

1 since Maritimes has long-term debt that carries its own bond rating and is not
2 guaranteed by Maritimes' parents, it is appropriate to use Maritimes' own capital
3 structure and cost of debt for this proceeding.

4 **Summary**

5 **Q.4 Please summarize your verification of the cost of common equity for**
6 **Maritimes.**

7 A. Mr. Richard J. Kruse explains in his testimony the Company's proposal to use a
8 14.25% cost of equity. My overall approach to verification was to determine the
9 required return on common equity for a set of publicly traded proxy companies.
10 It is impossible to establish directly the cost of equity for Maritimes because
11 Maritimes has no equity securities that are publicly traded. Maritimes is owned
12 by subsidiaries of Duke Energy Corporation, ExxonMobil Corporation, and
13 Emera, Inc.

14 In determining the cost of common equity for the proxy companies, I
15 relied on the Discounted Cash Flow ("DCF") method.

16 **Q.5 Please describe your use of the DCF method.**

17 A. I applied the DCF method to five publicly traded proxy companies. They are
18 Enterprise Products Partners, L.P. ("Enterprise"), Gulfterra Energy Partners, L.P.
19 ("Gulfterra," formerly El Paso Energy Partners), Kinder Morgan Energy Partners,
20 L.P. ("KMEP"), Kinder Morgan Inc. ("KMI"), and Northern Border Partners, L.P.
21 ("Northern Border"). I shall explain my choice of the five later in this testimony.

22 **Q.6 Using your set of proxy companies, how did you proceed?**

23 A. I determined the dividend yields for the proxy companies, as the DCF model
24 requires. Then I turned to forward-looking estimates of growth. I made use of

1 analysts' earnings growth projections reported by I/B/E/S International, Inc.
2 ("IBES"). I believe that the combination of dividend yields and IBES-reported
3 earnings growth forecasts is the most reliable measure of the cost of common
4 equity for use in the DCF model. However, the Commission has decided in
5 recent years to make use of a combination of forecasts of earnings growth from
6 IBES and forecasts of Gross Domestic Product ("GDP") growth from three (now
7 two) different sources, in combination with dividend yields. The most recent
8 policy is set out in Opinion No. 414-A, Order on Rehearing, *Transcontinental*
9 *Gas Pipe Line Corporation*, 84 FERC ¶ 61,084 (1998) ("Opinion No. 414-A"). I
10 therefore applied that method.

11 **Q.7 What were your conclusions from application of the Commission's DCF**
12 **method to the proxy companies?**

13 A. Making use of the set of five gas pipeline proxy companies, the IBES-reported
14 earnings growth forecasts for each, the GDP growth forecasts of the Energy
15 Information Administration ("EIA") and Global Insight (formerly DRI/WEFA),
16 and the Commission's DCF methodology, I found the range of reasonableness to
17 be 12.29% to 15.52%, with a mean of 14.16% and a median of 14.31%.

18 **Q.8 The Commission has in the past used El Paso Corporation ("El Paso") and**
19 **The Williams Companies ("Williams") as proxy companies in gas pipeline**
20 **rate proceedings. Why did you not include those two companies?**

21 A. I believe the inclusion of El Paso and Williams to be inappropriate at the present
22 time, for reasons that I shall discuss later in my testimony. Briefly, both
23 companies have encountered serious difficulties, and their stock prices have
24 plunged, as have their dividend distributions. They are not at present useful proxy

1 companies or good representatives of the gas pipeline industry. Williams has in
2 fact been divesting gas pipeline assets.

3 **Q.9 How did you reach your final conclusion with respect to the cost of equity for**
4 **gas pipelines?**

5 A. I believe a range from the mean 14.16% to the median 14.31% from Exhibit
6 No. __ (JPW-3), is a good measure of the reasonable cost of equity to gas
7 pipelines.

8 **DCF Method**

9 **Q.10 Please explain the DCF method.**

10 A. The origin of the method can be found in John Burr Williams, *The Theory of*
11 *Investment Value* (1938). Williams said the value of a share of stock is the
12 discounted present worth of all the dividends to be received on that share. *Id.* at
13 pages 55-75. The equation he set out is:

$$14 \quad \text{Share Value} = \text{Div}_1/(1+i) + \text{Div}_2/(1+i)^2 + \text{Div}_3/(1+i)^3 + \dots$$

15 where Div_1 is the dividend to be received next year, Div_2 is the dividend to be
16 received in the following year, and so on until the dividends cease. *Id.* at 55-56.
17 (Some of the proxy companies I use are master limited partnerships (“MLPs”),
18 and strictly speaking, corporations pay “dividends” to shareholders, while
19 partnerships make “distributions” to unit holders. The DCF model makes no
20 distinction between dividends and distributions.) The denominator in each term
21 in the right hand side of the equation is a discount factor, and i is (in Williams’
22 words) the “interest rate sought by the investor.” *Id.* at 56. He went on to point
23 out that if dividends are expected to grow at a constant rate g , then $\text{Div}_2 =$
24 $\text{Div}_1(1+g)$ and so on, and $\text{Div}_1 = \text{Div}_0(1+g)$, where Div_0 is the dividend in the year

1 just past. *Id.* at 87-88. Further, if we assume that the stream of dividends is
2 infinite then the equation above becomes:

$$\text{Share Value} = \text{Div}_0(1+g)/(i-g)$$

4 **Q.11 Is it the Williams equation you used in your determination of the cost of**
5 **common equity for Maritimes?**

6 A. I used the equation in a different form. Williams was concerned with determining
7 the value of a share of stock. His starting point was the investor's desired rate of
8 return.

9 Professors M. J. Gordon and E. Shapiro turned the Williams equation
10 around to the form generally recognized as the DCF equation for the cost of
11 common equity. In an article published in 1956, they pointed out that if we *start*
12 with a figure for the value in the Williams equation we can *calculate* the
13 investor's desired rate of return. See M.J. Gordon & E. Shapiro, *Capital*
14 *Equipment Analysis: The Required Rate of Profit*, 3 Management Science 102
15 (1956). If the *market price* is used for value, then the equation will give us the
16 rate of return required by the *market*.

17 The Gordon and Shapiro version of Williams' constant growth equation is:

$$\text{Share Price } P_0 = \text{Div}_0/(k-g)$$

$$\text{so that } k = D_0/P_0 + g$$

20 where k is the rate of return required by the market (not necessarily by any
21 particular investor), D_0 is the dividend in the year just ended and P_0 is the price at
22 the point in time when k is determined. See *id.* at page 106.

23 **Q.12 Did you use the equation above in your determination of the cost of common**
24 **equity for Maritimes?**

25 A. Not quite. There is a small difference between the Gordon and Shapiro equation:

1
$$k = D_0/P_0 + g$$

2 and the Williams equation, which can be rewritten as:

3
$$k = D_1/P_0 + g$$

4
$$= D_0(1+g)/P_0 + g$$

5 The difference is due to Williams' assumption that dividends are paid once a year
6 at the year-end, while Gordon and Shapiro assumed that they are paid
7 continuously. Neither assumption is quite correct, and the FERC has expressed a
8 preference for a third formulation:

9
$$k = (1+.5g)y + g$$

10 where k = market required rate of return,

11 y = current dividend yield (current annual dividend divided by current
12 market price), that is D_0/P_0 ,

13 g = dividend growth rate,

14 $(1 + .5g)$ = dividend adjustment factor for quarterly dividend payments.

15 I have used the FERC formula above, and applied it to the proxy companies.

16 **Q.13 In Enbridge Pipelines (KPC), 100 FERC ¶ 61,260 (2002), the Commission**
17 **appears to have stated that the adjustment factor (1+.5g) for quarterly**
18 **dividend payments should not be made (100 FERC ¶ 61,260, at 61,967). Is**
19 **your adjustment then incorrect?**

20 A. I believe there is some confusion in the *Enbridge* decision. The Staff of the
21 Commission dealt with the adjustment in a different way in that proceeding, as it
22 generally does, a way which leads to exactly the same result as the adjustment I
23 have described, and seems to have been acceptable to the Commission.

24 **Q.14 Please describe the Staff method of adjusting the dividend yield.**

25 A. In Opinion No. 414-A, the Commission relied on Staff testimony that averaged
26 the “continuous” dividend yield with the “discrete” dividend yield. The

1 continuous yield is the ratio D_0/P_0 , from the Gordon and Shapiro formula above.
2 The discrete yield is calculated as $(D_0/P_0) \times (1+g)$, from the Williams equation
3 above. Averaging the two leads to the same result as $(D_0/P_0) \times (1+.5g)$.

4 In the *Enbridge* case, Staff witness Mr. Rodney C. Manganello, in his
5 Prepared Direct Testimony, actually set out the formula using the adjustment
6 factor $(1+.5g)$ (on pages 13-14 of his Exhibit No. S-18) but used the continuous
7 and discrete yields to determine his cost of equity for each proxy company (on
8 page 2 of his Exhibit No. S-20).

9 To make the calculation quite clear, I shall use both the adjustment I have
10 described and the Staff adjustment in my exhibits, to show that they are
11 equivalent.

12 **The Use of Proxy Companies**

13 **Q.15 Please explain the use of proxy companies for the application of the DCF**
14 **model.**

15 A. The “market based” DCF model can only be applied to companies for which the
16 common stock is publicly traded. Hence, I have relied on gas pipeline proxies.
17 Almost all of the natural gas pipeline companies that are regulated by the FERC
18 are, to my knowledge, not themselves publicly traded. They are subsidiaries of
19 companies that are publicly traded. It has been the practice of the FERC to apply
20 the DCF model not to regulated natural gas pipelines directly, but to a set of proxy
21 companies that are publicly traded and are representative of the gas pipeline
22 industry.

1 **Q.16 How did you choose your particular set of gas pipeline proxy companies?**

2 A. I began with the Commission’s statement of policy in *EPGT Texas Gas Pipeline,*
3 *L.P.*, 99 FERC ¶ 61,295 (2002). In that decision, the Commission said:
4 “Commission policy in natural gas cases has been to use a proxy group consisting
5 solely of companies operating natural gas pipelines. The companies should be
6 publicly traded, engaged largely in natural gas transmission and own natural gas
7 pipelines regulated by the Commission.” 99 FERC ¶ 61,295, at p. 62,250.

8 In testimony a few years ago, I made use of the publicly-traded companies
9 that the Commission also used in decisions involving gas pipelines, including
10 Opinion No. 414-A. 84 FERC at 61,427-7. The six proxy companies used in that
11 opinion were Coastal Corporation (“Coastal”), El Paso Energy (now El Paso
12 Corporation, “El Paso”) Enron Corporation (“Enron”), Panhandle Energy
13 (“Panhandle”), Sonat Inc. (“Sonat”), and The Williams Companies, Inc.
14 (“Williams”). Since that time, Coastal, Panhandle and Sonat have ceased to be
15 publicly-traded companies. Enron is bankrupt, and the only remaining companies
16 are El Paso and Williams, both of which have encountered serious problems that
17 make them inappropriate as proxy companies.

18 **Q.17 Please explain more fully why El Paso and Williams are no longer**
19 **appropriate choices as proxy companies.**

20 A. The stock price of El Paso has dropped from a high of \$47 per share in May 2002
21 to about \$6 or \$7 currently, largely, I believe, because of problems with its trading
22 activities and lack of liquidity. Value Line, in its December 2003 report stated:
23 “Only those investors with a penchant for speculation should consider these risky
24 shares.” In its March 2004 report, Value Line stated: “[W]ith low scores for

1 financial strength, price stability, and earnings predictability, the shares are
2 simply too risky for most accounts.” A DCF analysis applied to El Paso is not a
3 measure of the current cost of equity to a gas pipeline.

4 Similarly, the stock price of Williams dropped precipitously from about
5 \$24 per share to about \$1 and has recovered to about \$11 or \$12, again in part
6 because of trading activities and liquidity problems. In addition, Williams
7 reduced its annual dividend from \$0.80 per share to \$0.04. In effect, Williams
8 came as close as possible to ceasing dividends without quite doing so. One cent
9 per share per quarter is, I believe, close to the minimum dividend a company
10 could pay and still claim not to have suspended its dividends altogether. This
11 makes Williams almost a non-dividend-paying company, and the DCF
12 methodology was never intended for application to a company that does not pay
13 dividends. Value Line, in its March 2004 report, said of Williams: “The equity is
14 most suitable for venturesome accounts, given uncertainty surrounding the
15 company’s transformation.”

16 Neither company is representative of the gas pipeline industry at the
17 present time, and neither should be used at the present time in a DCF analysis to
18 determine the cost of equity for gas pipelines.

19 **Q.18 Has the Commission excluded El Paso or Williams from a proxy set in a gas**
20 **pipeline case?**

21 A. I do not believe the Commission has yet been asked to do so. However, recently
22 Staff witness Mr. Franklin D. Knight excluded Williams from his proxy set in his
23 direct testimony filed on May 22, 2003 in a Trailblazer case. And in that case, in
24 his Initial Decision Requiring Revised Rates, *Trailblazer Pipeline Company*, 106

1 FERC ¶ 63,005 (January 21, 2004), Administrative Law Judge (“ALJ”) Bruce L.
2 Birchman agreed that neither company was appropriate. Staff witness Mr.
3 Manganello excluded both companies from his proxy set in his direct and
4 answering testimony in *High Island Offshore System*, Docket No. RP03-221-000
5 filed on August 15, 2003, for essentially the same reasons given by me in my
6 testimony here.

7 **Q.19 Please continue with your description of your proxy companies.**

8 A. I have replaced the now unusable group with Enterprise, Gulfterra , KMEP, KMI,
9 and Northern Border.

10 All five companies have been traded on the New York Stock Exchange for
11 several years. Gulfterra is a publicly traded partnership with its units listed on the
12 Exchange. It has both gas and oil operations, with the gas operations
13 predominant. Enterprise owns participating interests in several gas pipelines.
14 KMEP has been known primarily as an oil pipeline company for many years, but
15 has diversified substantially into gas pipelines. KMI, which until October 1999
16 was known as KN Energy, is a major natural gas pipeline company. Northern
17 Border is a publicly traded partnership with its units listed on the Exchange. It is
18 mainly engaged in the operation of several FERC-regulated gas pipeline systems,
19 including interests in Northern Border Pipeline, Midwestern Gas Transmission
20 Co., and Viking Gas Transmission Co.

21 **Q.20 Have you prepared an exhibit showing the contributions of the various**
22 **segments of each of your proxy companies to the company’s income?**

23 A. Yes. In Exhibit No. __ (JPW-4), I show the contributions of the various segments
24 of each gas pipeline proxy company to a measure of the company income. The

1 income measure varies from company to company and is the one used by the
2 company in its segment analysis.

3 **Q.21 What conclusions do you draw from Exhibit No. __ (JPW-4)?**

4 A. It is clear from the exhibit that gas pipelines and storage are the major
5 contributors to income for Gulfterra, KMI, and Northern Border.

6 KMEP has for some years been used in rate cases as an oil pipeline proxy
7 company, but the company has also been acquiring major gas pipelines, including
8 Trailblazer. I conclude that KMEP is an appropriate proxy in both gas and oil
9 pipeline rate cases.

10 Enterprise is heavily engaged in both gas and oil pipelines. It is difficult
11 to determine the relative contributions of each from data in the company's annual
12 reports. Enterprise owns 100% of Cypress Gas Pipeline, L.L.C. and Acadian Gas
13 Pipeline, 50% of the Stingray Pipeline Company, L.L.C., and smaller percentages
14 of five other gas pipelines.

15 **Q.22 Do you have a listing of the gas transmission companies owned by your proxy**
16 **companies?**

17 A. Yes, the list is shown in Exhibit No. __ (JPW-5).

18 **Q.23 Please explain your DCF analysis in Exhibit No. __ (JPW-3).**

19 A. The distribution yields are calculated using the high and low prices for the months
20 November 2003 through April 2004. The yields are annual rates. The IBES-
21 reported earnings growth forecasts are from the April 2004 IBES reports. The
22 GDP growth figure is based on the most recent data I have.

1 **Q.24 Is it true that four of your proxy companies — Enterprise, Gulfterra, KMEP**
2 **and Northern Border — are publicly-traded Master Limited Partnerships**
3 **(“MLPs”)?**

4 A. Yes.

5 **Q.25 Is there any reason for the Commission to reject the inclusion of limited**
6 **partnerships in your set of proxy companies?**

7 A. I believe not. The Commission has for some years relied exclusively on MLPs as
8 proxy companies in oil pipeline cases. I note that Maritimes is a limited liability
9 company, not a corporation, and is taxed as a limited partnership.

10 **Q.26 Has the Commission relied on limited partnerships as proxy companies in**
11 **gas pipeline cases?**

12 A. To the best of my knowledge, the Commission has never been asked to rely on
13 limited partnerships in gas pipeline cases, and has never, therefore, either rejected
14 or accepted such a proposal. However, ALJ Birchman accepted my set of limited
15 partnership proxies in *Trailblazer Pipeline Company*, Initial Decision Requiring
16 Revised Rates, 106 FERC ¶ 63,005 (January 21, 2004).

17 **Q.27 Has the Commission ever accepted or rejected the set of proxy companies**
18 **you provide in this testimony?**

19 A. To the best of my knowledge the Commission has not been presented with this set
20 of proxy companies and has therefore had no opportunity either to accept or to
21 reject them. However, in *Trailblazer*, cited above, ALJ Birchman accepted this
22 set of proxies, with one exception. He considered KMI to be superfluous, because
23 it holds a significant interest in KMEP, another proxy company.

24 **Q.28 Why do you include KMI if Judge Birchman excluded it?**

25 A. As shown in my Exhibit No. __ (JPW-5), KMI owns four gas pipelines, two of
26 them major pipelines, in addition to its participation in KMEP. Both KMI and

1 KMEP are substantial publicly traded companies, listed on the New York Stock
2 Exchange and available for investment. Investors have no reason to believe that
3 they are interchangeable. Their dividend yields differ significantly as do their
4 forecasted growth rates. KMI has a relatively low yield and high growth
5 expectation, while KMEP has a higher yield and a lower growth expectation,
6 presenting an obvious choice to investors between growth and dividend yield.

7 **Consideration of Petal Gas Storage Decision**

8 **Q.29 Does the Commission’s recent decision, in *Petal Gas Storage, L.L.C., Order***
9 **on Rehearing, 106 FERC ¶ 61,325 (March 30, 2004), (“Petal Gas Order on**
10 **Rehearing”), authorize the inclusion of Equitable Resources, National Fuel**
11 **Gas and Questar as proxy companies in gas pipeline cases?**

12 A. I believe not.

13 **Q.30 Please discuss the Petal Gas Order on Rehearing, and its rationale.**

14 A. The decision resulted from requests for rehearing of the Commission’s decision in
15 *Petal Gas Storage, L.L.C., Order Issuing Certificate, 97 FERC ¶ 61,097 (2001)*
16 (“Petal Gas Certificate Order”). In the Petal Gas Certificate Order, the
17 Commission issued a certificate of public convenience and necessity for
18 construction and operation of pipeline facilities, and imposed an ROE of 12.60%,
19 based on a DCF analysis making use of eleven proxy companies. Petal had
20 submitted no testimony in support of its claimed 15% cost of equity, and the
21 Commission did not explain the source of its set of eleven proxies. They were
22 CMS Energy, Duke Energy, El Paso, Equitable Resources, Inc. (“Equitable”),
23 KMI, MDU Resources, National Fuel Gas Company (“National Fuel”), NiSource,
24 Questar Corporation (“Questar”), Reliant Energy and Williams.

1 The Commission said in footnote 12 of the Petal Gas Order on Rehearing
2 (at mimeo pages 5 and 6), with respect to its certificate order:

3 The Commission’s then-current criteria for selecting a
4 proxy group for natural gas pipelines were as follows: (1)
5 the selected company had to be publicly-owned with
6 publicly-traded stock; (2) the selected company had to own
7 one or more FERC-regulated interstate gas pipeline
8 subsidiaries; (3) the selected companies were considered by
9 investors to be reflective of the risks of natural gas
10 pipelines as evidenced by their inclusion in such investor-
11 oriented products as the analysis of diversified natural gas
12 industry companies that appear quarterly in the Value Line
13 “Investment Survey” publication, the gas transmission
14 companies in Moody’s natural gas industry averages, and
15 Standard & Poor’s Natural Gas Pipelines Index; and (4) the
16 selected companies were companies for which the
17 transmission of natural gas accounted for, on average, over
18 the most recent three-year period for which data was
19 available, approximately 50 percent or more of the total
20 dollars in at least one of the two areas, operating income
21 and total assets.

22 106 FERC ¶ 61,325 (March 30, 2004)(citing *Williston Basin*, 104 FERC at p.
23 61,103 n.46).

24 The Commission decided in the Petal Gas Order on Rehearing to rely on
25 the *Williston Basin* decision, cited above, and declared that the ROE found
26 appropriate in that case—12.48%—was to be applied to Petal Gas. I note that the
27 statement of policy above differs significantly from that in the more recent *EPGT*
28 discussed earlier in my testimony.

29 **Q.31 Please discuss the *Williston Basin* decision, and the rationale for it.**

30 A. The history of the set of proxies used in *Williston Basin* begins with the evidence
31 presented at the evidentiary hearing. Testimony was presented to ALJ Bobbie J.
32 McCartney, who, after considering the shrinking set of traditional proxy

1 companies, wrote in *Williston Basin Interstate Pipeline Company*, 95 FERC
2 ¶ 63,008, at p. 65,091-92 (2001)(footnotes omitted):

3 Staff, through the testimony of witness Shriver, offers a
4 more expansive proxy group [of 15 companies] which goes
5 beyond those companies traditionally relied upon by the
6 Commission for this purpose [the DCF analysis]. . . .

7 The most notable aspect of this expanded proxy group, as
8 compared to the proxy group traditionally relied on by the
9 Commission, is the inclusion by Staff witness Shriver of
10 several companies with electric utility revenues. . . .

11 • • •

12 Williston takes exception with Staff’s effort to increase the
13 number of companies in the proxy group by means of the
14 inclusion of electric companies. Rather, Williston proposes
15 a proxy group of nine companies that are included in the
16 Natural Gas (Diversified) industry group as published by
17 *The Value Line Investment Survey* (“the Value Line
18 Group”). The Value Line Group includes the four
19 companies on which the Commission has relied, plus five
20 others: Columbia Energy Group, Equitable Resources, Inc.,
21 Kinder-Morgan, Inc., National Fuel Gas Company and
22 Questar Corporation. Williston submits that this group of
23 companies is an appropriate proxy group because they are
24 all gas companies and are, therefore, comparable to
25 Williston.

26 Both witnesses discuss the dangers of selecting too-small a
27 sample size; and both Staff and Williston agree that the
28 four company (soon to be three) “Commission Group” is
29 too small to be useful. Further, every company in
30 [Williston witness] Mr. Moul’s nine member “Value Line
31 Group” is also contained in [Staff witness] Mr. Shriver’s
32 fifteen member group. Accordingly, the inquiry becomes
33 whether the nine gas companies contained in Williston’s
34 “Value Line Group” (soon to become 7) represents so small
35 a number that it is necessary to expand the proxy group to
36 include electric utilities to reach an adequate sample size.

37 It is my determination that, based on the record before me,
38 that [sic] the “Value Line Group” has a sufficient number
39 of gas pipeline companies to comprise a functional proxy
40 group. Because mergers and acquisitions continue to

1 eliminate gas pipelines from the proxy groups, it may soon
2 be necessary to revisit Staff's position that the number of
3 gas pipeline companies has grown so small that the proxy
4 group must be expanded to include electric utilities.
5 However, to do so in the instant proceeding is premature
6 and unnecessary. Accordingly, the "Value Line Group" is
7 hereby adopted for purposes of this analysis.

8 From this rather lengthy excerpt some conclusions can be reached. First,
9 both Williston and the Staff agreed on use of the nine companies in the "Value
10 Line Group." So, there was no obvious need for the ALJ to examine the makeup
11 of the set of nine. The only argument was over the additional six companies
12 proposed by Staff. Second, Williston described the nine as "gas companies," not
13 necessarily gas *pipeline* companies. There is no suggestion in the ALJ's decision
14 that either party, or the ALJ, ever considered the difference between gas
15 transmission companies and gas distribution companies as proxies. The issue was
16 whether a nine-member group of proxies, all "gas" companies and agreed to by
17 both parties, was large enough or whether it should be supplemented by electric
18 companies. There is no mention in the ALJ's decision of the cases I shall discuss
19 in which the Commission explicitly rejected gas distribution companies as
20 proxies.

21 **Q.32 What was the Commission's decision in Williston Basin?**

22 A. The Commission approved the ALJ's conclusions in 104 FERC ¶ 61,036 (2003),
23 at p. 61,103-04. The most explicit statement of agreement is: "Williston
24 presented a reasonable group of natural gas companies and Staff has not
25 convinced us at this time of the need to include electric entities." *See id.* at p.
26 61,104. The reference again is to "natural gas companies" with no mention of
27 *pipelines*, and there is of course no mention of the mixture of pipeline and

1 distribution companies, because the issue had not been raised by either party or by
2 the ALJ.

3 **Q.33 In the Petal Gas Order on Rehearing, did the Commission discuss any of its**
4 **previous decisions rejecting gas distribution companies as proxies?**

5 A. No, although in its request for rehearing (at page 10 of the request), Petal Gas had
6 cited *Mountain Fuel Resources*, a decision I shall discuss, in which the
7 Commission had rejected their use as proxies in gas pipeline cases.

8 **Q.34 Of the nine proxy companies used in the Williston decision, and again in the**
9 **Petal Gas Order on Rehearing, how many are available for use as proxies at**
10 **present?**

11 A. Two of the nine are no longer publicly-traded. These are Coastal and Columbia.
12 Enron is bankrupt and I believe clearly unusable as a proxy. Of the six remaining,
13 three are the gas distribution companies that the Commission has explicitly
14 rejected in past decisions, as I shall show. These are Equitable, National Fuel and
15 Questar. The last three are KMI, El Paso and Williams. I have already explained
16 why the last two, at the present time, are not appropriate for use as proxy
17 companies and I have referred to Staff testimony and to an ALJ's decision
18 supporting that conclusion. The only remaining survivor is KMI, a company that
19 I and Staff witnesses have made use of in recent testimony and that I include in
20 my present testimony.

21 **Q.35 Have you an exhibit that illustrates the characteristics of the three gas**
22 **distribution companies—Equitable, National Fuel and Questar—that make**
23 **them unsuitable as proxy companies in this proceeding?**

24 A. Yes, it is Exhibit No. __ (JPW-7).

1 **Q.36 Please explain the exhibit.**

2 A. The exhibit shows, for the four most recent years, the income from various
3 segments of each company. The measure of income reported by Equitable is
4 operating income. For National Fuel, it is net income, and for Questar, it is
5 operating income.

6 The exhibit shows the percentage of income from each segment. For
7 Equitable, pipelines contributed a very small percentage of operating income, and
8 less than half the percentage for distribution. For National Fuel, the net income
9 contribution for pipelines and storage was less than that from distribution. For
10 Questar, the proportions of operating income contribution for transmission and
11 distribution were close until 2003, when a dispute over gas-processing costs and
12 non-cash charges for a new accounting rule led to a sharp drop in the yearly net
13 income from distribution. But transmission still contributed less than a quarter of
14 total operating income.

15 **Q.37 What is your conclusion from the exhibit?**

16 A. I believe it shows that the contributions of gas pipelines to the incomes of the
17 three companies is so low as to render them inappropriate for use as proxy
18 companies in this proceeding.

19 **Q.38 Has the Commission explicitly rejected Equitable, National Fuel and Questar**
20 **as suitable proxies for use in a gas transmission case?**

21 A. Yes. Equitable was explicitly rejected as a proxy for gas transmission companies
22 in *Williams Natural Gas Company*, 77 FERC ¶ 61,277, at p. 62,196 (1996), and
23 also in *Williston Basin Interstate Pipeline Company*, 87 FERC ¶ 61,264, at p.
24 62,007 (1999). The latter decision also explicitly rejected Questar as a proxy.

1 In *EPGT Texas Pipeline*, 99 FERC ¶ 61,295 (2002), the Commission
2 selected four proxy companies from a set of fifteen proposed by the pipeline
3 company. The four the Commission relied on to determine the EPGT cost of
4 equity were Williams, Coastal, El Paso and Enron, the only candidate proxies that
5 the Commission found met its criteria for use as proxies in a gas pipeline case.
6 *See id.* at 62,250. Among the eleven rejected candidates were Equitable, National
7 Fuel and Questar.

8 In *Wyoming Interstate Company*, 96 FERC ¶ 63,040 (2001), ALJ David I.
9 Harfeld rejected the set of proxy companies advanced by BP, a set including
10 Equitable, National Fuel and Questar. Judge Harfeld said:

11 The flaw in BP’s position is that the proxy group advocated
12 by it is heavily influenced by several distribution
13 companies that are less risky than a transmission company
14 such as WIC. The Commission has rejected the use of such
15 companies in a proxy group because “distribution
16 companies . . . are not really comparable to [pipeline
17 companies].” *Mountain Fuel Resources, Inc.*, 28 FERC
18 ¶ 61,195 at p. 61,370 (1984). Gas distribution companies
19 typically have franchised service areas and do not face
20 direct competition in their core markets. WIC and other
21 interstate pipelines do not have such a competitive
22 advantage.

23 *See id.* at p. 65,262-63. In *Mountain Fuel Resources*, the Commission was not
24 specific as to the particular distribution companies that it rejected, but Judge
25 Harfeld’s rejections were specific.

26 **Q.39 Do you have an exhibit to show further that the *Williston* proxy set is not**
27 **appropriate at the present time for the determination of the cost of equity for**
28 **a gas pipeline?**

29 A. Yes. This is my Exhibit No. __ (JPW-8).

1 **Q.40 Please explain Exhibit No. __ (JPW-8).**

2 A. In that exhibit I have used the DCF analysis as in my Exhibit No. __ (JPW-3). I
3 have listed in Exhibit No. __ (JPW-8) the proxy companies that I believe are the
4 appropriate ones for this proceeding. They are the companies listed in my Exhibit
5 No. __ (JPW-3). I have then added from the set of Williston proxies used by the
6 Commission, in its Petal Gas Order on Rehearing, the five companies (not
7 counting KMI) that are still publicly-traded and not bankrupt. I have already
8 included KMI in my chosen set. I have shown the DCF results (1) for the entire
9 collection of ten companies, as well as the results (2) for my chosen set, (3) for
10 the set of *Williston* group survivors, (4) for El Paso and Williams and (5) for
11 Equitable, National Fuel Gas, and Questar.

12 **Q.41 What conclusions do you draw from Exhibit No. __ (JPW-8)?**

13 A. My chosen set shows, as does Exhibit No. JPW-3, a median cost of equity of
14 14.31% and a mean of 14.16%.

15 El Paso and Williams together show a median and mean of only 7.70%.
16 These results confirm I believe my rejection of the two companies as not
17 representative at the present time of gas pipelines.

18 The three distribution companies show a median cost of equity of 9.89%
19 and a mean of 10.45%. I believe the wide difference between the results for the
20 pipeline proxies I have chosen and the results for the distribution companies are
21 consistent with the Commission decisions that have rejected the distribution
22 companies from the DCF analysis, as being significantly less risky than pipeline
23 companies.

1

Criteria to be satisfied for the DCF Method

2 **Q.42 What criteria are to be used for the determination of the cost of common**
3 **equity?**

4 A. The Supreme Court has established the criteria in *Bluefield Water Works v. PSC*,
5 262 U.S. 679, 692-93 (1923), and *FPC v. Hope Natural Gas Co.*, 320 U.S. 591,
6 605 (1944). The utility must be allowed a rate of return commensurate with
7 returns on investments in other enterprises having corresponding risks, one that
8 assures confidence in the utility's financial integrity and one that maintains its
9 credit and enables it to attract capital.

10 **Q.43 Do these criteria require a methodology that is based on measurement of**
11 **actual investor expectations?**

12 A. Yes. The regulated utility must be able to attract investment capital in a free and
13 competitive capital market. It must offer investors the prospect of a competitive
14 rate of return, and its allowed rate of return must therefore reflect investor
15 expectations.

16

DCF Model Market Based

17 **Q.44 The DCF model that you have set out in your testimony is:**

18
$$k = (1+.5g)y + g.$$

19 **What is the basis for stating that the DCF model that you have**
20 **described is “market based”?**

21 A. The element y in the formula is the dividend yield actually available in the market
22 place for a particular stock. It is, as I have stated above, the dividend per share, a
23 known quantity for any particular stock, divided by the quoted market price of a
24 share of stock, a known number and one established in a free market where shares

1 are traded frequently. There is rarely any significant dispute over the value of y to
2 be used in the DCF model in any particular case.

3 For the value of g to be market based, it must reflect the growth rate
4 expected by the investment community for the particular company.

5 **Dividend Yield**

6 **Q.45 How did you determine the dividend yield for each of your proxy companies?**

7 A. I averaged the high and low prices for each company over the most recent six
8 months, and divided the average price into the annualized dividend to arrive at a
9 yield for each company. The months were November 2003 through April 2004.
10 The prices, dividends, and yields are shown in Exhibit No. __ (JPW-3).

11 **Q.46 Does the Commission generally favor the use of six-month averages to**
12 **compute yields for use in the DCF model?**

13 A. Yes. This was the conclusion in Opinion No. 299, *Boston Edison Company*, 42
14 FERC ¶ 61,374 (1988) and *Blue Ridge Power Agency et al.*, 55 FERC ¶ 61,509
15 (1991).

16 **Investor Expected Growth**

17 **Q.47 Is the determination of the value of g as straightforward as the determination**
18 **of y ?**

19 A. No. There are practical difficulties in determining the market-based growth rate
20 g . First, not all investors may have the same growth expectation. Second, growth
21 expectations may vary depending upon the length of the future period for which
22 the growth rate is to apply, and there is no entirely objective way to determine the
23 correct period for the g to be used in the DCF method. In theory, the model I
24 have described calls for a growth rate “to infinity.” But, as a practical matter,
25 investors are not interested in expected growth to infinity. There is evidence that

1 investors generally have little use for growth forecasts that purport to go beyond
2 about five years, because such forecasts are believed to be unreliable.

3 There are different sources of values for g . At one time, witnesses in rate
4 cases made extensive use of historical growth rates as predictors of future growth
5 rates. Then, published growth forecasts prepared by professional security analysts
6 began to be available. These forecasts presumably incorporate all that can be
7 learned from history plus the expertise of the analysts in judging the future for a
8 particular company. Different analysts, of course, provide different forecasts, but
9 there is generally a range of agreement.

10 **Q.48 How, in your judgment, should the growth rate g be determined for use in**
11 **the DCF equation?**

12 A. First, it is important to note that the rate g is the growth rate *expected* by the
13 market, that is by investors as a whole. It is not necessarily a correct growth
14 forecast; the market may be wrong. But the cost of common equity to a regulated
15 enterprise depends upon what the market expects, not upon what is actually going
16 to happen.

17 Since the DCF method requires the use of growth rates expected by
18 investors, it is important to use the best evidence of the growth rates actually
19 expected by the investment community. There is a body of empirical evidence
20 showing that the most reliable measure of investor expected growth rates for use
21 in the DCF model is the set of growth forecasts published by professional security
22 analysts. Therefore, I examined analysts' earnings forecasts reported monthly by
23 IBES, and show them in Exhibit No. ___ (JPW-3).

24 **Q.49 Do you believe that the growth forecasts provided by IBES are the best**
25 **available for use in the DCF model?**

1 A. Yes, at least at the present time.

2 **Q.50 Does the FERC require the use of IBES-reported forecasts?**

3 A. I believe so. The requirement can be found in *Transcontinental Gas Pipe Line*
4 *Corporation*, Opinion No. 414-B, Opinion and Order on Rehearing, 85 FERC ¶
5 61,323, at p. 62,266-70 (1998), in *Williams Natural Gas Company*, Order on
6 Rehearing, 86 FERC ¶ 61,232, at p. 61,861 (1999), in *Northwest Pipeline*
7 *Corporation*, 87 FERC ¶ 61,266, at p. 62,058-59 (1999), and decisions cited
8 therein, in *Northwest Pipeline Corporation*, Order on Rehearing, 92 FERC ¶
9 61,287, at p. 62,000-05 (2000), as well as in *Enbridge Pipelines (KPC)*, Order on
10 Initial Decision, 100 FERC ¶ 61,260, at p. 61,965 (2002).

11 **IBES-Reported Growth Forecasts**

12 **Q.51 Please explain how you made use of IBES-reported growth forecasts.**

13 A. IBES is a service sold by subscription. The FERC is one of the subscribers.
14 IBES regularly collects five year earnings growth forecasts from about 2,400
15 security analysts for about 5,000 companies. The forecasts are tabulated and
16 distributed monthly to subscribers. I made use of the earnings growth forecasts
17 published in April 2004, for my proxy companies.

18 **Q.52 Are the earnings growth forecasts reported by IBES strictly five-year**
19 **forecasts?**

20 A. IBES identifies them as “long-term growth” forecasts, although they are based on
21 five year projections. So far as investors are concerned, I believe that a five-year
22 forecast is regarded as “long-term.”

23 **Use of the Commission’s Two-Stage Growth Model**

24 **Q.53 Please explain the Commission’s two-stage growth DCF model.**

1 A. The Commission appears to have been troubled in recent years by the question
2 whether published growth forecasts satisfy the assumption of the DCF model that
3 the value of g is the investor expectation for a long enough period to justify the
4 model's use. As I have noted, in theory, the model requires a growth expectation
5 "to infinity." As a practical matter, there are no published forecasts of corporate
6 earnings growth that purport to go beyond about five years.

7 The model the Commission has turned to is a two-stage growth model,
8 making use of the IBES-reported earnings growth forecasts that I have discussed
9 and also of forecasts of long-term growth in Gross Domestic Product (GDP)
10 derived from three sources and then averaged. The sources were DRI/McGraw
11 Hill, EIA and WEFA, an economic forecasting organization. DRI and WEFA
12 combined to form Global Insight and now produce a single forecast. In Opinion
13 No. 414-A, the Commission decided to give the short-term (IBES-reported)
14 growth forecast a two-thirds weight and the long-term (GDP) forecast a one-third
15 weight, because "long-term projections are inherently more difficult to make, and
16 thus less reliable, than short-term projections." 84 FERC at 61,423.

17 **Q.54 In your judgment, does the Commission's two-stage model accurately reflect**
18 **the process by which investors make the decision to buy or sell shares of**
19 **stock?**

20 A. I believe that the use of the second stage growth forecast does not accurately
21 reflect investor behavior, and that the Commission's method does not qualify as a
22 true "market based" method.

23 **Q.55 Did you nevertheless perform your analysis using the Commission's two-**
24 **stage growth model?**

25 A. Yes. The results are shown in Exhibit No. __ (JPW-3).

1 **Q.56 Please explain the results in your exhibit.**

2 A. To the dividend yields and the IBES-reported growth rates, I have added the GDP
3 growth rate forecast as the Commission has prescribed. The mean of the two
4 sources of long-term GDP growth forecasts is 6.18%. I have given a 2/3 weight
5 to the IBES-reported earnings growth rate forecast and a 1/3 weight to the GDP
6 growth rate forecast in arriving at weighted average growth rates.

7 The end result for the set of five gas pipeline proxy companies is a range
8 of reasonableness of 12.29% to 15.52%, with a mean of 14.16% and a median of
9 14.31%.

10 **Q.57 What is your conclusion with respect to the cost of equity for gas pipelines at**
11 **the present time?**

12 A. I believe the range from the mean of 14.16% to the median of 14.31% is a good
13 measure of the reasonable cost of equity to gas pipelines.

14 **Maritimes & Northeast Pipeline, L.L.C.**
15 **Capital Structure and Cost of Debt**

16 **Q.58 What capital structure and cost of debt is Maritimes using in this**
17 **proceeding?**

18 A. Maritimes is using its own capital structure and debt cost in this proceeding. The
19 capital structure is 43.75% equity and 56.25% debt. The weighted average cost of
20 long-term debt is 6.98%.

21 **Q.59 Is such use appropriate?**

22 A. Yes. In Opinion No. 414-A, the Commission stated, at 84 FERC 61,411-12, that
23 it would adopt the pipeline's own capital structure if the pipeline has its own non-
24 guaranteed debt and a credit rating of its own. Maritimes meets both of these
25 conditions. Further, at 84 FERC 61,419, the Commission stated that the capital

1 structure would be accepted so long as the equity ratio is not unreasonable when
2 compared to the equity ratios of companies for which the Commission approved
3 capital structures in previous cases. In my Exhibit No. __ (JPW-6), I have set out
4 the equity ratios approved by the Commission. I believe the Maritimes equity
5 ratio is clearly reasonable when compared to the approved equity ratios. In
6 addition, Maritimes meets a third condition in that its equity ratio is within the
7 range of equity ratios of my proxy companies, as shown in Exhibit No. ____
8 (JPW-3). Accordingly, Maritimes' use of its own capital structure is appropriate.

9 **Cost of Equity**

10 **Q.60 What are the risks to Maritimes?**

11 A. The financial risk of Maritimes, represented by its equity ratio, is about the same
12 as the average for my proxy companies, which is shown in my Exhibit No. __
13 (JPW-3).

14 The business risks to Maritimes are discussed by other witnesses in this
15 proceeding, and I rely on their testimony. Maritimes is essentially a single supply
16 source pipeline. The vast majority of its natural gas supply originates in the fields
17 of the Sable Offshore Energy Project's ("SOEP") fields, offshore Nova Scotia, as
18 described by Company witness Mr. Richard Kruse. As Mr. Kruse and Company
19 witness Mr. Leon W. Giese testify, this source is quickly depleting, at a much
20 greater rate than initially estimated. Hence, there is little likelihood that there will
21 be any subscription of firm capacity beyond the first twenty years of service on
22 Maritimes' pipeline.

1 **Q.61 What other factors contribute to Maritimes' risk?**

2 A. As witness Mr. John J. Reed testifies in his direct testimony, Canadian demand
3 for natural gas has been rising towards levels initially anticipated. Mr. Kruse
4 testifies that since Maritimes is essentially a single supply source pipeline, the
5 projected level of daily throughput on the United States portion of the system in
6 the near term is the difference between the deliverability of the SOEP and the
7 quantity of SOEP production that is consumed in Canada.

8 **Q.62 How do these risks affect your final conclusion?**

9 A. My determination of the range of cost of equity for my set of proxy companies
10 from 14.16% to 14.31% does not reflect any risks beyond those for the average
11 gas pipeline. I believe the cost of equity for Maritimes is above that range.

12 **Q.63 What cost of equity does Maritimes propose to use in this proceeding?**

13 A. The Company proposes to use 14.25% as its cost of common equity in this
14 proceeding.

15 **Q.64 Is 14.25% a reasonable cost of common equity for Maritimes?**

16 A I believe it is.

17 **Q.65 Does this complete your direct testimony?**

18 A. Yes. It does.

19

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

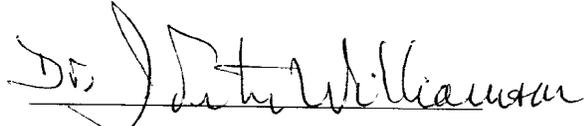
Maritimes & Northeast Pipeline, L.L.C.

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Docket No. RP04-

AFFIDAVIT OF DR. J. PETER WILLIAMSON

DR. J. PETER WILLIAMSON, being first duly sworn, on oath states that he is the witness whose Prepared Direct Testimony is filed herein; that, if asked the questions which appear in the text of aforesaid Prepared Direct Testimony, affiant would give the answers that are herein set forth; and that affiant adopts the aforesaid Prepared Direct Testimony as his sworn, direct testimony in this proceeding.



DR. J. PETER WILLIAMSON

SUBSCRIBED AND SWORN TO before me, a Notary Public in and for the State of New Hampshire, County of Grafton, this 23d day of June, 2004.


Notary Public

KATHERINE J. LUCIER, Notary Public
My Commission Expires September 15, 2004

My commission expires: _____

**EDUCATION, TEACHING, RESEARCH AND
PROFESSIONAL EXPERIENCE OF
J. PETER WILLIAMSON**

Education

University of Toronto, B.A. in 1952, Mathematics, Physics & Chemistry; Harvard Business School, MBA in 1954, DBA in 1961; Harvard Law School LL.B. in 1957.

Teaching and Research

From 1957 to 1961, Assistant Professor of Business Administration at the Harvard Business School. In 1961 joined the faculty of the Amos Tuck School of Business Administration at Dartmouth College as Associate Professor. On the Amos Tuck School faculty since 1961 and Professor since 1966 (except for one year on the faculty of the University of Toronto Law School). Currently the Laurence F. Whittemore Professor of Finance, Emeritus, at the Amos Tuck School.

Teaching at the Amos Tuck School included courses in corporation finance, financial institutions, investments and federal taxation. Research in these fields has led to a dozen or so books and monographs and to articles in the *Journal of Finance*, the *Financial Analysts Journal*, the *Journal of the Eastern Financial Association*, the *Journal of Bank Research*, the *Journal of Portfolio Management* and other professional journals.

Consulting and Research

Consulting activity, in addition to work for regulated utilities, has included valuations of businesses, advice on investment portfolios and specifically on investment expectations; and several publications have been specifically concerned with investment strategies, risk and likely rates of return. Author of four books that are largely concerned with this subject and a number of articles.

The book, *Performance Measurement and Investment Objectives for Educational Endowment Funds*, was published by the Common Fund in 1972. The book, *Funds for the Future*, published by the Twentieth Century Fund in 1975, consists chiefly of a discussion of investment of college and university endowment funds, including investment risk and expected rates of return. A revised and updated edition of this book, entitled *Funds for the Future: College Endowment Management for the 1990s*, was published by the Common Fund in 1993. The book, *Spending Policy for Educational Endowments*, co-authored with Richard Ennis of Ennis, Knupp & Gold, Inc., was published by the Common Fund in 1976. It deals with the relationship between spending plans and expectations of risk and return. Author of chapters in *The Handbook of Financial Markets and Institutions* (6th ed. 1986) and in *The Investment Manager's Handbook* (1980) entitled, respectively, "Performance Measurement" and "Educational Endowment Funds." Editor of, and author of two chapters in the *Investment Banking Handbook* published by John Wiley & Sons in 1988. Author of a chapter in the *Handbook of Modern Finance*, published by Warren Gorham Lamont in 1993.

Trustee of the Common Fund 1978-90, and Chairman of its Short-term Fund Committee. Participated as a trustee in the hiring, reviewing and replacement of over thirty investment managers who managed 5.5 billion dollars invested long-term. Worked more closely with three managers who managed another 4.5 billion dollars short-term funds of the Common Fund.

In 1966-67 and 1977-79, retained by the Canadian Government's Department of Consumer and Corporate Affairs to consider appropriate federal regulation of securities markets in Canada. One of four authors of *Proposals for a Securities Market Law for Canada* (1979) and the author of two working papers published as part of the *Proposals*: "Canadian Capital Markets" and "Canadian Financial Institutions."

Prepares summaries for publication of all the presentations made at the semi-annual seminars of the Institute for Quantitative Research in Finance and has done so for 27 years. The set of summaries for each seminar is published

following the seminar, and in addition five volumes of summaries organized by topics have been published, covering 1976 through 2000.

Regulatory Proceedings

Has testified on behalf of a number of utilities and on behalf of several consumer representatives. Testified in 1980 on behalf of the Public Service Company of New Hampshire before the New Hampshire Board of Taxation in connection with the franchise tax paid by utilities in New Hampshire. Testified over the past 15 years in electric utility rate cases before the Vermont Public Service Board at the request of the Counsel for the Public, the Department of Public Service and the Public Service Board in connection with applications for rate increases filed by Green Mountain Power Corporation (Dockets 3642, 3758, 4418, 4503/4537, 4570, 4661, 4796, 4865, 5013 and 5125), Central Vermont Public Service Corporation (Dockets 3744, 3991, 4230, 4634 and 5030) and Vermont Electric Cooperative (Dockets 5009/5112 and 5630/5632), and on behalf of Green Mountain Power (Dockets 5282, 5370, 5428, 5780, 5983 and 6107).

Testified, at the request of the Vermont Public Service Board, on a proposed amendment by Central Vermont Public Service Corporation to its first mortgage bond indenture (Docket 4206), and on the proposals by Green Mountain Power and Central Vermont to purchase participations in the Seabrook nuclear plant in the summer of 1979. Also testified before the Board at the request of the Department of Public Service on a proposal by Central Vermont Public Service corporation to sell its participation in the Seabrook plant (Docket 5045). Testified at the request of Central Vermont Public Service Corporation on a proposal to classify its Board of Directors (Docket 5103), and at the request of the Vermont Electric Cooperative on a proposed restructuring of its debt (Docket 5630/5632).

Testified before the Rhode Island Public Utilities Commission at the request of the Rhode Island Division of Public Utilities and Carriers in connection with an application for rate relief made by Narragansett Electric Company (Docket 1288).

Testified before the New Hampshire Public Utilities Commission at the request of the New Hampshire Electric Cooperative in rate cases (Dockets DR 77-83, DR 78-24, DR 79-178, DR 80-189, DR 81-340 and DR 98-025) and in a financing case (Docket DF 83-360). Also testified before the New Hampshire PUC at the request of the Consumer Advocate on a petition for rate relief filed by Public Service Company of New Hampshire (Docket DR 79-187), at the request of Public Service Company of New Hampshire on its petitions for rate relief (Dockets DR 81-6, DR 81-87, DR 82-150, DR 82-333, DR 86-122 and DR 87-151), and at the request of EnergyNorth Natural Gas in its petition for rate relief (Docket DR91-212).

Testified before the California Public Utilities Commission at the request of SFPP, L.P., Complaint No. 97-04-025, January, 1998, and October, 2000.

Filed testimony with the Regulatory Commission of Alaska on behalf of TAPS Carriers, Case No. P-03-4, June 3, 2003.

Testified before the Federal Energy Regulatory Commission at the request of Public Service Company of New Hampshire in support of its rate increases (Docket Nos. ER81-659 and ER82-141). Also testified before the FERC at the request of Tennessee Gas Pipeline Co. (Docket Nos. RP80-97 and RP81-54), Midwestern Gas Transmission Co. (Docket Nos. RP81-17 and RP81-57), Tarpon Transmission Company (Docket No. RP84-82-000), Mountain Fuel Resources, Inc. (Docket No. RP86-7-000), Alabama-Tennessee Natural Gas Company (Docket No. RP87-41-000), Kern River Gas Transmission Company (Docket No. CP85-437-000), ANR Pipeline Company (Docket No. RP89-161), Tarpon Transmission Company (Docket No. RP84-82-004), Lakehead Pipeline Company L.P. (Docket No. IS92-27-000), Kern River Gas Transmission Company (Docket No. RP92-226-000), Wyoming Interstate Company, Ltd. (Docket No. RP85-39-000), Ozark Gas Transmission System (Docket No. RP94-105-000), Williams Natural Gas Company (Docket No. RP93-109-000), Southern Natural Gas Company (Docket No. RP93-15-000), Transcontinental Gas Pipe Line Corp. (Docket No. RP95-197), ANR Pipeline Company (Docket No. RP94-43-000), SFPP,

L.P. (Docket No. OR92-8-000), Ocean State Power (Docket Nos. ER97-1899 and -1890), Transcontinental Gas Pipe Line (Docket No. RP97-71), Stingray Pipeline Company (Docket No. RP99-166-000), and Arco Products Co., et al. v. SFPP, L.P. (Docket No. OR96-2-000), Trailblazer Pipeline Company (RP03-162-000), and High Island Offshore System, L.L.C. (RP03-221-000).

Testified before the Public Service Commission of Utah in Mountain Fuel Supply and Questar Gas Company (Cases Nos. 89-057-15 and 02-057-02).

Filed testimony with the State of New York Public Service Commission in Empire State Pipeline, Case No. _ (9/30/95).

Filed testimony with the Michigan Public Service Commission at the request of Dominion Midwest Energy, Inc., in Case No. U-12342, March 2000.

Prepared and filed testimony in rate cases before the FERC that have not involved hearings either because of settlements or because hearings have not yet been scheduled in: United Gas Pipe Line Company (Docket No. RP88-92), Questar Pipeline Company (Docket No. RP88-93), Natural Gas Pipeline Company of America (Docket No. RP88-209), Tennessee Gas Pipeline Company (Docket No. RP88-228), High Island Offshore System (Docket No. RP89-37), U-T Offshore System (Docket No. RP89-38), Southern Natural Gas Company (Docket Nos. RP89-224 and 90-139), South Georgia Natural Gas Company (Docket No. RP89-225), Alabama-Tennessee Natural Gas Company (Docket No. RP89-251), Transcontinental Gas Pipe Line (Docket No. RP90-8), Colorado Interstate Gas Company (Docket No. RP90-69), East Tennessee Natural Gas Company (Docket No. RP90-111), New England Hydro-Transmission Electric Company Inc., New England Hydro-Transmission Corporation (Docket No. ER90-450), New England Power Co. (Docket No. ER90-525), United Gas Pipe Line Company (Docket No. RP91-126), Questar Pipeline Company (Docket No. RP91-140-000), Williams Natural Gas Company (Docket No. RP-91-152-000), Ocean State Power II (Docket No. ER89-563), New England Power Co. (Docket No. ER91-565-000), Midwestern Gas Transmission Company (Docket No. RP91-189-000), Tennessee Gas Pipeline Co. (Docket No. RP91-203-000), East Tennessee Natural Gas Company (Docket

No. RP91-204-000), High Island Offshore System (Docket No. RP92-50-000), U-T Offshore System (Docket No. RP92-47-000), Viking Gas Transmission Company (Docket No. RP92-48-000), South Georgia Natural Gas Co. (Docket No. RP92-74-000), Southern Natural Gas (Docket No. RP92-134-000), New England Power Co. (Docket No. ER92-764-000), Tennessee Gas Pipeline Company (Docket No. RP91-203-000), United Gas Pipe Line Company (Docket No. RP92-235-000), Alabama-Tennessee Natural Gas Company (Docket No. RP92-237-000), Natural Gas Pipeline Company of America (Docket No. RP93-36-000), U-T Offshore System (Docket No. RP93-59-000), High Island Offshore System (Docket No. RP93-61-000), Trailblazer Pipeline Company (Docket No. RP93-55-000), Colorado Interstate Gas Company (Docket No. RP93-99-000), Texas Gas Transmission Company (Docket No. RP93-106-001), New England Power Company (Docket No. ER93-920-000), Lakehead Pipeline Company (Docket No. IS93-33), Massachusetts Electric Company (Docket No. ER94-129), U-T Offshore System (Docket No. RP93-61-000), High Island Offshore System (Docket No. RP93-59-000), Overthrust Pipeline Co. (Docket No. RP94-104-000), U-T Offshore System (Docket No. RP94-161-000), High Island Offshore System (Docket No. RP94-162), Wyoming Interstate Co., Ltd. (Docket No. RP94-267-000), Vermont Yankee Nuclear Power (Docket No. ER94-_), New England Power Company (Docket No. ER95-267-000), Stingray Pipeline Company (Docket No. RP94-301-000), Texas Gas Transmission Corp.(Docket No. 94-423-000), Florida Gas Transmission Company (Docket No. 95-103-000), Tennessee Gas Pipeline Company (Docket No. RP95-112-000), Williams Natural Gas Company (Docket No. RP95-136-000), Northern Natural Gas (Docket No. RP95-185), Natural Gas Pipeline Company of America (Docket No. RP95-326-000), Questar Pipeline Company (Docket No. RP95-407-000), Ocean State Power (Docket Nos. ER95-533-001 and ER95-530-001), Colorado Interstate Gas Co., (Docket No. RP96-190-000), Ozark Gas Transmission System (Docket No. RP96-189-000), Mississippi River Transmission Corp., (Docket No. RP96-199-000), Florida Gas Transmission Company (Docket No. RP96-366 -000), Transcontinental Gas Pipe Line Corp. (Docket No. RP97-71-000), Sea Robin Pipeline Company (Docket No. RP95-167-000), Texas Gas Transmission Corp (Docket No. RP97-344-000), Wyoming Interstate Co., Ltd. (Docket No. RP97- 375-000), Trailblazer Pipeline Company (Docket No. RP97-408-000), Northern Natural Gas Company (Docket No. RP98-203-000), Southern

Natural Gas Company (Docket No. RP99-496-000), Texas Gas Transmission Corporation (Docket No. RP00-260-000), Mojave Pipeline Company (Docket No. RP01-172-.000), Transcontinental Gas Pipe Line Corp. (Docket No. RP01-245-000), Canyon Creek Compression Company (RP02-356-000), Cove Point LNG Limited Partnership (RP01-217-001), Pine Needle LNG Company LLC (RP02-407-000), BP Transportation (Alaska) Inc. (IS01-504-000), Florida Gas Transmission (RP04-12-000), Algonquin Gas Transmission Company (RP04-24-000), and Southern Star Central Gas Pipeline Inc. (RP04-276).

Testified three times before the Ontario Securities Commission, once in July 1982 in hearings on diversification in the Canadian securities industry, again in June 1983 in hearings on the entry of banks into the brokerage business, and again in December 1984 in hearings on ownership of securities firms.

Segment EBIT/Operating Income
Company Proxy Group

1 Enterprise Products Operating Margin	Year	Total	Fractionation	Pipelines	Processing	Octane Enhancement	Other	Fractionation	Pipelines	Processing	Octane Enhancement	Other	Total
													Percent
									As % Of Total	As % Of Total	As % Of Total	As % Of Total	
	2003	410415	132822	282854	30328	-32701	-2888	32.36%	68.92%	7.39%	-7.97%	-0.70%	100.00%
	2002	332627	129000	214932	-17633	8569	-2241	38.78%	64.62%	-5.30%	2.58%	-0.67%	100.00%
	2001	376783	118610	96569	154989	5671	944	31.48%	25.63%	41.13%	1.51%	0.25%	100.00%
	2000	320615	129376	56099	122240	10407	2493	40.35%	17.50%	38.13%	3.25%	0.78%	100.00%

2 Gulfterra Performance Cash Flows	Year	Total	Nat Gas Pipelines & Plants	Nat Gas Storage	Oil/Gas NGL	Platform Services	Nat Gas Pipelines & Plants	Nat Gas Storage	Oil/Gas NGL	Platform Services	Total
											Percent
							As % Of Total	As % Of Total	As % Of Total	As % Of Total	
	2003	419952	311164	29554	59053	20181	74.10%	7.04%	14.06%	4.81%	100.00%
	2002	256385	167185	16629	43347	29224	65.21%	6.49%	16.91%	11.40%	100.00%
	2001	143752	52200	13209	47560	30783	36.31%	9.19%	33.08%	21.41%	100.00%

3 KMEP Segment Earnings	Year	Total	Nat Gas Pipelines	Product Pipelines	CO2 Pipelines	Terminals	Nat Gas Pipelines	Product Pipelines	CO2 Pipelines	Terminals	Total
											Percent
							As % Of Total	As % Of Total	As % Of Total	As % Of Total	
	2003	1034718	319,288	370,974	140,755	203,701	30.86%	35.85%	13.60%	19.69%	100.00%
	2002	916601	276766	343935	100983	194917	30.19%	37.52%	11.02%	21.27%	100.00%
	2001	738780	193804	312464	92087	140425	26.23%	42.29%	12.46%	19.01%	100.00%

4 Kinder Morgan Inc. Segment Earnings	Total	Nat'l Gas Pipeline of America	TransColorado Pipeline	Kinder Morgan Retail	Power & Other	Nat'l Gas Pipeline of America	TransColorado Pipeline	Kinder Morgan Retail	Power & Other	Total	
										As % Of Total	As % Of Total
	2003	482687	372017	23112	65482	22076	77.07%	4.79%	13.57%	4.57%	100.00%
	2002	473288	359911	12648	64056	36,673	76.04%	2.67%	13.53%	7.75%	100.00%
	2001	463980	346569	-5268	56696	65,983	74.69%	-1.14%	12.22%	14.22%	100.00%
	2000	418996	344405	-10336	47705	37,222	82.20%	-2.47%	11.39%	8.88%	100.00%

5 Northern Border Operating Income	Total	Interstate Natural Gas Pipelines	Gas Gathering & Processing	Coal Slurry	Other	Interstate Natural Gas Pipelines	Gas Gathering & Processing	Coal Slurry	Other	Total	
										As % Of Total	As % Of Total
	2003	11937	212,841.0	-199,012.0	5144.0	-7036.0	1783.04%	-1667.19%	43.09%	-58.94%	100.00%
	2002	224981	200584	24900	5054	-5557	89.16%	11.07%	2.25%	-2.47%	100.00%
	2001	220959	199822	18239	5953	-3055	90.43%	8.25%	2.69%	-1.38%	100.00%
	2000	188302	184167	2019	4355	-2239	97.80%	1.07%	2.31%	-1.19%	100.00%

To the best of Dr. Williamson's knowledge, information and belief, the following table lists the gas transmission companies owned by his proxy companies, with those companies filing Form 2 identified by an asterisk.

Enterprise Products Partners, L.P.	*Stingray Pipeline Company, L.L.C. *Nautilus Pipeline Company, L.L.C.
Gulfterra Energy Partners, L.P.	*High Island Offshore System, L.L.C. Petal Gas Storage Co.
Kinder Morgan Energy Partners, L.P.	*Kinder Morgan Interstate Gas Transmission, L.L.C. *Trailblazer Pipeline Co.
Kinder Morgan Inc.	*Natural Gas Pipeline Company of America *TransColorado Gas Transmission Company Horizon Pipeline Company Canyon Creek compression Company
Northern Border Partners, L.P.	*Northern Border Pipeline Co. *Midwestern Gas Transmission Co. *Viking Gas Transmission Co. *Guardian Pipeline, L.L.C.

Equity Ratios Allowed by the FERC

		Equity Ratio Allowed
1	Pacific Gas Transmission Co., 62 FERC ¶ 61,109 (1993) (Cited in 4, 5 & 9)	68.86%
2	Panhandle Eastern Pipeline Co., 71 FERC ¶ 61,228 (1995) (Cited in 4, 5, 6 & 9)	61.79%
3	Panhandle Eastern Pipeline Company, 74 FERC ¶ 61,109 (1996) (Cited in 8)	59.97%
4	Williams Natural Gas, 84 FERC ¶ 61,080 (1998) (Citing 1 & 2 and Cited in 8)	64.29%
5	Opinion No. 414-A, Transcontinental Gas Pipeline Corporation, 84 FERC ¶ 61,084 (1998) (Citing 1 & 2 and Cited in 7), and	
6	Opinion No. 414-B, Transcontinental Gas Pipeline Corporation, 85 FERC ¶ 61,323 (1998) (Citing 2 and Cited in 9)	57.58%
7	Williams Natural Gas, 86 FERC ¶ 61,232 (1999) (Citing 5)	64.29%
8	Northwest Pipeline Corporation 92 FERC ¶ 61,287 (2000) (Citing 3 & 4)	55.00%
9	Transcontinental Gas Pipeline corporation, 90 FERC ¶ 61,279 (2000) (Citing 1, 2 & 6)	60.20%

Segment EBIT/Operating Income/Net Income

Distribution Companies																			
		Total	Pipeline	Distribution	Marktg	Prodn	Gathering	NORSECO	HDQRTRS & Eliminations	Gulf	Pipeline	Distribution	Marketing	Production	Gathering	NORESCO	HDQRTRS & Eliminations	Gulf	Tot
											As %	As %	As %	As %	As %	As %	As %	As %	%
Equitable	2003	302217	22415	63093	24371	172384	23411	16931	-20388		7.42%	20.88%	8.06%	57.04%	7.75%	5.60%	-6.75%	0.00%	100.00%
Resources	2002	269127	25378	60021	16530	151289	19913	9847	-13851		9.43%	22.30%	6.14%	56.21%	7.40%	3.66%	-5.15%	0.00%	100.00%
Operating	2001	272349	20958	52173	5850	161508	16496	5525	9839		7.70%	19.16%	2.15%	59.30%	6.06%	2.03%	3.61%	0.00%	100.00%
Income	2000	239005	21502	63953	7523	124531	-10620	10286	15404	6426	9.00%	26.76%	3.15%	52.10%	-4.44%	4.30%	6.45%	2.69%	100.00%
EBIT in 2000																			
Averages											8.38%	22.27%	4.88%	56.17%	4.19%	3.90%	-0.46%	0.67%	
Averages																			
		Total	Pipeline & Storage	Utility	Explor'n & Production	Inter-national	Energy Marketing	Timber			Pipeline & Storage	Utility	Exploration & Production	Inter-national	Energy Marketing	Timber			
											As %	As %	As %	As %	As %	As %			
National	2003	187695	45230	56808	-31293	-1368	5868	112450			24.10%	30.27%	-16.67%	-0.73%	3.13%	59.91%			100.00%
Fuel Gas	2002	119959	29715	49505	26851	-4443	8642	9689			24.77%	41.27%	22.38%	-3.70%	7.20%	8.08%			100.00%
Net Income	2001	70041	40377	60707	-32284	-3042	-3432	7715			57.65%	86.67%	-46.09%	-4.34%	-4.90%	11.01%			100.00%
	2000	125778	31614	57662	34877	3282	-7790	6133			25.13%	45.84%	27.73%	2.61%	-6.19%	4.88%			100.00%
Averages											32.91%	51.01%	-3.16%	-1.54%	-0.19%	20.97%			
Averages																			
		Total	Trans-mission	Distribution	Market Resources	Corp & other					Trans-mission	Distribut'n	Market Resources	Corp & other					
											As %	As %	As %	As %					
Questar	2003	339830	71096	51385	210345	7004					20.92%	15.12%	61.90%	2.06%					100.00%
Corp.	2002	274195	66185	70354	130444	7212					24.14%	25.66%	47.57%	2.63%					100.00%
Operating	2001	274107	59322	58382	159341	-2938					21.64%	21.30%	58.13%	-1.07%					100.00%
Income	2000	241433	56853	56420	128160						23.55%	23.37%	53.08%	0.00%					100.00%
Averages											22.56%	21.36%	55.17%	0.90%					

Dividend Yields for Proxy company Candidates																			
Monthly High and Low Stock Prices																			
		November		December		January		February		March		April		Avg	Annual	Yield			
		2003		2003		2004		2004		2004		2004							
Company	Tkr	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	Price	Divd				
Enterprise Products Partners	EPD	23.64	20.76	24.98	22.25	24.72	23.00	23.32	21.75	23.60	22.25	23.84	20.49	22.88	1.49	6.51%			
Gulfterra Energy	GTM	40.59	37.91	42.93	39.59	42.82	40.64	41.74	38.42	42.88	40.51	43.00	37.21	40.69	2.84	6.98%			
Kinder Morgan Energy Partners LP	KMP	44.95	42.63	49.95	43.77	49.11	46.03	47.43	44.00	46.33	43.55	45.39	40.50	45.30	2.72	6.00%			
Northern Border Partners LP	NBP	42.00	36.00	39.38	37.50	40.40	38.10	40.59	38.90	42.60	39.80	42.60	38.23	39.68	3.20	8.07%			
Kinder Morgan Inc.	KMI	55.50	51.72	59.27	54.37	62.50	58.37	61.89	59.15	64.60	60.87	64.25	60.00	59.37	2.25	3.79%			
El Paso Corp.	EP	7.49	5.97	8.29	6.46	9.88	8.03	9.15	6.86	7.80	6.57	7.30	6.74	7.55	0.16	2.12%			
The Williams Companies	WMB	10.45	8.81	10.08	9.42	11.47	9.75	10.50	8.70	10.08	8.92	10.60	9.57	9.86	0.04	0.41%			
Questar Corp.	STR	34.22	31.80	35.50	34.05	37.08	34.76	36.89	34.40	36.50	33.82	37.00	34.51	35.04	0.82	2.34%			
National Fuel Gas	NFG	23.90	22.76	25.01	23.16	25.74	24.40	26.48	24.75	26.25	24.26	25.20	23.75	24.64	1.08	4.38%			
Equitable Resources	EQT	41.60	39.95	43.42	41.34	44.92	42.34	44.86	42.50	44.45	42.10	47.80	43.99	43.27	1.20	2.77%			
Yield Plus Growth Using IBES Earnings Growth and GDP Growth Forecasts																			
For all companies																			
				Second				Alternative Calculation using Continuous and Discrete Yields											
				Stage	Weighted	Adjusted	Yield					Yield							
		Dividend	IBES	Growth	Average	Dividend	Plus			Continuou	Discrete	Average	Plus						
		Yield	Median	(GDP)	Growth	Yield	Growth			Yield	Yield	Yield	Growth						
Enterprise Products Partners	EPD	6.51%	10.00%	6.18%	8.73%	6.80%	15.52%			6.51%	7.08%	6.80%	15.52%						
Gulfterra Energy	GTM	6.98%	8.00%	6.18%	7.39%	7.24%	14.63%			6.98%	7.50%	7.24%	14.63%						
Kinder Morgan Energy Partners LP	KMP	6.00%	9.00%	6.18%	8.06%	6.25%	14.31%			6.00%	6.49%	6.25%	14.31%						
Northern Border Partners LP	NBP	8.07%	3.00%	6.18%	4.06%	8.23%	12.29%			8.07%	8.39%	8.23%	12.29%						
Kinder Morgan Inc.	KMI	3.79%	12.00%	6.18%	10.06%	3.98%	14.04%			3.79%	4.17%	3.98%	14.04%						
El Paso Corp.	EP	2.12%	8.00%	6.18%	7.39%	2.20%	9.59%			2.12%	2.28%	2.20%	9.59%						
The Williams Companies	WMB	0.41%	5.00%	6.18%	5.39%	0.42%	5.81%			0.41%	0.43%	0.42%	5.81%						
Questar Corp.	STR	2.34%	8.00%	6.18%	7.39%	2.43%	9.82%			2.34%	2.51%	2.43%	9.82%						

National Fuel Gas	NFG	4.38%	5.00%	6.18%	5.39%	4.50%	9.89%			4.38%	4.62%	4.50%	9.89%			
Equitable Resources	EQT	2.77%	10.00%	6.18%	8.73%	2.89%	11.62%			2.77%	3.02%	2.89%	11.62%			
Mean		4.34%	7.80%				11.75%						11.75%			
Median							11.96%						11.96%			
High							15.52%						15.52%			
Low							5.81%						5.81%			
Source: IBES Report of 4/15/04																
GDP Growth Forecast from EIA of 1/2004, and Global Insight (formerly DRI -WEFA) of 11/2002																
For companies EPD, GTM, KMP, KMI, & NBP (Company group)																
Mean		6.27%	8.40%				14.16%						14.16%			
Median							14.31%						14.31%			
High							15.52%						15.52%			
Low							12.29%						12.29%			
For companies KMI, EP, WMB, STR, NFG, & EQT (Williston group survivors)																
Mean		2.64%	8.00%				10.13%						10.13%			
Median							9.86%						9.86%			
High							14.04%						14.04%			
Low							5.81%						5.81%			
For companies EP & WMB																
Mean		1.26%	6.50%				7.70%						7.70%			
Median							7.70%						7.70%			
High							9.59%						9.59%			
Low							5.81%						5.81%			

For companies STR, NFG, EQT																	
Mean		3.17%	7.67%					10.45%						10.45%			
Median								9.89%						9.89%			
High								11.62%						11.62%			
Low								9.82%						9.82%			