.20	5.59	4.61	11.59	5.54	6.05
1999	9.52	5.72	3.80	10.74	5.91	4.83
2000	9.78	5.71	4.07	11.41	5.88	5.53
2001	9.67	5.77	3.90	11.04	5.50	5.54
2002	9.59	5.67	3.92	11.10	5.39	5.71
2003	9.80	5.49 1/	4.31	11.46 1/	4.89 1/	6.57
Averages:						
1990-1993	**13.12**	**9.24**	**3.88**	**12.16**	**7.75**	**4.41**
1994-1998	**11.23**	**7.42**	**3.81**	**11.41**	**6.62**	**4.80**
1999-2003	**9.67**	**5.67**	**4.00**	**11.15**	**5.51**	**5.64**

Note: For U.S. Treasury yields, 30-year maturities used through January 2001; 25-year or greater maturities used from February 2001 forward.

1/ First Quarter 2003

Sources: Regulatory Focus, Regulatory Research Associates; Various Canadian Regulatory Decisions; Bank of Canada; Federal Reserve.

CURRENT ALLOWED RETURNS FOR EIGHT U.S. GAS DISTRIBUTION UTILITIES

Company	Date of Decision	Docket # / Order #	Allowed Return	Allowed Common Equity Ratio
AGL RESOURCES INC	04/29/02	D-14311-U	11.00%	47.00%
ATMOS ENERGY CORP 1/	01/29/01	U-25-003	11.19%	5/
NEW JERSEY RESOURCES	01/05/94	D-GR-93-04114	11.50%	52.74%
NICOR INC 2/	04/03/96	D-95-0219	11.13%	58.08%
NORTHWEST NATURAL GAS 3/	11/12/99	C-UG-132	10.25%	47.71%
PEOPLES ENERGY CORP				
North Shore Gas	11/08/95	D-95-0031	11.30%	57.04%
Peoples Gas Lt. & Coke	11/08/95	D-95-0032	11.10%	51.08%
PIEDMONT NATURAL GAS CO 4/	10/28/02	DG9 SUB 461	11.30%	52.66%
WGL HOLDINGS INC	10/30/02	C-989-0-12589	10.60%	54.00%
Average			**11.0%**	**52.3%**

1/ for Louisiana Gas Service adopted from decision U-21484A prior to acquisition by Atmos. Range of 10.88% - 11.50%
2/ Case was for Northern Illinois Gas
3/ Case was in Oregon
4/ North Carolina
5/ Common equity ratio is based on a 13 month average permanent actual capital structure.

Source: Regulatory Research Associates, Inc, Regulatory Focus; Company Decisions.

DEBT AND COMMON STOCK QUALITY RATINGS OF MAJOR CANADIAN GAS AND ELECTRIC UTILITIES

Company	Debt Rated	DBRS Bond Rating	S&P Bond Rating	CBS Stock Ranking
AltaLink L.P.	Senior Secured	A(high)	A-	NR
Aquila Networks Canada (British Columbia) Inc.	Secured Debentures	BBB(high)	NR	NR
CU Inc.	Senior Unsecured	A(high)	A+	Very conservative
Enbridge Gas Distribution Inc.	Senior Unsecured	A	A-	Very conservative
Enbridge Inc.	Senior Unsecured	A	A-	Very conservative
Epcor Utilities Inc	Senior Unsecured	A(low)	BBB+	NR
Gaz Metropolitain	Senior Secured	A	A	NR
Hydro One	Senior Unsecured	A	A-	NR
Maritime Electric	Senior Secured	NR	A-	Very conservative
Newfoundland Power	Senior Secured	A (low)	A-	Very conservative
NOVA Gas Transmission	Senior Unsecured	A	A-	NR
Nova Scotia Power	Senior Unsecured	A(low)	BBB+	Very conservative
Pacific Northern Gas	Senior Secured	BB(high)	NR [2/]	Average
Terasen Gas	Senior Secured Senior Unsecured	A A	A- BBB	Very conservative
TransCanada Pipelines	Senior Unsecured	A	A-	Very conservative
Union Gas Limited	Senior Unsecured	A	BBB+	Very conservative
Westcoast Energy	Senior Unsecured	A(low)	BBB+	Very conservative

1/ Corporate Rating
2/ Withdrawn by company; BB- prior to withdrawl.

Note: Debt ratings are for utility; Stock rankings are for parent.

Source: DBRS Bond Ratings, Standard & Poor's, The Blue Book of CBS Stock Reports.

RATE

STANDARD & POOR'S DEBT RATINGS, BUSINESS RISK PROFILE SCORES, DEBT AND INTEREST COVERAGE RATIOS FOR U.S. INVESTMENT GRADE LDCs

	Debt Rating	Business Profile Scores	Debt Ratio (1999-2001)	Average Pre-Tax Interest Coverage (1999-2001)
Nicor Gas Co.	AA	2	55.0	5.0
Nicor Inc.	AA	3	52.9	5.3
WGL Holdings Inc.	AA-	3	48.5	4.2
Average (AA)	**AA**	**3**	**52.1**	**4.8**
Southern California Gas Co.	A+	2	45.0	5.2
Boston Gas Co.	A	3	51.0	1.3
Colonial Gas Co.	A	3	43.8	1.4
KeySpan Corp.	A	4	61.4	2.8
Laclede Gas Co.	A	3	57.1	2.7
New Jersey Natural Gas Co.	A	2	45.9	5.6
Northwest Natural Gas Co.	A	3	51.6	3.1
Piedmont Natural Gas Co Inc.	A	3	51.6	3.4
Questar Gas Co.	A	5	54.3	2.6
Wisconsin Gas Co 1/	A	3	55.6	3.4
AGL Resources Inc.	A-	3	52.1	2.8
Alabama Gas Corp.	A-	2	48.7	3.9
Atmos Energy Corp.	A-	4	62.5	2.2
Indiana Gas Co Inc.	A-	2	65.4	2.6
North Shore Gas Co.	A-	3	42.6	4.4
ONEOK Inc.	A-	5	66.9	2.4
Peoples Energy Corp.	A-	4	55.6	3.7
Peoples Gas Light & Coke Co.	A-	3	48.9	4.3
Average (A) Rated	**A**	**3**	**53.3**	**3.2**
Cascade Natural Gas Corp.	BBB+	3	53.5	3.9
Michigan Consolidated Gas Co.	BBB+	3	58.3	2.5
South Jersey Gas Co.	BBB+	3	59.4	2.9
Southern Connecticut Gas Co.	BBB+	3	52.6	2.6
UGI Utilities Inc.	BBB+	4	53.2	4.9
NUI Corp.	BBB	3	63.0	2.7
Southern Union Co.	BBB	4	57.4	1.8
Southwestern Energy Co.	BBB	8	66.5	0.9
TXU Gas Co.	BBB	5	41.7	0.8
SEMCO Energy Inc.	BBB-	4	68.8	1.9
Southwest Gas Corp.	BBB-	4	64.8	1.8
Average (BBB Rated)	**BBB**	**4**	**58.1**	**2.4**
Average (All LDCs)	**A**	**3**	**54.9**	**3.1**

1/ Debt ratio and interest coverage ratio for 1998-2000.

Source: Standard & Poor's Credit Stats: Electric Utilities (August 20, 2002); Standard & Poor's Utilities and Perspectives (June 23, 2003).

STANDARD & POOR'S DEBT RATINGS, BUSINESS RISK PROFILE SCORES, DEBT AND INTEREST COVERAGE RATIOS FOR U.S. INVESTMENT GRADE ELECTRIC UTILITIES

	S & P Rating	Business Profile Scores	Debt Ratio (1999-2001)	Average Pre-Tax Interest Coverage (1999-2001)
Madison Gas & Electric Co.	AA	5	50.1	3.9
Wisconsin Public Service Corp.	AA-	4	46.3	3.6
Average (AA)		**4**	**48.2**	**3.8**
Otter Tail Power Co.	A+	6	46.4	4.1
San Diego Gas & Electric Co.	A+	5	53.5	3.3
Alabama Power Co.	A	4	49.3	3.6
Boston Edison Co.	A	3	62.3	2.6
Cambridge Electric Light Co.	A	3	39.4	2.0
Central Hudson Gas & Electric Corp.	A	3	44.7	3.3
Commonwealth Electric Co.	A	3	62.9	1.5
Consolidated Edison Co. of New York Inc.	A	3	55.6	3.3
Florida Power & Light Co.	A	4	42.8	4.3
Florida Progress Corp.	A	5	59.2	1.8
FPL Group Inc.	A	5	52.6	3.6
Georgia Power Co.	A	4	45.8	4.6
Gulf Power Co.	A	4	46.3	4.3
Massachusetts Electric Co.	A	3	44.7	3.8
MidAmerican Energy Co.	A	4	46.1	4.3
Mississippi Power Co.	A	4	47.4	4.1
Narragansett Electric Co.	A	3	41.0	3.5
National Grid USA	A	3	47.8	3.6
New England Power Co.	A	3	55.2	4.2
Niagara Mohawk Power Corp.	A	4	69.0	1.0
NSTAR	A	3	82.3	1.5
Orange and Rockland Utilities Inc.	A	3	58.6	2.6
Savannah Electric & Power Co.	A	4	47.3	3.9
Southern Co.	A	4	48.8	3.3
Ameren Corp.	A-	5	47.0	5.0
Baltimore Gas & Electric Co.	A-	3	60.1	2.4
Central Illinois Light Co.	A-	4	44.9	2.7
Central Illinois Public Service Co.	A-	3	51.6	3.6
Commonwealth Edison Co.	A-	4	49.1	3.2
Delmarva Power & Light Co.	A-	3	59.2	3.4
Exelon Corp.	A-	6	51.8	4.1
IDACORP Inc.	A-	5	54.2	3.6
Idaho Power Co.	A-	4	54.0	3.1
Kentucky Utilities Co.	A-	4	47.0	4.4
LG&E Energy Corp.	A-	6	59.9	2.5
Louisville Gas & Electric Co.	A-	4	46.6	5.1
PPL Electric Utilities Corp.	A-	4	64.7	3.4
SCANA Corp.	A-	4	57.3	2.5
Sempra Energy	A-	5	59.2	3.0
South Carolina Electric & Gas Co.	A-	4	45.7	3.9
Southern Indiana Gas & Electric Co.	A-	4	50.6	4.1
Union Electric Co.	A-	4	39.9	5.7
Virginia Electric & Power Co.	A-	4	55.7	3.0
Wisconsin Electric Power Co.	A-	4	50.3	3.8
Wisconsin Power & Light Co.	A-	4	54.9	2.6
Average (A)	**A**	**4**	**52.3**	**3.4**

STANDARD & POOR'S DEBT RATINGS, BUSINESS RISK PROFILE SCORES, DEBT AND INTEREST COVERAGE RATIOS FOR U.S. INVESTMENT GRADE ELECTRIC UTILITIES

	S & P Rating	Business Profile Scores	Debt Ratio (1999-2001)	Average Pre-Tax Interest Coverage (1999-2001)
ALLETE Inc.	BBB+	6	59.0	3.1
Alliant Energy Corp.	BBB+	5	56.7	2.3
Atlantic City Electric Co.	BBB+	3	63.5	2.2
Cincinnati Gas & Electric Co.	BBB+	4	52.5	4.8
Cinergy Corp.	BBB+	5	60.9	3.3
Conectiv	BBB+	4	70.0	2.4
Connecticut Light & Power Co.	BBB+	4	70.0	0.4
Detroit Edison Co.	BBB+	6	55.6	2.8
Dominion Resources Inc.	BBB+	5	62.6	2.0
DTE Energy Co.	BBB+	6	58.1	2.1
Duke Energy Corp.	BBB+	5	47.0	4.2
Hawaiian Electric Co.	BBB+	5	47.7	3.1
Northeast Utilities	BBB+	5	66.2	1.0
Northern States Power Wisconsin	BBB+	4	46.1	3.5
OGE Energy Corp.	BBB+	5	60.7	2.8
Oklahoma Gas & Electric Co.	BBB+	4	52.9	4.2
Portland General Electric Co.	BBB+	4	49.4	2.9
Potomac Electric Power Co.	BBB+	3	61.6	2.8
Progress Energy Inc.	BBB+	5	55.8	3.2
PSI Energy Inc.	BBB+	4	59.6	3.3
Public Service Co. of New Hampshire	BBB+	5	69.9	3.1
Rochester Gas & Electric Corp.	BBB+	5	51.6	3.1
Union Light Heat & Power Co.	BBB+	4	47.4	5.8
Vectren Corp.	BBB+	4	61.0	2.6
Western Massachusetts Electric Co.	BBB+	4	68.9	0.4
Wisconsin Energy Corp.	BBB+	5	62.4	2.4
American Electric Power Co. Inc.	BBB	5	66.3	2.0
Appalachian Power Co.	BBB	3	61.4	2.6
Arizona Public Service Co.	BBB	4	56.3	3.4
Central Power & Light Co.	BBB	4	53.0	3.4
Cleco Corp.	BBB	6	61.4	3.2
Cleco Power LLC	BBB	5	49.3	4.1
Cleveland Electric Illuminating Co.	BBB	6	72.3	2.3
Columbus Southern Power Co.	BBB	2	56.8	4.2
Dayton Power & Light Co.	BBB	4	37.5	6.6
DPL Inc.	BBB	6	57.7	4.2
DQE Inc.	BBB	5	61.1	1.7
Duquesne Light Co.	BBB	4	62.1	2.8
Empire District Electric Co.	BBB	5	62.4	1.8
Entergy Arkansas Inc.	BBB	6	58.4	2.8
Entergy Corp.	BBB	6	53.4	2.6
Entergy Louisiana Inc.	BBB	6	56.3	2.7
Entergy Mississippi Inc.	BBB	7	56.7	2.1
Entergy New Orleans Inc.	BBB	7	61.3	1.7
FirstEnergy Corp.	BBB	6	64.8	2.4
Indiana Michigan Power Co.	BBB	4	72.6	1.1
Kentucky Power Co.	BBB	3	59.8	2.2
Ohio Power Co.	BBB	2	58.8	3.2
Public Service Co. of Oklahoma	BBB	3	52.0	3.3
Reliant Energy Inc.	BBB	5	63.3	2.6
Southwestern Electric Power Co.	BBB	3	49.5	3.0
TXU Corp.	BBB	5	70.2	1.9

STANDARD & POOR'S DEBT RATINGS, BUSINESS RISK PROFILE SCORES, DEBT AND INTEREST COVERAGE RATIOS FOR U.S. INVESTMENT GRADE ELECTRIC UTILITIES

	S & P Rating	Business Profile Scores	Debt Ratio (1999-2001)	Average Pre-Tax Interest Coverage (1999-2001)
Entergy Gulf States Inc.	BBB	6	54.0	2.5
Hawaiian Electric Industries Inc.	BBB	6	53.7	2.6
Jersey Central Power & Light Co.	BBB	4	38.1	3.5
Kansas City Power & Light Co.	BBB	6	57.0	2.1
Metropolitan Edison Co.	BBB	5	41.5	3.7
NiSource Inc.	BBB	4	69.0	1.8
Northern Indiana Public Service Co.	BBB	5	54.7	4.9
Northern States Power Co.	BBB	4	56.0	3.1
Ohio Edison Co.	BBB	6	56.3	2.8
Pennsylvania Electric Co.	BBB	5	40.3	4.0
Pennsylvania Power Co.	BBB	6	53.0	3.6
Pinnacle West Capital Corp.	BBB	5	58.0	3.1
PPL Corp.	BBB	5	67.1	3.0
Public Service Co. of Colorado	BBB	4	54.1	2.9
Public Service Electric & Gas Co.	BBB	3	57.4	3.5
Public Service Enterprise Group Inc.	BBB	6	66.0	3.2
Southwestern Public Service Co.	BBB	4	48.2	3.9
Toledo Edison Co.	BBB	6	71.0	2.0
Xcel Energy Inc.	BBB	6	62.9	2.4
Central Vermont Public Service Corp.	BBB-	6	57.1	2.1
El Paso Electric Co.	BBB-	6	64.8	2.1
Green Mountain Power Corp.	BBB-	7	61.8	1.6
Public Service Co. of New Mexico	BBB-	6	55.9	3.2
Puget Sound Energy Inc.	BBB-	4	64.0	2.2
System Energy Resources Inc.	BBB-	7	55.7	2.1
Tampa Electric Co.	BBB-	4	46.5	4.0
TECO Energy Inc.	BBB-	5	61.6	2.6
Texas-New Mexico Power Co.	BBB-	5	55.4	2.6
Average (BBB)	**BBB**	**5**	**57.9**	**2.9**
Average (all U.S. Electrics)	**BBB+**	**5**	**55.8**	**3.1**

Source: Standard & Poor's Credit Stats: Electric Utilities (August 20, 2002); Standard & Poor's Utilities and Perspectives (June 23, 2003).

STANDARD & POOR'S DEBT RATINGS, BUSINESS RISK PROFILE SCORES, DEBT AND INTEREST COVERAGE RATIOS FOR U.S. INVESTMENT GRADE TRANSMISSION AND DISTRIBUTION ELECTRIC UTILITIES

	S & P Rating	Business Profile Scores	Debt Ratio (1999-2001)	Average Pre-Tax Interest Coverage (1999-2001)
Boston Edison Co.	A	3	62.3	2.6
Cambridge Electric Light Co.	A	3	39.4	2.0
Commonwealth Electric Co.	A	3	62.9	1.5
MidAmerican Energy Co.	A	4	46.1	4.3
Narragansett Electric Co.	A	3	41.0	3.5
National Grid USA	A	3	47.8	3.6
Niagara Mohawk Power Co.	A	4	69.0	1.0
NSTAR	A	3	82.3	1.5
Orange and Rockland Utilities Inc.	A	3	58.6	2.6
Baltimore Gas & Electric Co.	A-	3	60.1	2.4
Central Illinois Public Service Co.	A-	3	51.6	3.6
Commonwealth Edison Co.	A-	4	49.1	3.2
Delmarva Power & Light Co	A-	3	59.2	3.4
PPL Electric Utilities Corp.	A-	4	64.7	3.4
Average (A)	**A**	**3**	**56.7**	**2.8**

Source: Standard & Poor's Credit Stats: Electric Utilities (August 20, 2002); Standard & Poor's Utilities and Perspectives (June 23, 2003); RRA-Utility Focus February 5, 2002 "Electric Utility Fuel Mix, Generation, Purchase & Sale of Power" FERC Form 1 (2002) and Business.com

STANDARD & POOR'S DEBT RATINGS, BUSINESS RISK PROFILE SCORES, DEBT AND INTEREST COVERAGE RATIOS FOR U.S. INVESTMENT GRADE GAS PIPELINES

	S & P Rating	Business Profile Scores	Debt Ratio (1999-2001)	Average Pre-Tax Interest Coverage (1999-2001)
Questar Pipeline Co.	A+	3	59.8	3.2
Equitable Resources Inc.	A	5	39.5	4.7
Kern River Gas Transmission	A-	4	69.9	2.3
MDU Resources Group Inc.	A-	6	44.1	4.7
Northern Border Pipeline CO.	A-	3	42.3	3.1
Northern Natural Gas Co.	A-	3	36.2	6.3
Texas Eastern Transmission L.P.	A-	4	30.0	4.6
Average (A)	**A-**	**4**	**46.0**	**4.1**
National Fuel Gas Co.	BBB+	6	60.1	2.6
Florida Gas Transmission Co.	BBB	2	42.1	2.9
Kinder Morgan Inc.	BBB	5	58.3	2.3
Average (BBB)	**BBB**	**4**	**53.5**	**2.6**
Mean	**A-**	**4**	**48.2**	**3.7**
Median	**A-**	**4**	**43.2**	**3.2**

Source: Standard & Poor's Credit Stats: Electric Utilities (August 20, 2002); Standard & Poor's Utilities and Perspectives (June 23, 2003).

CANADIAN AND U.S. POST-WWII HISTORIC EQUITY RISK PREMIUMS

Holding Period	Stock Return	Bond Return	Risk Premium
	Canada (1947-2002)		
1-year	11.8	6.8	5.0
Compound	10.6	6.4	4.2
	United States (1947-2002)		
1-year	13.0	6.3	6.7
Compound	11.7	5.8	5.9

Source: Ibbotson Associates: Stocks, Bonds, Bills and Inflation: 2002 Yearbook; Canadian Institute of Actuaries; Report on Canadian Economic Statistics

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25-YEAR ROLLING AVERAGE MARKET RETURNS FOR CANADA AND THE U.S.

	Canada		U.S.	
	Stock Returns	Long Government Bond Returns	Stock Returns	Long Government Bond Returns
1947-1972	13.2%	2.8%	13.9%	2.1%
1948-1973	13.2%	2.8%	13.2%	2.2%
1949-1974	11.8%	2.8%	11.9%	2.2%
1950-1975	11.6%	2.7%	12.6%	2.3%
1951-1976	10.2%	3.4%	12.3%	3.0%
1952-1977	9.7%	3.8%	11.1%	3.1%
1953-1978	10.8%	3.8%	10.7%	3.0%
1954-1979	12.5%	3.5%	11.4%	2.8%
1955-1980	12.1%	3.2%	10.7%	2.4%
1956-1981	10.7%	3.1%	9.2%	2.5%
1957-1982	10.4%	4.9%	9.8%	4.3%
1958-1983	12.5%	5.1%	11.1%	4.0%
1959-1984	11.2%	5.8%	9.7%	4.8%
1960-1985	12.0%	7.0%	10.5%	6.1%
1961-1986	12.3%	7.4%	11.1%	6.5%
1962-1987	11.3%	7.0%	10.3%	6.4%
1963-1988	12.0%	7.3%	11.3%	6.5%
1964-1989	12.2%	7.8%	11.6%	7.1%
1965-1990	10.6%	7.6%	10.9%	7.2%
1966-1991	10.8%	8.5%	11.6%	8.0%
1967-1992	11.0%	9.0%	12.2%	8.1%
1968-1993	11.6%	10.0%	11.7%	9.2%
1969-1994	10.7%	9.6%	11.3%	8.9%
1970-1995	11.3%	10.7%	13.1%	10.3%
1971-1996	12.6%	10.4%	13.8%	9.8%
1972-1997	12.8%	10.6%	14.6%	9.9%
1973-1998	11.7%	11.1%	14.9%	10.2%
1974-1999	12.9%	10.8%	16.3%	9.9%
1975-2000	14.2%	11.3%	17.0%	10.5%
1976-2001	13.0%	11.4%	15.1%	10.3%
1977-2002	12.1%	11.1%	13.3%	10.3%
Min	**9.7%**	**2.7%**	**9.2%**	**2.1%**
Max	**14.2%**	**11.4%**	**17.0%**	**10.5%**
Average	**11.8%**	**7.0%**	**12.2%**	**6.2%**
Stdev.	**1.0%**	**3.2%**	**1.9%**	**3.1%**
+1 Std	**12.8%**	**10.2%**	**14.1%**	**9.4%**
-1 Std dev.	**10.7%**	**3.8%**	**10.3%**	**3.1%**

Source: Ibbotson Associates: Stocks, Bonds, and Inflation: 2002 Yearbook;
Canadian Institute of Actuaries: Report on Canadian Economic Statistics.

INCREASING AVERAGE MARKET RETURNS FOR CANADA AND THE U.S. (1947+)

	Canada		U.S.	
	Stock Returns	Long Government Bond Returns	Stock Returns	Long Government Bond Returns
1947-1972	13.2%	2.8%	13.9%	2.1%
1947-1973	12.8%	2.8%	12.9%	2.0%
1947-1974	11.4%	2.6%	11.5%	2.1%
1947-1975	11.6%	2.6%	12.4%	2.3%
1947-1976	11.6%	3.2%	12.7%	2.8%
1947-1977	11.6%	3.3%	12.1%	2.7%
1947-1978	12.1%	3.2%	11.9%	2.6%
1947-1979	13.1%	3.0%	12.1%	2.5%
1947-1980	13.6%	3.0%	12.7%	2.3%
1947-1981	12.9%	2.8%	12.2%	2.3%
1947-1982	12.7%	3.9%	12.5%	3.3%
1947-1983	13.4%	4.1%	12.7%	3.2%
1947-1984	12.9%	4.4%	12.6%	3.6%
1947-1985	13.3%	4.9%	13.1%	4.3%
1947-1986	13.1%	5.2%	13.2%	4.8%
1947-1987	13.0%	5.1%	13.0%	4.6%
1947-1988	12.9%	5.2%	13.1%	4.7%
1947-1989	13.1%	5.5%	13.5%	5.0%
1947-1990	12.5%	5.4%	13.2%	5.0%
1947-1991	12.5%	5.9%	13.5%	5.4%
1947-1992	12.2%	6.0%	13.4%	5.4%
1947-1993	12.6%	6.4%	13.3%	5.7%
1947-1994	12.3%	6.0%	13.1%	5.4%
1947-1995	12.4%	6.4%	13.6%	6.0%
1947-1996	12.7%	6.6%	13.8%	5.8%
1947-1997	12.7%	6.8%	14.2%	6.0%
1947-1998	12.5%	7.0%	14.4%	6.1%
1947-1999	12.8%	6.7%	14.6%	5.9%
1947-2000	12.7%	6.8%	14.1%	6.1%
1947-2001	12.3%	6.8%	13.7%	6.1%
1947-2002	11.8%	6.8%	13.0%	6.3%
Min	**11.4%**	**2.6%**	**11.5%**	**2.0%**
Max	**13.6%**	**7.0%**	**14.6%**	**6.3%**
Average	**12.6%**	**4.9%**	**13.1%**	**4.3%**
Stdev.	**0.6%**	**1.6%**	**0.7%**	**1.6%**
+1 Std	**13.2%**	**6.5%**	**13.8%**	**5.8%**
-1 Std dev.	**12.0%**	**3.3%**	**12.4%**	**2.7%**

Source: Ibbotson Associates: Stocks, Bonds, and Inflation: 2002 Yearbook;
Canadian Institute of Actuaries: Report on Canadian Economic Statistics.

INCREASING AVERAGE MARKET RETURNS FOR CANADA AND THE U.S.
(2002+)

	Canada		U.S.	
	Stock Returns	Long Government Bond Returns	Stock Returns	Long Government Bond Returns
1947-2002	11.8%	6.8%	13.0%	6.3%
1948-2002	12.0%	6.9%	13.1%	6.4%
1949-2002	12.0%	7.1%	13.3%	6.5%
1950-2002	11.8%	7.1%	13.2%	6.5%
1951-2002	11.1%	7.2%	12.8%	6.6%
1952-2002	10.9%	7.5%	12.6%	6.8%
1953-2002	11.1%	7.6%	12.5%	6.9%
1954-2002	11.3%	7.6%	12.7%	7.0%
1955-2002	10.7%	7.6%	11.9%	7.0%
1956-2002	10.4%	7.8%	11.5%	7.2%
1957-2002	10.3%	8.0%	11.6%	7.5%
1958-2002	11.0%	8.1%	12.1%	7.5%
1959-2002	10.5%	8.4%	11.4%	7.8%
1960-2002	10.7%	8.7%	11.4%	8.0%
1961-2002	10.9%	8.7%	11.6%	7.9%
1962-2002	10.3%	8.7%	11.3%	8.0%
1963-2002	10.8%	8.8%	11.8%	8.1%
1964-2002	10.6%	8.9%	11.5%	8.2%
1965-2002	10.3%	9.0%	11.3%	8.4%
1966-2002	10.3%	9.2%	11.3%	8.6%
1967-2002	10.8%	9.4%	11.9%	8.7%
1968-2002	10.6%	9.7%	11.6%	9.2%
1969-2002	10.3%	10.1%	11.6%	9.5%
1970-2002	10.6%	10.4%	12.2%	9.9%
1971-2002	11.1%	10.1%	12.4%	9.9%
1972-2002	11.2%	10.0%	12.4%	9.7%
1973-2002	10.6%	10.3%	12.2%	9.9%
1974-2002	11.0%	10.6%	13.1%	10.3%
1975-2002	12.3%	11.0%	14.5%	10.5%
1976-2002	12.1%	11.4%	13.7%	10.5%
1977-2002	12.1%	11.1%	13.3%	10.3%
Min	**10.3%**	**6.8%**	**11.3%**	**6.3%**
Max	**12.3%**	**11.4%**	**14.5%**	**10.5%**
Average	**11.0%**	**8.8%**	**12.3%**	**8.2%**
Stdev.	**0.6%**	**1.4%**	**0.8%**	**1.4%**
+1 Std	**11.6%**	**10.2%**	**13.1%**	**9.6%**
-1 Std dev.	**10.4%**	**7.5%**	**11.5%**	**6.9%**

Source: Ibbotson Associates: Stocks, Bonds, and Inflation: 2002 Yearbook;
Canadian Institute of Actuaries: Report on Canadian Economic Statistics.

EQUITY RISK PREMIUM STUDY FOR
SELECTED U.S. LOCAL NATURAL GAS DISTRIBUTION COMPANIES
(Quarterly Averages of Monthly Data)

	Dividend Yields 1/	I/B/E/S EPS Growth Forecast	DCF Cost	30-Year Treasury Yield	Risk Premium
1993 1Q	5.4	6.5	11.9	7.0	4.9
2Q	5.2	6.4	11.6	6.9	4.7
3Q	4.9	6.5	11.4	6.3	5.1
4Q	5.3	6.0	11.2	6.2	5.0
1994 1Q	5.4	5.4	10.8	6.7	4.1
2Q	5.8	5.6	11.4	7.3	4.0
3Q	6.0	5.6	11.6	7.6	4.0
4Q	6.3	5.2	11.5	7.9	3.6
1995 1Q	6.1	4.9	11.0	7.6	3.4
2Q	5.9	5.1	11.0	6.9	4.1
3Q	5.8	5.0	10.8	6.7	4.1
4Q	5.4	5.1	10.5	6.2	4.3
1996 1Q	5.3	5.2	10.5	6.4	4.1
2Q	5.3	5.2	10.5	7.0	3.6
3Q	5.2	5.3	10.5	7.0	3.5
4Q	4.9	5.4	10.3	6.6	3.7
1997 1Q	5.1	5.2	10.3	6.9	3.4
2Q	5.0	5.2	10.2	6.9	3.3
3Q	4.8	5.3	10.1	6.5	3.6
4Q	4.5	5.5	10.0	6.1	4.0
1998 1Q	4.5	5.9	10.3	5.9	4.4
2Q	4.5	5.9	10.4	5.8	4.6
3Q	4.8	6.0	10.8	5.3	5.5
4Q	4.4	5.8	10.2	5.2	5.0
1999 1Q	5.0	5.8	10.8	5.5	5.3
2Q	4.9	5.6	10.6	5.8	4.8
3Q	4.9	5.6	10.5	6.1	4.4
4Q	5.1	5.5	10.6	6.4	4.2
2000 1Q	5.8	5.4	11.3	6.3	5.0
2Q	5.7	5.3	11.0	6.0	5.0
3Q	5.3	5.7	11.1	5.8	5.3
4Q	4.8	5.7	10.5	5.6	4.9
2001 1Q	4.9	5.7	10.6	5.4	5.2
2Q	4.8	5.6	10.4	5.8	4.6
3Q	5.0	6.1	11.1	5.5	5.6
4Q	4.9	5.8	10.7	5.3	5.3
2002 1Q	4.9	5.6	10.5	5.7	4.8
2Q	4.7	5.6	10.3	5.7	4.6
3Q	5.3	5.7	11.0	5.1	5.9
4Q	5.1	5.6	10.7	5.1	5.6
2003 1Q	5.2	5.7	10.9	4.9	6.0
Averages for 30-year Treasury yields:					
up to 5.5			**10.7**	**5.3**	**5.4**
5.6 - 6.0			**10.6**	**5.9**	**4.7**
6.1 - 6.5			**10.7**	**6.3**	**4.3**
over 6.5			**11.0**	**7.1**	**3.9**
All periods			**10.8**	**6.2**	**4.5**

1/ Dividend Yield is adjusted for half of I/B/E/S growth

Source: Standard & Poor's Research Insight, I/B/E/S International, Inc.,
U.S. Federal Reserve Statistical Release

RETURNS ON AVERAGE COMMON EQUITY FOR SELECTED U.S. GAS DISTRIBUTION UTILITIES

	Returns on Equity										Averages		
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	1993-2002	1993-1995	1996-2002
AGL RESOURCES INC	11.0	11.6	4.9	13.2	12.7	12.6	11.3	11.1	13.8	14.9	11.7	9.2	12.8
ATMOS ENERGY CORP	14.7	11.0	12.3	14.5	9.5	15.8	4.7	9.3	11.5	10.3	11.4	12.6	10.8
NEW JERSEY RESOURCES	11.8	13.4	9.7	13.9	14.5	14.7	15.1	15.5	15.8	15.9	14.0	11.7	15.0
NICOR INC	15.6	15.7	14.5	19.2	17.3	15.4	16.0	6.2	17.3	17.8	15.5	15.3	15.6
NORTHWEST NATURAL GAS CO	13.6	12.2	11.8	13.1	11.3	6.4	10.2	10.8	10.4	8.7	10.9	12.5	10.1
PEOPLES ENERGY CORP	11.8	11.7	9.7	15.6	14.1	10.9	12.3	11.2	12.3	11.1	12.1	11.1	12.5
PIEDMONT NATURAL GAS CO	13.7	12.1	12.3	13.1	13.4	13.7	12.3	12.6	12.0	10.8	12.6	12.7	12.6
WGL HOLDINGS INC	12.1	12.5	12.3	15.0	14.1	11.2	10.4	11.9	11.0	5.0	11.6	12.3	11.2
Median	**12.9**	**12.1**	**12.0**	**14.2**	**13.7**	**13.2**	**11.8**	**11.1**	**12.2**	**10.9**	**11.9**	**12.4**	**12.5**
Average	**13.0**	**12.5**	**10.9**	**14.7**	**13.4**	**12.6**	**11.5**	**11.1**	**13.0**	**11.8**	**12.5**	**12.2**	**12.6**
Average of Annual Medians											**12.4**	**12.3**	**12.4**

Source: Standard & Poor's Research Insight.

CANADIAN AND U.S. UTILITY HISTORIC EQUITY RISK PREMIUMS

TSE GAS/ELECTRIC INDEX
(1956-2002)

Holding Period	Stock Return	Bond Return	Risk Premium
Arithmetic	12.3	7.8	4.5
Compound	11.3	7.3	4.0

S&P / MOODY'S ELECTRIC INDEX
(1947-2002)

Average	Stock Return	Bond Return	Risk Premium
Arithmetic	11.1	6.3	4.8
Compound	9.9	5.8	4.1

S&P / MOODY'S GAS DISTRIBUTION INDEX
(1947-2002)

Average	Stock Return	Bond Return	Risk Premium
Arithmetic	12.1	6.3	5.8
Compound	11.0	5.8	5.2

Note: Moody's Gas and Electric Indices were terminated in July 2002. The 2002 returns for the U.S. gas and electric companies were estimated using simple averages of the prices and dividends for the utilities that had been included in Moody's indices.

Sources: TSE Review, Bank of Canada Review, Standard & Poor's Analysts' Handbook, Ibbotson Associates, Stocks, Bonds, Bills and Inflation, Mergent Corporate News Reports.

EXHIBIT 005-10-3
SCHEDULE 8

INDIVIDUAL COMPANY RISK DATA FOR SELECTED LOCAL NATURAL GAS DISTRIBUTION COMPANIES

	Value Line						S & P			
Company	Safety Rank	Earnings Predictability	Financial Strength	Beta	Forecast Common Equity Ratio 2006-8	Common Equity Ratio [2/] 2002	Business Profile	Debt Rating	Market / Book Ratio 2002	Repriced Equity / Book 2002
AGL RESOURCES INC	2	65	B++	0.75	46.0	40.0	3	A-	189.1	158.2
ATMOS ENERGY CORP	3	50	B+	0.60	47.0	46.1	4	A-	156.3	117.0
NEW JERSEY RESOURCES	2	100	B++	0.65	57.5	49.4	2[1/]	A[1/]	245.0	148.8
NICOR INC	2	95	A	0.90	70.5	65.0	3	AA	203.8	250.5
NORTHWEST NATURAL GAS	2	65	B++	0.60	52.0	50.5	3	A	142.4	158.2
PEOPLES ENERGY CORP	1	75	A	0.75	65.0	59.3	4	A-	148.2	271.4
PIEDMONT NATURAL GAS	2	85	B++	0.70	63.0	56.1	3	A	200.7	140.1
WGL HOLDINGS INC	1	65	A	0.65	53.0	52.4	3	AA-	151.5	162.3
MEAN	**2**	**75**	**B++**	**0.70**	**56.8**	**52.4**	**3**	**A**	**179.6**	**175.8**
MEDIAN	**2**	**70**	**B++**	**0.68**	**55.3**	**51.5**	**3**	**A**	**172.7**	**158.2**

Source: Value Line (March 21, 2003);
Standard & Poor's Utilities and Perspectives (June 23, 2003).

1/ For subsidiary, New Jersey Natural Gas
2/ All figures are 2002 actuals, except AGL Resources, Nicor, and Northwest Natural, which are estimates.

DCF COSTS OF EQUITY FOR SELECTED LOCAL NATURAL GAS DISTRIBUTION COMPANIES (BASED ON ANALYSTS' EARNINGS GROWTH FORECASTS)

Company	Mar. - May. 2003 Dividend Yield	Long-Term EPS Forecasts I/B/E/S (May 2003)	Long-Term EPS Forecasts Zacks (June 2003)	Average of Forecasts	DCF Cost of Equity
AGL RESOURCES INC	4.6	6.0	5.6	5.8	10.7
ATMOS ENERGY CORP	5.4	6.0	6.5	6.3	12.0
NEW JERSEY RESOURCES	3.7	6.5	5.8	6.2	10.1
NICOR INC	6.3	5.5	4.9	5.2	11.8
NORTHWEST NATURAL GAS	4.9	5.0	4.5	4.8	9.9
PEOPLES ENERGY	5.6	5.0	4.2	4.6	10.4
PIEDMONT NATURAL GAS	4.6	5.0	5.0	5.0	9.8
WGL HOLDINGS INC	4.8	4.0	3.8	3.9	8.9
Mean	**5.0**	**5.4**	**5.0**	**5.2**	**10.4**
Median	**4.8**	**5.3**	**5.0**	**5.1**	**10.3**

1/ Adjusted dividend yield plus growth;
[DY*(1+(Growth))] + Growth

Source: Standard & Poor's Research Insight, May 2003, Yahoo.com, I/B/E/S and Zacks.com

**DCF COSTS OF EQUITY FOR SELECTED
LOCAL NATURAL GAS DISTRIBUTION COMPANIES
(BASED ON SUSTAINABLE GROWTH RATES)**

Company	Mar. - May. 2003 Dividend Yield	Sustainable Growth (March 2003)	DCF Cost of Equity	Value Line ROE Forecast (2006-2008)	Value Line Dividend Payout Forecast (2006-2008)
AGL RESOURCES INC	4.6	5.8	10.7	12.0	51.4
ATMOS ENERGY CORP	5.4	6.0	11.7	15.0	60.0
NEW JERSEY RESOURCES	3.7	7.2	11.2	13.0	44.4
NICOR INC	6.3	6.8	13.5	18.0	62.2
NORTHWEST NATURAL GAS	4.9	4.9	10.0	11.0	55.4
PEOPLES ENERGY	5.6	4.9	10.8	12.5	60.5
PIEDMONT NATURAL GAS	4.6	5.8	10.6	14.5	60.3
WGL HOLDINGS INC	4.8	5.4	10.4	12.0	55.4
Mean	**5.0**	**5.8**	**11.1**	**13.5**	**56.2**
Median	**4.8**	**5.8**	**10.7**	**12.8**	**57.7**

1/ Adjusted dividend yield plus growth;
[DY*(1+(Growth))] + Growth

Source: Standard & Poor's Research Insight, May 2003, Yahoo.com and Value Line, March 21, 2003.

RETURNS ON AVERAGE COMMON STOCK EQUITY FOR 15 LOW RISK CANADIAN INDUSTRIALS

	Returns on Equity											Averages		
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	1992-2002	1992-1995	1996-2002
CANADIAN TIRE CORP	6.4	6.9	0.5	10.2	10.4	11.4	13.0	11.2	10.6	11.5	11.9	9.4	6.0	11.4
CARA OPERATIONS LTD	12.6	11.7	9.5	12.2	10.9	13.8	7.4	10.5	34.6	10.3	12.8	13.3	11.5	14.3
EMPIRE CO LTD /1	6.8	12.3	9.4	3.9	11.9	17.9	21.7	13.3	69.1	16.4	11.6	17.7	8.1	23.1
FINNING INTERNATIONAL INC	0.7	6.5	14.9	16.3	16.0	16.2	0.5	8.7	10.5	14.1	15.5	10.9	9.6	11.6
JEAN COUTU GROUP /1	18.5	10.1	17.0	15.2	16.2	15.3	15.5	15.7	14.9	15.7	16.0	15.5	15.2	15.6
LEONS FURNITURE LTD	11.4	16.4	15.3	14.0	13.4	15.1	16.7	21.1	19.3	17.3	17.1	16.1	14.3	17.1
LOBLAW COS LTD	8.7	9.6	12.4	13.3	14.2	15.3	12.8	13.7	15.7	16.8	18.9	13.8	11.0	15.3
MAGNA INTERNATIONAL	22.8	19.6	21.7	21.8	15.8	21.6	12.3	12.0	15.9	14.7	11.8	17.3	21.5	14.9
MAPLE LEAF FOODS INC	7.9	7.3	7.5	-6.7	14.8	14.7	-6.3	17.9	8.0	10.3	12.2	8.0	4.0	10.2
MOLSON INC	15.7	10.1	6.5	-26.8	3.7	11.8	16.3	-4.1	14.7	18.0	28.3	8.6	1.4	12.7
ROTHMANS INC	34.4	40.1	45.2	39.7	40.2	37.2	38.4	41.7	38.6	40.1	45.2	40.1	39.8	40.2
SHAW COMMUNICATN INC	11.5	11.5	10.2	6.2	11.8	2.9	-0.1	1.9	5.5	-8.4	-14.1	3.5	9.9	-0.1
THOMSON CORP	6.0	10.0	14.6	22.4	14.2	12.9	34.7	8.0	17.9	10.2	7.3	14.4	13.2	15.0
TORSTAR CORP	8.4	-1.7	7.9	6.7	11.3	38.4	-0.7	12.8	5.4	-14.6	21.3	8.6	5.3	10.5
WESTON (GEORGE) LTD	3.2	4.5	8.7	12.9	15.1	14.5	37.3	14.0	17.4	18.5	18.3	14.9	7.3	19.3
Median	8.7	10.1	10.2	12.9	14.2	15.1	13.0	12.8	15.7	14.7	15.5	13.8	9.9	14.9
Average	11.7	11.7	13.4	10.8	14.7	17.3	14.6	13.2	19.9	12.7	15.6	14.1	11.9	15.4
Average of Annual Medians												13.0	10.5	14.4

Source: Standard & Poor's Research Insight, Toronto Stock Exchange Review, January & March 2003

/1 2002 ROE estimated.

RISK MEASURES FOR 15 LOW RISK CANADIAN INDUSTRIALS

Company Name	Debt Ratings S&P	Debt Ratings DBRS	CBS Stock Rating	Beta 1998-2002 Raw	Beta 1998-2002 Adjusted	Beta 1997-2001 Raw	Beta 1997-2001 Adjusted	Equity Ratio Permanent Capital 2002
CANADIAN TIRE CORP	BBB+	A (low)	Very Conservative	0.40	0.60	0.39	0.59	61.6%
CARA OPERATIONS LTD	BBB-	BBB	Average	0.38	0.58	0.36	0.57	65.4%
EMPIRE CO LTD	BBB-	BBB	Very Conservative	0.36	0.57	0.48	0.65	56.8% 1/
FINNING INTERNATIONAL INC	BBB+	BBB (high)	Conservative	0.17	0.45	0.18	0.45	64.4%
JEAN COUTU GROUP 1/			Very Conservative	0.20	0.46	0.20	0.46	74.5%
LEONS FURNITURE LTD			Average	0.30	0.53	0.29	0.52	100.0%
LOBLAW COS LTD	A	A (high)	Very Conservative	-0.01	0.32	0.02	0.34	54.7%
MAGNA INTERNATIONAL	A-	A	Conservative	0.36	0.57	0.34	0.56	91.6%
MAPLE LEAF FOODS INC			Very Conservative	0.63	0.75	0.68	0.79	50.6%
MOLSON INC	BBB+	A(low)	Very Conservative	0.17	0.45	0.07	0.37	46.7%
ROTHMANS INC			Average	-0.26	0.16	-0.13	0.24	46.5%
SHAW COMMUNICATN INC	BB+	BB(high)	Very Conservative	0.82	0.88	0.67	0.78	37.7%
THOMSON CORP	A-	A (low)	Very Conservative	0.60	0.73	0.58	0.72	70.9%
TORSTAR CORP		BBB (high)	Very Conservative	0.44	0.62	0.47	0.65	58.9%
WESTON (GEORGE) LTD	A-	A (low)	Very Conservative	0.05	0.36	0.15	0.43	41.9%
MEDIAN	**BBB+**	A (low)	**Very Conservative**	**0.36**	**0.57**	**0.34**	**0.56**	**58.9%**

1/ 2001 data

Source: Standard & Poor's Ratings Direct; DBRS; Canadian Business Service; Standard & Poor's Research Insight.

APPENDIX A
QUALIFICATIONS OF
KATHLEEN C. McSHANE

Kathleen McShane is a Senior Vice President and senior consultant with Foster Associates, Inc., where she has been employed since 1981. She holds an M.B.A. degree in Finance from the University of Florida, and M.A. and B.A. degrees from the University of Rhode Island. She is also a Chartered Financial Analyst.

Ms. McShane worked for the University of Florida and its Public Utility Research Center, functioning as a research and teaching assistant, before joining Foster Associates. She taught both undergraduate and graduate classes in financial management and assisted in the preparation of a financial management textbook.

At Foster Associates, Ms. McShane has worked in the areas of financial analysis, energy economics and cost allocation. Ms. McShane has presented testimony in more than 100 proceedings on rate of return and capital structure before federal, state, provincial and territorial regulatory boards, on behalf of U.S. and Canadian telephone companies, gas pipelines and distributors, and electric utilities. These testimonies include the assessment of the impact of business risk factors (e.g., competition, rate design, contractual arrangements) on capital structure and equity return requirements. Ms. McShane has also provided consulting services for numerous U.S. and Canadian companies on financial and regulatory issues, including financing, dividend policy, corporate structure, cost of capital, automatic adjustments for return on equity, and form of regulation (including performance-based regulation).

Ms. McShane was principal author of a study on the applicability of alternative incentive regulation proposals to Canadian gas pipelines. She was instrumental in the design and preparation of a study of the profitability of 25 major U.S. gas pipelines, in which she developed estimates of rate base, capital structure, profit margins, unit costs of providing services, and various measures of return on investment. In a study prepared for the Canadian Ministry of Energy, Ms. McShane analyzed Federal regulation of U.S. pipelines, including trends in rate design and rate structures. Ms. McShane has also co-managed market demand studies, focusing

on demand for Canadian gas in U.S. markets. Other studies performed by Ms. McShane include a comparison of municipal and privately owned gas utilities, an analysis of the appropriate capitalization and financing for a new gas pipeline, risk/return analyses of proposed water and gas distribution companies and an independent power project, pros and cons of performance-based regulation, and a study on pricing of a competitive product for the U.S. Postal Service. She has also conducted seminars on cost of capital for regulated utilities, with focus on the Canadian regulatory arena.

Publications and Papers

- "The Effects of Unbundling on a Utility's Risk Profile and Rate of Return", (co-authored with Owen Edmondson, Vice President of ATCO Electric), presented at the Unbundling Rates Conference, New Orleans, Louisiana sponsored by Infocast, January 2000.
- Atlanta Gas Light's Unbundling Proposal;: More Unbundling Required?" presented at the 24th Annual Rate Symposium, Kansas City, Missouri, sponsored by several Commissions and Universities, April 1998.
- "Incentive Regulation" An Alternative to Assessing LDC Performance", (co-authored with Dr. William G. Foster), presented at the Natural Gas Conference, Chicago, Illinois sponsored by the Center for Regulatory Studies, May 1993.
- "Alternative Regulatory Incentive Mechanisms", (co-authored with Stephen F. Sherwin), prepared for the National Energy Board, Incentive Regulation Workshop, October 1992.
- "Market-Oriented Sales Rates and Transportation Services of U.S. Natural Gas Distribution Companies", (co-authored with Dr. William G. Foster), published by the IAEE in *Papers and Proceedings of the Eighth Annual North American Conference*, May 1987.
- "Canadian Gas Exports: Impact of Competitive Pricing on Demand", (co-authored with Dr. William G. Foster), presented to A.G.A.'s Gas Price Elasticity Seminar, February 1986.
- "Marketing Canadian Natural Gas in the U.S.", (co-authored with Dr. William G. Foster), published by the IAEE in *Proceedings: Fifth Annual North American Meeting*, 1983.

Expert Testimony/Opinions

on

Rate of Return & Capital Structure

Alberta Natural Gas	1994
Alberta Power/ATCO Electric	1989, 1991, 1993, 1995, 1998, 1999, 2000, 2003
AltaGas Utilities	2000
Ameren (Central Illinois Public Service & Union Electric)	2000 (3 cases), 2002 (3 cases)2003
ATCO Gas	2000, 2003
ATCO Pipelines	2000, 2003
BC Gas	1992, 1994
Bell Canada	1987, 1993
Benchmark Utility Cost of Equity (British Columbia)	1999
Canadian Western Natural Gas	1989, 1998, 1999
Centra Gas B.C.	1992, 1995, 1996, 2002
Centra Gas Ontario	1990, 1991, 1993, 1994, 1996
Dow Pool A Joint Venture	1992
Edmonton Water/EPCOR Water Services	1994, 2000
Enbridge Gas Distribution	1988, 1989, 1991-1997, 2001, 2002
Enbridge Gas New Brunswick	2000
Gas Company of Hawaii	2000
Gaz Metropolitain	1988
Gazifère	1993, 1994, 1995, 1996, 1997, 1998
Heritage Gas	2002
HydroOne/Ontario Hydro Services Corp.	1999, 2000
Laclede Gas Company	1998, 1999, 2001, 2002
Maritimes NRG (Nova Scotia) and (New Brunswick)	1999
Multi-Pipeline Cost of Capital Hearing (National Energy Board)	1994
Natural Resource Gas	1994, 1997

Newfoundland & Labrador Hydro	2001, 2003
Newfoundland Power	1998, 2002
Newfoundland Telephone	1992
Northwestel, Inc.	2000
Northwestern Utilities	1987, 1990
Northwest Territories Power Corp.	1990, 1992, 1993, 1995, 2001
Nova Scotia Power Inc.	2001, 2002
Ozark Gas Transmission	2000
Pacific Northern Gas	1990, 1991, 1994, 1997, 1999, 2001
Platte Pipeline Co.	2002
St. Lawrence Gas	1997, 2002
Southern Union Gas	1990, 1991, 1993
Stentor	1997
Tecumseh Gas Storage	1989, 1990
Telus Québec	2001
TransCanada PipeLines	1988, 1989, 1991 (2 cases), 1992, 1993
TransGas and SaskEnergy LDC	1995
Trans Québec & Maritimes Pipeline	1987
Union Gas	1988, 1989, 1990, 1992, 1994, 1996, 1998, 2001
Westcoast Energy	1989, 1990, 1992 (2 cases), 1993
West Kootenay Power/Utilicorp United Networks (B.C.)	1995, 1999, 2001
Yukon Electric Co. Ltd./Yukon Energy	1991, 1993

Expert Testimony/Opinions

on

Other Issues

Client	Issue	Date
Gaz Metro/ Province of Québec	Cost Allocation/ Incremental vs. Rolled-In Tolling	1984
Canadian Western Natural Gas	Cash Working Capital/ Compounding Effect	1989
Maritime Electric	Form of Regulation	1995
Enbridge Consumers Gas	Principles of Cost Allocation	1998
Enbridge Consumers Gas	Unbundling/Regulatory Compact	1998
Gazifère Inc.	Cash Working Capital	2000
Maritime Electric	Subsidies	2000
ATCO Electric	Carrying Costs on Deferral Account	2001
Newfoundland & Labrador Hydro	Rate Base, Cash Working Capital	2001