

NON-CONFIDENTIAL

1 **Request IR-1:**

2

3 **With respect to Ms. McShane's evidence on business risk:**

4

5 (a) **On page 3 Ms. McShane mentions that Maritime Link is project financed, please**
6 **indicate whether any other assets can be owned within NSPML and as a result**
7 **whether the Maritime Link can be regarded as ring fenced.**

8

9 (b) **Please indicate what Canadian utilities regulated under a utility act can be regarded**
10 **as project financed and ring fenced like the Maritime Link.**

11

12 **Response IR-1:**

13

14 (a) NSPML is a special purpose entity which will only hold assets related to the Maritime
15 Link Project and can be regarded as ring-fenced. Please see section 4.9 of the
16 Application.

17

18 (b) Alliance Canada and Maritimes & Northeast Pipeline, both of which are regulated under
19 the National Energy Board Act, were project-financed and can be considered to be
20 ring fenced.

NON-CONFIDENTIAL

1 **Request IR-2:**

2
3 **With respect to Ms. McShane's evidence page 3:**

4
5 **(a) Please confirm that the approved tolls for Maritime Link can be recovered by**
6 **NSPML in its cost of service according to Section 6 of the Maritime Link Act.**

7
8 **(b) Please indicate all risk factors, other than the cost of debt, that could cause the**
9 **Maritime Link to *not* recover its approved costs.**

10
11 **(c) Please indicate who is at risk for project costs exceeding those forecast and the debt**
12 **component approved for the Federal Government's loan guarantee, that is, explain**
13 **clearly the implications for project cost over runs.**

14
15 **(d) Please discuss in detail the use of Alliance as a comparator and who was at risk for**
16 **project cost over runs and how it affected Alliance's allowed and earned ROE.**

17
18 **Response IR-2:**

19
20 **(a) The regulations made pursuant to Section 6 of the Maritime Link Act provide for**
21 **NSMPL to recover the approved costs of the Maritime Link Project through a toll**
22 **charged to NS Power.**

23
24 **(b) The existing regulations provide for NSPML to recover the approved costs of the**
25 **Maritime Link Project. While all prudently incurred costs should be recovered from**
26 **ratepayers, there is no guarantee that over the life of the project, all incurred costs will be**
27 **approved for recovery.**

NON-CONFIDENTIAL

- 1 (c) If project costs exceed the forecasts, and those costs are found to have been prudently
2 incurred by the UARB, they will be the responsibility of ratepayers. However, there is a
3 risk that shareholders will bear responsibility for costs that exceed forecasts.
4
- 5 (d) Alliance was referenced as a comparator simply to demonstrate that the proposed
6 common equity ratio of NSPML is in line with capital structures adopted for project-
7 financed regulated infrastructure projects in Canada that have been able, in conjunction
8 with a combination of long-term contracts with creditworthy shippers and strong debt
9 covenants (for example debt service coverage ratio minimums, debt amortization,
10 limitations on distributions to equity holders) to achieve investment-grade debt ratings.
11 With respect to the impact of cost overruns on the allowed and actual ROE of Alliance,
12 please see response to NSPML (Booth) IR 5 (a), part (f) as related to Alliance.

NON-CONFIDENTIAL

1 **Request IR-3:**

2
3 **With respect to Ms. McShane's evidence page 4:**

4
5 **(a) Please indicate the extent of deferral accounts available to Maritime Link and what**
6 **costs other than financial costs such as depreciation, interest and net income are not**
7 **covered by deferral accounts.**

8
9 **(b) Please indicate any risk factors that Ms. McShane would put forward to justify the**
10 **Maritime Link not being regarded as a standard transmission project apart from its**
11 **size.**

12
13 **(c) With respect to the cost of debt that NSPML is responsible for without any "true**
14 **up" please confirm that the project has a forecast cost of debt of 4.0% and**

15
16 **(i) indicate the current cost of debt for the Maritime Link with the Federal**
17 **Government guarantee;**

18
19 **(ii) discuss in detail what interest rate hedging instruments, such as forward rate**
20 **agreements, have been examined to lock in the future cost of debt for the**
21 **project and the all in cost involved.**

22
23 **(iii) Please confirm that it might be regarded as imprudent for NSPML not to**
24 **consider interest rate hedging instruments given the size of the debt**
25 **financing needed for the project and the 4.0% rate included in the revenue**
26 **requirement.**

NON-CONFIDENTIAL

1 Response IR-3:

2
3 (a) NSPML's current application is for the approval of the Maritime Link Project, not for a
4 revenue requirement or rates. As such, NSPML is not applying for any deferral accounts
5 related to specific elements of a revenue requirement.

6
7 (b) In contrast to the typical transmission project which is part of an integrated system, the
8 Maritime Link Project is a stand-alone, single purpose project with an extended
9 construction period during which NSPML will be at risk for the construction costs with
10 no cash flows from rates. In addition, in contrast to the typical above ground transmission
11 facilities, the Maritime Link Project includes HVDC converter stations and associated
12 equipment such as grounding facilities as well as a 180 km undersea cable connection.

13
14 (c) (i) The current estimate for the cost of debt with the FLG taken into consideration is
15 4 percent. For a detailed breakdown of that rate estimate please refer to CA IR-6
16 part 2.

17
18 (ii) In accordance with the FLG term sheet, NSPML will be examining all reasonable
19 options to optimize the cost of financing. Per Section 2.3 of the FLG Term Sheet,
20 "As may be required by the nature of the Financing, a hedging program shall be
21 put in place for each Borrower at Financial Close. In order to ensure certainty in
22 the cost of the Financing for each of the Projects, any interest expense risk will be
23 hedged. The Project hedging principles will be agreed to with the Guarantor prior
24 to Financial Close".

25
26 (iii) The project hedging principles will be agreed to with the Government of Canada
27 as Guarantor prior to Financial Close.

NON-CONFIDENTIAL

1 **Request IR-4:**

2

3 **With respect to Ms. McShane's evidence on capital structure page 7:**

4

5 (a) **In discussing the Alberta transmission facilities' fundamental capital structure of**
6 **35% please confirm that these are not project financed and Canadian Utilities Ltd**
7 **has to access financial markets "constantly" to finance its utility operations from**
8 **within a corporate shell.**

9

10 (b) **Please confirm that Hydro One Networks is not a pure transmission operator and**
11 **also has a distribution component in rural Ontario.**

12

13 **Response IR-4:**

14

15 (a) The Alberta electricity transmission facilities are not project financed. Canadian Utilities
16 Limited, which is the parent company of CU Inc., accesses the public equity markets as
17 required to finance the utility operations of CU Inc. CU Inc. is the parent company of
18 ATCO Electric Ltd., the Alberta Transmission Facilities Owner. CU Inc. accesses the
19 debt and preferred equity markets on behalf of ATCO Electric Ltd., as well as the other
20 Alberta-based utility operations.

21

22 (b) Confirmed.

NON-CONFIDENTIAL

1 **Request IR-5:**

2
3 **With respect to Ms. McShane's evidence on project financed pipelines page 7:**

4
5 **(a) For Alliance and M&NP please provide details on the following:**

6
7 **(i) Allowed common equity ratio at inception.**

8
9 **(ii) Allowed ROE and the term of the ROE.**

10
11 **(iii) The average debt rating of the shippers at inception.**

12
13 **(iv) The existence of any backstop agreements.**

14
15 **(v) The size of the resource backstopping the energy on the pipeline.**

16
17 **(vi) The responsibility for cost over-runs in construction.**

18
19 **(vii) The existence of any true ups in cost recovery.**

20
21 **(viii) The allowed versus actual ROE since certification of the pipeline.**

22
23 **(b) Please confirm that the NEB allowed the mainline gas distributors a 30% common**
24 **equity ratio and the liquids pipelines a 45% common equity in its 1994 multi-**
25 **pipeline decision based on their business risk at that time.**

NON-CONFIDENTIAL

1 (c) **Please confirm that the NEB has increased the common equity ratio of the**
2 **TransCanada Mainline in response to its increased business risk and decline in**
3 **throughput and settlements with both the Mainline and other export pipelines have**
4 **subsequently moved the common equity ratio to 40%.**

5
6 Response IR-5:

7
8 (a) With respect to Alliance:

9
10 (i) The allowed equity ratio at inception was 30 percent.

11
12 (ii) The allowed ROE was 11.3 percent for a period of 15 years.

13
14 (iii) According to DBRS' November 2001 Rating Report for Alliance, the composite
15 rating of the shippers at that time (a year after it commenced commercial
16 operations) was considered to be equivalent to BBB (high)

17
18 (iv) Ms. McShane is not aware of any backstop arrangements with respect to Alliance.
19 The pipeline initially had 15-year ship or pay contracts with 37 shippers covering
20 98 percent of the pipeline's capacity.

21
22 (v) The same DBRS report referenced in part (c) above stated that "According to
23 National Energy Board estimates, remaining gas reserves in the western Canadian
24 sedimentary basin (including undiscovered reserves) exceed 200 trillion cubic feet
25 versus actual annual production of about 6.0 trillion cubic feet in western Canada
26 in 2000, which is *ample to support strong throughput volumes.*"

27
28 (vi) Cost overruns were borne by shippers. However, the allowed ROE increased or
29 decreased from a target 12 percent to a maximum 14 percent or minimum

NON-CONFIDENTIAL

1 10 percent, based on the extent to which the actual construction costs were less
2 than or greater than the applied-for construction costs. The actual allowed ROE as
3 noted in response to (a) above is 11.3 percent.

4
5 (vii) Alliance is a full cost of service pipeline, that is, it recovers from its shippers
6 100 percent of the actual costs that it incurs.

7
8 (viii) Alliance does not file reports with the NEB to show its actual regulated pipeline
9 returns. However, as a full cost of service pipeline, Alliance's actual regulated
10 pipeline ROEs should be the same as its allowed ROE of 11.3 percent.

11
12 With respect to M&NP:

13
14 (i) The actual equity ratio at inception was 25 percent.

15
16 (ii) The allowed ROE was 13.0 percent for a period of five years.

17
18 (iii) According to the June 1999 CBRS Credit Analysis for M&NP, 85 percent of the
19 Firm Service Agreements were with shippers rated A (low) or better.

20
21 (iv) In addition to the Firm Service Agreements with shippers, most with terms of 10-
22 20 years, M&NP had a pipeline utilization agreement that required the Sable
23 Island producers to either utilize the pipeline or compensate M&NP and a
24 backstop provided by Mobil Canada whose intent was for Mobil to subscribe and
25 pay for unsubscribed capacity up to a specified maximum.

26
27 (v) The key gas supply supporting M&NP was primarily the Sable Offshore Energy
28 Project, with six fields with an expected quantity of raw recoverable gas of 84.3

NON-CONFIDENTIAL

1 billion cubic metres at the time of the 1997 Joint Public Review Panel Report:
2 Sable Gas Projects.

3
4 (vi) Shippers were responsible for prudently incurred costs, including those that
5 exceeded initial estimates.

6
7 (vii) M&NP was regulated on a forward test year when it went into commercial
8 operation. At the time, it had deferral accounts for interruptible revenues, interest
9 expense, provincial discounts, toll hearing costs and legislative/assessment
10 changes to taxes.

11
12 (viii) The allowed and actual ROEs as available are provided below.

Year	Allowed Return on Equity	Actual Return on Equity
2001	13.00%	13.00%
2002	13.00%	12.95%
2003	13.00%	12.31%
2004	13.00%	13.75%
2005	13.00%	14.31%
2006	13.00%	14.68%
2007	12.00%	12.15%
2008	11.66%	11.35%
	Allowed Return on Rate Base	Actual Return on Rate Base
2009	7.59%	8.27%
2010	8.31%	8.35%
2011	8.51%	8.59%
Note: Negotiated settlements for 2009 to 2011 did not specify ROE or Equity Ratio; only Return on Rate Base		

13

Maritime Link Project (NSUARB ML-2013-01)
NSPML Responses to UARB - Booth Information Requests

NON-CONFIDENTIAL

1 (b) Confirmed.

2

3 (c) Confirmed that the NEB increased TCPL's equity ratio to 33 percent (RH-4-2001, 2001)
4 and then to 36 percent (RH-2-2004 Phase II, 2005) due to increased business risk. TCPL
5 negotiated an equity ratio of 40 percent in 2007 (Order TH-06-2007). Foothills (2010),
6 NGTL (2010), and Westcoast (2011) have also negotiated 40 percent common equity
7 ratios.

NON-CONFIDENTIAL

1 **Request IR-6:**

2

3 **With respect to Ms. McShane's evidence on ROE page 10:**

4

5 (a) **Please confirm that NSPI would not have agreed to an ROE of 9.0-9.2% if it had**
6 **regarded that ROE to be "unfair and unreasonable."**

7

8 (b) **Please confirm that before the BCUC in December 2012 Ms. McShane provided a**
9 **risk ranking of utility operations in Canada and provide both the generic ranking as**
10 **well as the "names" that she agreed would fit that ranking. Also please confirm that**
11 **Ms. McShane regarded NSPI as an integrated electric utility and was riskier than**
12 **an average utility due to its generation.**

13

14 (c) **Please confirm that Ms. McShane regarded electric transmission assets as the lowest**
15 **risk utility asset class in Canada.**

16

17 (d) **Please confirm that if Ms. McShane judges transmission assets to be lower risk than**
18 **those of an integrated electric utility it is perfectly reasonable for NSPI to request**
19 **the same ROE on a lower common equity ratio for transmission assets than for its**
20 **integrated operations. That is, the lower risk of transmission assets is reflected in**
21 **their lower common equity ratio rather than a lower allowed ROE.**

NON-CONFIDENTIAL

1 Response IR-6:

2

3 (a) Ms. McShane considers that NS Power would have concluded that the agreed-to ROEs
4 were reasonable within the context of the entire negotiated settlements, which are
5 typically viewed as packages that involve trade-offs.

6

7 (b) Confirmed, as this was one of the BCUC's minimum filing requirements for its generic
8 cost of capital proceeding. The generic relative risk rankings were, in order, electricity
9 transmission utilities, electricity distribution utilities, natural gas distribution utilities and
10 vertically integrated electric utilities. Ms. McShane indicated that these relative risk
11 rankings were generic in nature, that is, based on fundamental characteristics that are
12 generally common to utilities in each category. Her BC testimony stated (page 44) "They
13 should not be interpreted to mean, for example, that every utility categorized as an
14 electric distribution utility is of lower business risk than every gas distribution utility, or
15 that every gas distribution utility is of lower business risk than every vertically integrated
16 utility." Ms. McShane specified ATCO Electric Transmission and AltaLink as electricity
17 transmission utilities, FortisAlberta and ATCO Electric Distribution as electric
18 distribution utilities, ATCO Gas, Enbridge Gas Distribution, FortisBC Energy Inc. and
19 Union Gas as gas distribution utilities. Confirmed that Ms. McShane considered NS
20 Power to be an integrated electric utility and higher business risk than the average
21 Canadian utility, partly due to its ownership and operation of generating facilities.

22

23 (c) Not confirmed that Ms. McShane regarded electric transmission assets as the lowest risk
24 utility asset class in Canada. She considered them to be the lowest risk generically of
25 those that she was asked to rank.

26

27 (d) For clarification, the Maritime Link Project is an application by NSPML, not NS Power.
28 While generically, transmission operations would be considered lower risk than vertically
29 integrated utility operations, typically electricity transmission assets are a combination of
30 operating assets and assets under construction. In the case of the Maritime Link Project,

NON-CONFIDENTIAL

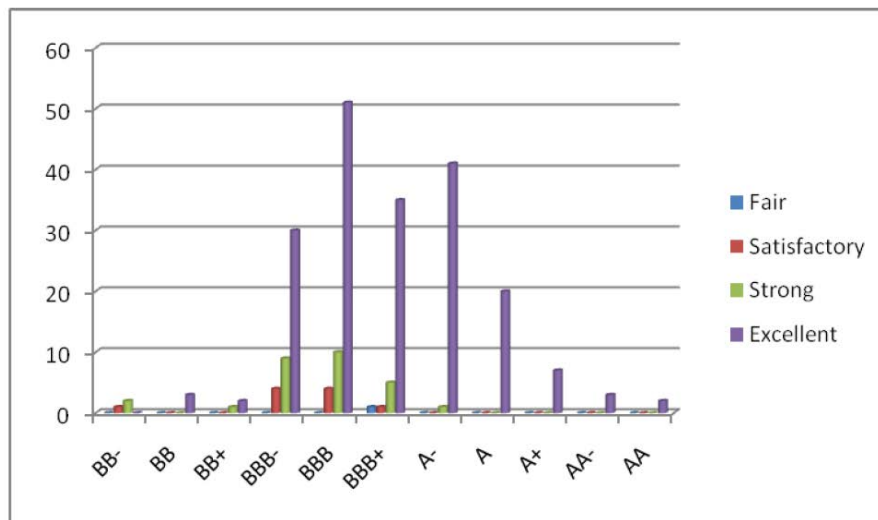
1 the ROE formula being requested is for an extended construction phase with no ongoing
2 operational activity during this period. The overall equity return (combination of equity
3 ratio and ROE) required by the shareholder would be similar to the overall equity return
4 required for a vertically integrated utility like NS Power which is in commercial
5 operation. The circumstances of the Alberta transmission utilities undertaking major
6 extended period construction projects are informative in this regard. As Ms. McShane
7 indicated in her Opinion, the common equity ratios of the two Alberta utilities
8 undertaking major electricity transmission projects (AltaLink and ATCO Electric) are
9 two percentage points higher than the other Alberta Transmission Facility Owners (37
10 percent versus 35 percent). AltaLink and ATCO Electric's transmission assets are a
11 combination of CWIP and operating assets. In AltaLink's case, for 2014, approximately
12 40 percent of its assets are CWIP and 60 percent are operating assets. If the standard (that
13 is, no major extended construction projects) common equity ratio for electricity
14 transmission operations in Alberta is 35 percent, then the implied common equity ratio
15 for AltaLink's CWIP alone is significantly higher, at approximately 40 percent. Further,
16 in contrast to the Maritime Link Project, which will receive no revenue from rates until
17 the project begins commercial operation, AltaLink's CWIP related to its major
18 transmission projects earns a cash return from rates.

NON-CONFIDENTIAL

1 **Request IR-7:**

2
3 **With respect to Ms. McShane's evidence on US comparators page 11 on:**

- 4
5 (a) **Please indicate all Canadian jurisdictions that have accepted the use of US estimates**
6 **of allowed ROEs as being identical to Canadian, that is, without making any**
7 **adjustments.**
8
9 (b) **Please confirm that regulators such as the BCUC, NEB, the Regie and the Board of**
10 **Commissioners of Newfoundland and Labrador have either rejected such**
11 **comparisons or suggested that adjustments have to be made.**
12
13 (c) **Please provide an updated graph similar to the following one provided by Ms.**
14 **McShane in answer to IOL information request #197d in an Enbridge Line 9**
15 **hearing before the NEB in 2010. This shows the distribution of S&P business risk**
16 **rankings for US utilities by their respective bond rating.**
17



NON-CONFIDENTIAL

1 **(d) Please confirm that Ms. McShane is aware of the following quote from the BCUC**
2 **evaluation of Ms. McShane's US DCF return evidence:**
3

The Commission Panel agrees with Dr Booth that "significant risk adjustments" to US utility data are required in this instance to recognize the fact that TGI possesses a full array of deferral mechanisms which give it more certainty that it will, in the short-term, earn its allowed return than the *Value Line* US natural gas LDCs enjoy. The Commission Panel notes Dr. Booth's suggestion that the risk premium required by US utilities is between 90 and 100 basis points more than utilities in Canada require may set an upper limit on the necessary adjustment. Accordingly, the Commission Panel will reduce its DCF estimate by between 50 and 100 basis points to a range of 9.0 percent to 10.0 percent, before any allowance for financing flexibility.

4
5
6 Response IR-7:

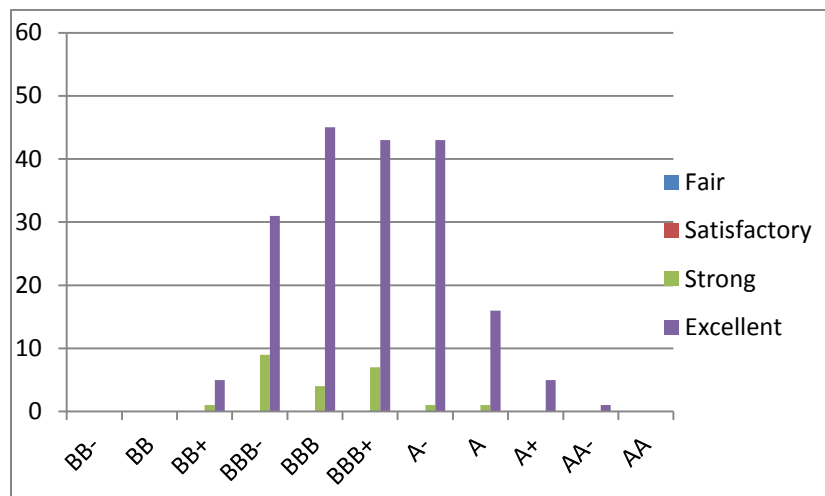
7
8 (a) The Ontario Energy Board, in its 2009 *Report of the Board on the Cost of Capital for*
9 *Ontario's Regulated Utilities*, relied on cost of equity estimates made using U.S. proxy
10 companies without making adjustments. In both its 2009 and 2011 Generic Cost of
11 Capital Decision, the Alberta Utilities Commission gave weight to DCF analyses applied
12 to U.S. utilities without any indication that it considered a downward adjustment was
13 required due to higher risk of the U.S. utilities compared to the Alberta utilities.

14
15 (b) The BCUC in its 2009 cost of capital decision for Fortis BC Energy Inc. (FEI) considered
16 that adjustments were required; please see response to part (d) below. The
17 Newfoundland and Labrador PUB in its 2009 decision for Newfoundland Power
18 considered that the U.S. proxies were riskier than Newfoundland Power and did not rely
19 on estimates for U.S. utilities. The Régie in its 2012 decision for Gaz Métro considered
20 that it had insufficient evidence to conclude that environments, and their impact on the
21 resulting opportunities for investors and for the regulated-rate companies, are
22 comparable. Despite this broad finding, the Régie typically gives 50 percent weight to

NON-CONFIDENTIAL

1 U.S. market return data in arriving at its estimate of the market risk premium in its
2 application of the Capital Asset Pricing Model. The NEB in its March 2009 RH-1-2008
3 decision for Trans Québec & Maritimes Pipeline Inc. (TQM) stated (page 71) that “In
4 light of the Board's views expressed above on the integration of U.S. and Canadian
5 financial markets, the problems with comparisons to either Canadian negotiated or
6 litigated returns, and the Board’s view that risk differences between Canada and the U.S.
7 can be understood and accounted for, the Board is of the view that U.S. comparisons are
8 very informative for determining a fair return for TQM for 2007 and 2008.”
9

10 (c) The requested graph is provided below.
11



12
13
14 (d) Ms. McShane is aware of the statement but disagrees with the BCUC’s conclusion. In
15 Ms. McShane’s opinion, the reduction to the ROE double counts for any potentially
16 higher business risk faced by the U.S. utilities, as to the extent that the U.S. utilities’
17 business risk is higher, it is offset by higher common equity ratios than allowed for FEI
18 (close to 50 percent compared to FEI’s 40 percent).

NON-CONFIDENTIAL

1 **Request IR-8:**

2
3 **With respect to Ms. McShane's evidence on an Automatic ROE formula page 15 on:**

4
5 **(a) Please indicate all Canadian hearings since 2010 where Ms. McShane has**
6 **recommended the use of an automatic ROE formula.**

7
8 **(b) Please confirm that Ms. McShane disavowed the current use of an ROE adjustment**
9 **formula before the BCUC in December 2012.**

10
11 **(c) Please indicate why Ms. McShane would recommend an automatic ROE formula**
12 **for the Maritime Link, rather than a fixed rate. Is it her judgment that linking the**
13 **ROE to future corporate bond yields accurately estimates the future fair and**
14 **reasonable ROE?**

15
16 **(d) On page 19 Ms. McShane indicates that currently long term bond yields are at**
17 **historically low levels with little correlation with the cost of equity. If this is so why**
18 **should the allowed ROE increase by 75% of the increase in the long term interest**
19 **rate from the current historically low level that is uncorrelated with the cost of**
20 **equity?**

21
22 **(e) Please provide the allowed ROE for NSPI for the last 20 years and the**
23 **corresponding long term Canadian bond yield forecast and utility spread.**

24
25 **(f) Please provide the allowed ROE that would result from Ms. McShane's suggested**
26 **ROE formula back tested for the last 20 years with NSPI's allowed ROE.**

NON-CONFIDENTIAL

- 1 **(g) Before the NEB in 2010 for an Enbridge Line 9 hearing and before the Regie for a**
2 **Gazifere hearing Ms. McShane recommended a different ROE formula. Please**
3 **provide the NEB data that she used to back test her recommended formula at that**
4 **time and update the data and the allowed ROE resulting from her formula for the**
5 **period ending in 2013.**
- 6
- 7 **(h) Please compare the back testing of her 2010 Line 9 automatic ROE formula with**
8 **both her current recommended formula and the actual NEB ROE formula since**
9 **1994 assuming that the starting NEB allowed ROE in 1994 was fair and reasonable.**
- 10
- 11 **(i) Please estimate the allowed ROE emanating from the actual NEB formula, Ms.**
12 **McShane's 2010 recommended formula and Ms. McShane's current recommended**
13 **formula for each year from 2013 to 2017.**
- 14
- 15 **(j) Please provide the source documents for the interest rate forecasts on page 44.**
- 16
- 17 **(k) Please indicate NSPI's allowed ROE when the forecast A bond yield was**
18 **approximately 5.60%.**

19
20 Response IR-8:

- 21
- 22 **(a) Ms. McShane recommended a formula for Gazifère Inc. in its 2010 rates application.**
- 23
- 24 **(b) Ms. McShane did not recommend a formula in the referenced proceeding. Her evidence**
25 **was that, in light of the persistently unsettled capital markets and the unstable**
26 **relationships between the utility cost of equity and Government bond yields, the**
27 **construction of an automatic adjustment mechanism for return on equity that would**
28 **successfully capture prospective changes in the utility cost of equity would be difficult.**
- 29

NON-CONFIDENTIAL

- 1 (c) As indicated at page 2 of Ms. McShane's Opinion, she was asked to assess the
2 reasonableness of NSPML's proposals, including the starting ROE of 9.1 percent and the
3 formula. A fixed ROE based on the forecast average level of interest rates during the
4 construction period and first year of commercial operation was considered. However, as
5 the higher interest rates that are currently forecast may not materialize, NSPML is
6 proposing instead a lower starting ROE in conjunction with a formula. As the cost of
7 equity and the fair ROE are a function of many factors, it is unlikely that any simple
8 formula can accurately estimate them on a year-to-year basis. However, Ms. McShane
9 would expect a company's cost of equity to be linked to its cost of debt, although the
10 specific relationship is not likely to be constant over time. For clarification, please note
11 that this formulaic approach is being requested for the construction period and first full
12 year of operation only.
- 13
- 14 (d) To clarify, the cited statement from Ms. McShane's Opinion was referencing the level of
15 long-term Government of Canada bond yields, not the corporate cost of debt. Although
16 the available empirical evidence suggests that the sensitivity of the utility cost of equity
17 to utility bond yields is less than the 75 percent proposed under the NSPML formula, as
18 Ms. McShane indicated in her Opinion, the 75 percent sensitivity factor is justified by the
19 relatively low initial ROE and the indicated resulting ROEs at the levels of interest rates
20 forecast for the construction period.
- 21
- 22 (e) The allowed ROEs along with the test years, decision dates and whether it was a
23 settlement are provided in the table below.
- 24

Maritime Link Project (NSUARB ML-2013-01)
NSPML Responses to UARB - Booth Information Requests

NON-CONFIDENTIAL

Test Period	Date of Decision	Allowed ROE	Settlement	Forecast Long-term Canada Bond Yield	A-rated Utility Bond Yield	
					Spread	Forecast ^{1/}
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1993	March 1993	11.5% -12.0%	no	8.6	1.26	9.8
1996	March 1996	10.5%-11.0%	no	7.8	0.74	8.6
2002	October 2002	9.9%-10.4%	no	5.9	1.36	7.3
2005	March 2005	9.3% -9.8%	no	5.1	0.96	6.0
2006	March 2006	9.3%-9.8%	no	4.5	0.89	5.4
2007	February 2007	9.3% - 9.8%	yes	4.2	0.90	5.1
2009	November 2008	9.1% -9.6%	yes	4.2	2.22	6.4
2012	November 2011	9.1% - 9.5%	yes	3.1	1.59	4.7
2013-14	December 2012	8.75% -9.25%	yes	2.6	1.48	4.1
^{1/} Columns (5) plus (6)						

1
2 With respect to the requested long-term Canadian bond yield forecast, the UARB's
3 decisions do specify a forecast on which it relied. Consequently, the forecasts provided
4 are based on Consensus Economics, *Consensus Forecasts* from the month prior to the
5 UARB decision. They reflect the average of the 3-and 12-months forward forecasts of the
6 10-year Canada bond yield to which the spread between the 10-year and long-term
7 (30 year) prevailing during the month and year of the respective *Consensus Forecasts* is
8 added. For all years except 1993 and 1996, the A utility spreads represent the difference
9 between the yield on the Bloomberg 30-year Canadian A-rated Utility Bond Index
10 prevailing during the month of the Consensus Forecast used to derive the 30-year Canada
11 bond yield forecasts. The 1993 and 1996 spreads are based on the now discontinued

NON-CONFIDENTIAL

1 CBRS A rated utility bond index. For purposes of responding to part (f), the A-rated
2 utility bond yield spread was added to the forecast 30-year Canada bond yield to derive a
3 forecast A-rated utility bond yield.

4
5 (f) Starting with NSPML's proposed ROE of 9.1 percent and starting forecast A-rated utility
6 bond yield of 4.2 percent, the indicated formula ROEs for each of the test periods in the
7 table above, along with the corresponding forecast A-rated utility bond yields, would be
8 as follows:
9

Test Period	A-rated Utility Bond Yield	Formula Indicated ROE
1993	10.0	13.5
1996	8.6	12.4
2002	7.3	11.4
2005	6.0	10.5
2006	5.4	10.0
2007	5.1	9.7
2009	6.4	10.7
2012	4.7	9.4
2013-14	4.1	9.0

10
11 (g) Please refer to Attachment 1, the backcasting schedule filed in the 2010 Gazifère
12 proceeding as updated through 2013.

13
14 (h) The average allowed ROE with the NEB formula from 1996-2013 was 9.2 percent (ROE
15 of 7.25 percent in 2013). Had NSPML's proposed formula been adopted by the NEB and
16 applied to its 1995 12.25 percent starting ROE, the average allowed ROE from 1996 to
17 2013 would have been 9.6 percent (2013 ROE of 8 percent). The average allowed ROE

NON-CONFIDENTIAL

1 under Ms. McShane's 2010 formula over the same period would have been 10.5 percent
2 (ROE of 9.4 percent in 2013).

- 3
- 4 (i) The table below shows what each of the formulas would produce based on the estimates
5 provided in Ms. McShane's Schedule 5 (page 44 of her Opinion) assuming an initial
6 ROE of 9.1 percent at a forecast A-rated utility bond yield of 4.2 percent, which
7 corresponds to a forecast 2.8 percent long-term Government of Canada bond yield.

8

	Forecast Bond Yields		Formula ROEs		
	Long-Term Canada	A-Rated Utility	NEB	McShane 2010	NSPML Requested
Benchmarks	2.8	4.2	9.1	9.1	9.1
2013	2.8	4.2	9.1	9.1	9.1
2014	3.2	4.6	9.4	9.3	9.4
2015	4.1	5.5	10.1	9.7	10.1
2106	4.7	6.1	10.5	10.0	10.5
2017	5.0	6.4	10.7	10.2	10.7

- 9
- 10 (j) The documents were provided in response to CA IR-3.

- 11
- 12 (k) Based on the estimates provided in response to part (e) above, the average forecast
13 A-rated utility bond yield for 2002-2013/14 was 5.6 percent. The average of NS Power's
14 allowed ROEs for the corresponding period was 9.5 percent.

MULTI-PIPELINE AND REVISED FORMULA PIPELINE ROEs

	Forecast Long Canada Underlying NEB ROE ^{1/}	Change in Forecast Long Canada From 1995	NEB ROE per RH-2-94	Sept/Oct Corporate Yield Spread ^{1/}	Change in Yield Spread from 1995	50% of Change in Long Canadas	50% of Change in Corporate Bond Yields	ROE Incorporating Change in Both Long Canadas and Corporate Bond Yields
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1994								
1995	9.25		12.25	0.71				
1996	8.03	-1.22	11.25	0.42	-0.29	-0.61	-0.14	11.50
1997	7.14	-2.11	10.67	0.27	-0.45	-1.06	-0.22	10.97
1998	6.53	-2.72	10.21	0.28	-0.43	-1.36	-0.21	10.68
1999	5.69	-3.56	9.58	0.99	0.27	-1.78	0.14	10.61
2000	6.12	-3.13	9.90	0.94	0.23	-1.57	0.11	10.80
2001	5.73	-3.52	9.61	1.56	0.84	-1.76	0.42	10.91
2002	5.63	-3.62	9.53	1.31	0.60	-1.81	0.30	10.74
2003	5.98	-3.27	9.79	1.32	0.61	-1.64	0.31	10.92
2004	5.68	-3.57	9.56	0.97	0.26	-1.79	0.13	10.59
2005	5.55	-3.70	9.46	0.98	0.26	-1.85	0.13	10.53
2006	4.78	-4.47	8.88	0.96	0.25	-2.24	0.13	10.14
2007	4.22	-5.03	8.46	1.07	0.36	-2.52	0.18	9.91
2008	4.55	-4.70	8.71	1.18	0.47	-2.35	0.23	10.13
2009	4.36	-4.89	8.57	2.58	1.87	-2.45	0.93	10.74
2010	4.30	-4.95	8.52	1.84	1.13	-2.48	0.56	10.34
2011	3.72	-5.53	8.08	1.68	0.96	-2.77	0.48	9.97
2012	3.06	-6.19	7.58	1.79	1.07	-3.10	0.54	9.69
2013	2.59	-6.66	7.23	1.70	0.98	-3.33	0.49	9.41
Average								
1996-2009			9.6					10.7
1996-2013			9.2					10.5

^{1/} Spread represents differential between Dex A rated Long-term Corporate Bond Index and benchmark Government of Canada bond yield.

Source: NEB Decisions, Bank of Canada, PC Bond Analytics (TSX Group Inc.)

NON-CONFIDENTIAL

1 **Request IR-9:**

2
3 **With respect to Ms. McShane's evidence on DCF estimates Appendix 4.02:**

- 4
- 5 (a) **Please confirm that Ms. McShane's DCF estimates are all derived from US firms**
6 **and there is no adjustment for the fact that Maritime Link is a Canadian company.**
7
- 8 (b) **Please confirm that Ms. McShane's normal risk premium estimates are based on the**
9 **long Canada bond yield and provide the current long bond yield for US Treasuries**
10 **and Canada.**
11
- 12 (c) **Please provide the annual earnings per share, dividends per share and book value**
13 **per share for each of the companies listed in B-1 since 1990.**
14
- 15 (d) **Please provide the annual average compound growth rate for each of the values in c)**
16 **above and the long run compound growth rate in both Canadian and US GDP over**
17 **the same period.**
18
- 19 (e) **Please provide source documentation for the forecast long run growth rates in**
20 **Canadian and US GDP.**
21
- 22 (f) **Please explain why Ms. McShane does not provide a sustainable growth rate based**
23 **DCF estimate in Table B-2 when she has provided such an estimate in other recent**
24 **testimony.**
25
- 26 (g) **Please provide the sustainable growth rate estimate in Table B-2 consistent with Ms.**
27 **McShane's other recent testimony.**

NON-CONFIDENTIAL

1 Response IR-9:

2

3 (a) Confirmed.

4

5 (b) If Ms. McShane were conducting a comprehensive “from first principles” study of the
6 cost of equity, she would include risk premium tests which were based on a forecast long-
7 term Government of Canada bond yield. She has not done so in this Opinion. Rather, she
8 has assessed the reasonableness of NSPML’s proposed ROE. As of February 21, 2013,
9 the 10-year and 30-year Government of Canada bond yields were 1.98 percent and 2.61
10 percent respectively. The corresponding 10-year and 30-year U.S. Treasury bond yields
11 were 1.99 percent and 3.17 percent. NSPML proposed 9.10 percent as a starting point
12 which was comparable to the existing NS Power ROE.

13

14 (c) Please refer to UARB-Booth IR-009 Attachment 1.

15

16 (d) Please refer to UARB-Booth IR-009 Attachment 2.

17

18 (e) For the source document for the long-run growth rate in GDP in the U.S., *Blue Chip*
19 *Economic Indicators*, October 2012, please refer to CA IR-3. Ms. McShane’s Opinion
20 does not reference forecast long-term growth in GDP in Canada.

21

22 (f) Ms. McShane was not conducting a comprehensive “from first principles” cost of equity
23 study for the Maritime Link project. Rather her opinion was intended to assess the
24 reasonableness of NSPML’s proposed ROE. Thus, Ms. McShane did not conduct all of
25 the studies that she would typically use to recommend an ROE.

26

27 (g) The mean sustainable growth rate estimate is 8.9 percent and the median sustainable
28 growth rate estimate is 8.6 percent.

Book Value Per Share

	AGL Resources	ALLETE	Alliant Energy	Atmos Energy	Consolidated Edison	Integrus Energy	Northwest	Piedmont	Southern	Vectren	WGL Holdings	Wisconsin Energy	Xcel Energy
90	8.94	24.46	16.39	8.72	19.72	16.26	12.65	4.58	10.73	7.33	10.17	6.85	12.21
91	9.40	23.93	17.09	8.88	20.17	16.13	12.27	4.83	11.04	7.47	10.34	7.18	12.61
92	9.69	24.82	17.61	9.17	20.89	17.33	12.44	5.13	11.33	7.67	10.67	7.49	12.96
93	9.89	27.04	19.15	10.39	21.63	18.18	13.08	5.45	11.96	8.64	11.04	7.84	13.67
94	10.19	26.96	19.43	9.78	22.62	18.69	13.63	5.68	12.47	9.02	11.51	8.01	14.18
95	10.14	27.84	19.42	10.20	23.51	19.39	14.55	6.16	13.10	9.33	11.95	8.44	14.87
96	10.56	27.97	19.74	10.76	24.37	19.56	15.38	6.53	13.36	9.89	12.79	8.71	15.47
97	10.99	29.06	19.73	11.04	25.18	20.00	16.02	6.95	13.91	9.72	13.48	8.25	15.90
98	11.42	32.55	20.69	12.21	25.88	19.48	16.59	7.45	14.04	10.16	13.86	8.23	16.25
99	11.59	32.89	27.29	12.09	25.31	19.97	17.12	7.86	13.82	10.46	14.72	8.44	16.43
00	11.50	36.18	25.80	12.28	25.81	20.47	17.93	8.26	15.69	11.91	15.31	8.50	16.32
01	12.19	40.90	21.41	14.31	26.71	22.95	18.56	8.63	11.43	12.54	16.24	8.91	17.91
02	12.52	43.19	19.94	13.76	27.60	24.48	18.88	8.91	12.16	12.81	15.78	9.22	11.70
03	14.66	50.18	21.42	16.66	28.37	27.25	19.52	9.36	13.13	14.18	16.83	9.96	12.95
04	18.06	21.23	22.18	18.05	29.02	29.12	20.64	11.15	13.86	14.42	17.54	10.65	12.99
05	19.27	20.03	20.85	19.90	29.74	32.54	21.28	11.53	14.41	15.04	18.36	11.46	13.38
06	20.71	21.90	22.83	20.16	31.03	35.36	21.97	11.70	15.23	15.43	18.86	12.35	14.28
07	21.74	24.11	24.30	22.01	33.31	42.39	22.52	11.84	16.22	16.17	19.89	13.25	14.70
08	21.48	25.37	25.56	22.60	35.37	40.79	23.71	12.11	17.08	16.69	20.99	14.27	15.35
09	22.97	26.41	25.06	23.52	36.40	37.62	24.88	12.67	18.15	17.23	21.89	15.26	15.92
10	23.24	27.26	26.09	24.16	37.88	37.57	25.99	13.35	19.21	17.61	22.63	16.26	16.76
11	28.36	28.78	27.14	24.98	38.99	38.01	26.70	13.79	20.32	17.89	23.42	17.20	17.44

Dividends per Share

	AGL Resources	ALLETE	Alliant Energy	Atmos Energy	Consolidat ed Edison	Integrus Energy	Northwest	Piedmont	Southern	Vectren	WGL Holdings	Wisconsin Energy	Xcel Energy
90	0.99	0.93	1.74	0.78	1.82	1.64	1.10	0.42	1.07	0.66	1.01	0.58	1.15
91	1.02	0.95	1.80	0.81	1.86	1.68	1.13	0.44	1.07	0.70	1.04	0.61	1.20
92	1.04	0.97	1.86	0.83	1.90	1.72	1.15	0.46	1.10	0.73	1.07	0.64	1.25
93	1.04	0.99	1.90	0.86	1.94	1.76	1.17	0.49	1.14	0.75	1.09	0.67	1.28
94	1.04	1.01	1.92	0.89	2.00	1.80	1.17	0.52	1.18	0.78	1.11	0.70	1.31
95	1.05	1.02	1.94	0.93	2.04	1.84	1.18	0.55	1.22	0.81	1.12	0.73	1.34
96	1.07	1.02	1.97	0.97	2.08	1.88	1.20	0.58	1.26	0.84	1.14	0.75	1.37
97	1.08	1.02	2.00	1.02	2.10	1.92	1.21	0.61	1.30	0.87	1.17	0.77	1.40
98	1.08	1.02	2.00	1.07	2.12	1.96	1.22	0.65	1.34	0.91	1.20	0.78	1.42
99	1.08	1.07	2.00	1.11	2.14	2.00	1.23	0.69	1.34	0.95	1.22	0.78	1.45
00	1.08	1.07	2.00	1.15	2.18	2.04	1.24	0.73	1.34	0.98	1.24	0.69	1.48
01	1.08	1.07	2.00	1.17	2.20	2.08	1.25	0.77	1.34	1.03	1.26	0.40	1.50
02	1.08	1.10	2.00	1.19	2.22	2.12	1.26	0.80	1.36	1.07	1.27	0.40	1.13
03	1.11	1.13	1.00	1.21	2.24	2.16	1.27	0.83	1.39	1.11	1.28	0.40	0.75
04	1.15	1.15	1.01	1.23	2.26	2.20	1.30	0.86	1.41	1.15	1.30	0.42	0.81
05	1.30	1.25	1.05	1.25	2.28	2.24	1.32	0.92	1.48	1.19	1.32	0.44	0.85
06	1.48	1.45	1.15	1.27	2.30	2.28	1.39	0.96	1.53	1.23	1.35	0.46	0.88
07	1.64	1.64	1.27	1.29	2.32	2.50	1.44	1.00	1.60	1.27	1.37	0.50	0.91
08	1.68	1.72	1.40	1.31	2.34	2.68	1.52	1.04	1.66	1.31	1.41	0.54	0.94
09	1.72	1.76	1.50	1.33	2.36	2.72	1.60	1.08	1.73	1.35	1.46	0.68	0.97
10	1.76	1.76	1.58	1.35	2.38	2.72	1.68	1.12	1.80	1.37	1.50	0.80	1.00
11	1.80	1.78	1.70	1.37	2.40	2.72	1.75	1.16	1.87	1.39	1.54	1.04	1.03

Earnings Per Share Bef. Extraordinary 12 month moving average

	AGL Resources	ALLETE	Alliant Energy	Atmos Energy	Consolidated Edison	Integrus Energy	Northwest	Piedmont	Southern	Vectren	WGL Holdings	Wisconsin Energy	Xcel Energy
90	1.01	3.56	2.23	0.98	2.34	2.00	1.62	0.61	0.96	0.95	1.26	0.92	1.40
91	1.04	3.69	2.43	0.80	2.32	2.23	0.67	0.44	1.39	0.84	1.14	0.94	1.51
92	1.13	3.47	2.10	0.97	2.46	2.35	0.74	0.70	1.51	0.87	1.27	0.84	1.16
93	1.08	3.30	2.11	1.22	2.66	2.47	1.74	0.73	1.57	1.22	1.31	0.90	1.51
94	1.17	2.99	2.17	0.97	2.98	2.21	1.63	0.68	1.52	1.15	1.42	0.84	1.73
95	0.50	3.09	2.33	1.22	2.93	2.32	1.61	0.73	1.66	1.10	1.45	1.07	1.96
96	1.37	3.42	2.38	1.42	2.93	2.00	1.97	0.84	1.68	1.40	1.85	0.99	1.91
97	1.37	3.71	1.90	0.81	2.95	2.10	1.78	0.91	1.42	0.68	1.85	0.27	1.61
98	1.41	4.05	1.26	1.85	3.04	1.76	1.01	0.99	1.40	1.33	1.54	0.83	1.84
99	1.30	2.91	2.51	0.58	3.14	2.24	1.70	0.94	1.33	1.40	1.47	0.90	1.70
00	1.29	5.85	4.84	1.14	2.75	2.53	1.80	1.02	1.52	1.18	1.79	0.64	1.60
01	1.63	5.16	1.57	1.47	3.22	2.75	1.90	1.02	1.62	0.89	1.75	0.89	2.14
02	1.84	4.41	0.97	1.45	3.14	3.64	1.63	0.95	1.86	1.69	0.81	0.73	1.37
03	2.15	1.08	1.54	1.72	2.37	3.26	1.77	1.12	2.03	1.58	2.31	0.86	1.31
04	2.30	1.37	1.93	1.60	2.33	3.74	1.87	1.28	2.07	1.43	1.99	0.94	1.30
05	2.50	0.65	0.48	1.73	3.00	3.85	2.11	1.32	2.14	1.81	2.18	1.30	1.23
06	2.73	2.78	2.90	1.83	2.97	3.51	2.30	1.28	2.12	1.44	1.94	1.34	1.39
07	2.74	3.09	3.78	1.94	3.48	2.49	2.78	1.41	2.29	1.89	2.19	1.44	1.38
08	2.85	2.82	2.54	2.02	3.37	1.59	2.63	1.50	2.26	1.65	2.35	1.53	1.47
09	2.89	1.89	1.01	2.10	3.16	-0.96	2.83	1.68	2.07	1.65	2.40	1.61	1.49
10	3.02	2.20	2.62	2.14	3.49	2.85	2.73	1.96	2.37	1.65	2.17	1.95	1.62
11	2.14	2.66	2.73	2.18	3.59	2.90	2.39	1.58	2.57	1.73	2.29	2.20	1.72

	Book Value Per Share	Dividends Per Share	Earnings Per Share
1990-2011	Compound Growth	Compound Growth	Compound Growth
AGL Resources	5.7%	2.9%	3.6%
ALLETE	0.8%	3.1%	-1.4%
Alliant Energy	2.4%	-0.1%	1.0%
Atmos Energy	5.1%	2.7%	3.9%
Consolidated Edison	3.3%	1.3%	2.1%
Integrus Energy	4.1%	2.4%	1.8%
Northwest Natural Gas	3.6%	2.2%	1.9%
Piedmont Natural Gas	5.4%	5.0%	4.6%
Southern Company	3.1%	2.7%	4.8%
Vectren Corp	4.3%	3.6%	2.9%
WGL Holdings	4.1%	2.0%	2.9%
Wisconsin Energy	4.5%	2.8%	4.2%
Xcel Energy	1.7%	-0.5%	1.0%
Sample Average	3.7%	2.3%	2.6%

US Compound GDP Growth 4.7%
Canada Compound GDP Growth 4.5%

NON-CONFIDENTIAL

1 **Request IR-10:**

2
3 **With respect to Ms. McShane's evidence on DCF Risk Premium Estimates in**
4 **Appendix 4.02:**

5
6 **(a) Please provide the underlying monthly DCF estimates used to calculate the results**
7 **in Table B-3 and the annual averages on page 45. The data should include the actual**
8 **dividend yield and growth expectation for each US utility in her sample as well as**
9 **the average DCF estimate and benchmark US Treasury yield.**

10
11 **(b) Please provide the data equivalent to a) above back to 1990 rather than 1998 and**
12 **explain why the year 1998 was used as a start date.**

13
14 **(c) Given that her estimates on page B-9 indicate a 0.43-0.46 change in the utility cost of**
15 **equity for each 1.0% change in the long bond yield please explain in detail why**
16 **Ms. McShane recommends a 0.75 adjustment coefficient rather than the 0.50 she**
17 **normally recommends.**

18
19 **(d) Please provide the regression models equivalent to those presented on page 46 to**
20 **justify the empirical results on page B-9 except that the single independent variable**
21 **(the A yield) is replaced by the long US Treasury yield and the A bond yield spread**
22 **as Ms. McShane normally presents her results.**

23
24 **(e) Please provide references to any testimony in the last ten years where Ms. McShane**
25 **has based her DCF risk premium analysis on a premium over the A yield rather**
26 **than both the long US Treasury yield and the A spread.**

27
28 **(f) Please indicate whether the allowed ROEs on page 47 are the actual allowed ROEs**
29 **or the allowed ROEs in decisions rendered in that quarter.**

NON-CONFIDENTIAL

1 Response IR-10:

2

3 (a) For the data underlying the analysis, please refer to CA IR-3. For the monthly US
4 Treasury bond yields, which were not relied upon for this analysis, please refer to
5 UARB Booth IR-010 Attachment 1.

6

7 (b) For the data for 1990-1997, please refer to UARB-Booth IR-010 Attachment 2. The
8 analysis started in 1998 to include the years during which long-term Canada and U. S.
9 bond yields have been broadly similar. It was also intended to balance including
10 sufficient observations to construct a reliable analysis with excluding periods where the
11 relationships between equity costs and bond yields were different from recent
12 relationships.

13

14 (c) Ms. McShane was asked to assess the reasonableness of NSPML's proposed formula.
15 She considered the proposed relationship to be reasonable considering the level of the
16 starting ROE, the forecasts of interest rates for the construction period and the
17 corresponding levels of ROE should those forecasts be realized.

18

19 (d) For the regression models and results, please refer to UARB-Booth IR-010 Attachment 3.

20

21 (e) Ms. McShane's testimony on behalf of NSPI in the 2012 GRA included a DCF-based
22 risk premium test model based on a premium over the Baa-rated utility bond yield in
23 addition to a model which used the two separate government bond yield and
24 utility/government bond yield spread variables. In her testimony filed in the BC Generic
25 Cost of Capital proceeding in August 2012, she included a DCF-based risk premium
26 model based on a premium over the A-rated utility bond yield, in addition to a model
27 which used the two separate variables. As she noted in her BC Generic Cost of Capital
28 evidence (page 103): "The two independent variables (long-term government bond yields

NON-CONFIDENTIAL

- 1 and the long-term A- rated utility bond/government bond yield spread) can be collapsed
2 into a single independent variable, the long-term A-rated utility bond yield.”
3
4 (f) They are the allowed ROEs in decisions rendered in that quarter.

	US 30 Year Treasury Yield
Jan-90	8.46
Feb-90	8.54
Mar-90	8.63
Apr-90	9.00
May-90	8.58
Jun-90	8.41
Jul-90	8.42
Aug-90	8.99
Sep-90	8.96
Oct-90	8.78
Nov-90	8.40
Dec-90	8.26
Jan-91	8.21
Feb-91	8.19
Mar-91	8.24
Apr-91	8.20
May-91	8.26
Jun-91	8.42
Jul-91	8.36
Aug-91	8.06
Sep-91	7.82
Oct-91	7.91
Nov-91	7.94
Dec-91	7.41
Jan-92	7.77
Feb-92	7.80
Mar-92	7.96
Apr-92	8.06
May-92	7.84
Jun-92	7.79
Jul-92	7.46
Aug-92	7.42
Sep-92	7.38
Oct-92	7.63
Nov-92	7.59
Dec-92	7.40
Jan-93	7.21
Feb-93	6.90
Mar-93	6.93
Apr-93	6.95
May-93	6.98
Jun-93	6.68
Jul-93	6.57
Aug-93	6.09
Sep-93	6.04
Oct-93	5.96
Nov-93	6.29
Dec-93	6.35
Jan-94	6.23
Feb-94	6.67
Mar-94	7.11

Apr-94	7.31
May-94	7.44
Jun-94	7.63
Jul-94	7.39
Aug-94	7.46
Sep-94	7.82
Oct-94	7.97
Nov-94	7.99
Dec-94	7.89
Jan-95	7.71
Feb-95	7.46
Mar-95	7.44
Apr-95	7.34
May-95	6.67
Jun-95	6.63
Jul-95	6.86
Aug-95	6.65
Sep-95	6.49
Oct-95	6.34
Nov-95	6.14
Dec-95	5.96
Jan-96	6.03
Feb-96	6.48
Mar-96	6.67
Apr-96	6.89
May-96	7.00
Jun-96	6.90
Jul-96	6.98
Aug-96	7.13
Sep-96	6.93
Oct-96	6.66
Nov-96	6.36
Dec-96	6.65
Jan-97	6.80
Feb-97	6.80
Mar-97	7.10
Apr-97	6.95
May-97	6.92
Jun-97	6.80
Jul-97	6.30
Aug-97	6.61
Sep-97	6.41
Oct-97	6.15
Nov-97	6.04
Dec-97	5.93
Jan-98	5.82
Feb-98	5.92
Mar-98	5.94
Apr-98	5.95
May-98	5.81
Jun-98	5.62
Jul-98	5.72
Aug-98	5.30
Sep-98	4.98
Oct-98	5.15

Nov-98	5.08
Dec-98	5.09
Jan-99	5.09
Feb-99	5.57
Mar-99	5.63
Apr-99	5.68
May-99	5.84
Jun-99	5.98
Jul-99	6.11
Aug-99	6.07
Sep-99	6.06
Oct-99	6.16
Nov-99	6.29
Dec-99	6.48
Jan-00	6.49
Feb-00	6.15
Mar-00	5.84
Apr-00	5.97
May-00	6.02
Jun-00	5.90
Jul-00	5.79
Aug-00	5.67
Sep-00	5.88
Oct-00	5.79
Nov-00	5.60
Dec-00	5.46
Jan-01	5.54
Feb-01	5.34
Mar-01	5.46
Apr-01	5.78
May-01	5.78
Jun-01	5.75
Jul-01	5.51
Aug-01	5.39
Sep-01	5.42
Oct-01	4.89
Nov-01	5.27
Dec-01	5.48
Jan-02	5.44
Feb-02	5.57
Mar-02	5.96
Apr-02	5.73
May-02	5.76
Jun-02	5.68
Jul-02	5.47
Aug-02	5.09
Sep-02	4.83
Oct-02	5.18
Nov-02	5.21
Dec-02	4.95
Jan-03	4.99
Feb-03	4.82
Mar-03	4.98
Apr-03	4.92
May-03	4.50

Jun-03	4.70
Jul-03	5.51
Aug-03	5.31
Sep-03	5.01
Oct-03	5.25
Nov-03	5.22
Dec-03	5.18
Jan-04	5.07
Feb-04	4.95
Mar-04	4.87
Apr-04	5.36
May-04	5.41
Jun-04	5.41
Jul-04	5.31
Aug-04	4.97
Sep-04	4.97
Oct-04	4.87
Nov-04	5.07
Dec-04	4.86
Jan-05	4.62
Feb-05	4.71
Mar-05	4.76
Apr-05	4.53
May-05	4.36
Jun-05	4.19
Jul-05	4.42
Aug-05	4.23
Sep-05	4.53
Oct-05	4.73
Nov-05	4.66
Dec-05	4.51
Jan-06	4.69
Feb-06	4.51
Mar-06	4.90
Apr-06	5.17
May-06	5.21
Jun-06	5.19
Jul-06	5.07
Aug-06	4.88
Sep-06	4.77
Oct-06	4.72
Nov-06	4.56
Dec-06	4.81
Jan-07	4.93
Feb-07	4.68
Mar-07	4.84
Apr-07	4.81
May-07	5.01
Jun-07	5.12
Jul-07	4.92
Aug-07	4.83
Sep-07	4.83
Oct-07	4.74
Nov-07	4.40
Dec-07	4.45

Jan-08	4.35
Feb-08	4.41
Mar-08	4.30
Apr-08	4.49
May-08	4.72
Jun-08	4.53
Jul-08	4.59
Aug-08	4.43
Sep-08	4.31
Oct-08	4.35
Nov-08	3.45
Dec-08	2.69
Jan-09	3.58
Feb-09	3.71
Mar-09	3.56
Apr-09	4.05
May-09	4.34
Jun-09	4.32
Jul-09	4.31
Aug-09	4.18
Sep-09	4.03
Oct-09	4.23
Nov-09	4.20
Dec-09	4.63
Jan-10	4.51
Feb-10	4.55
Mar-10	4.72
Apr-10	4.53
May-10	4.22
Jun-10	3.91
Jul-10	3.98
Aug-10	3.52
Sep-10	3.69
Oct-10	3.99
Nov-10	4.12
Dec-10	4.34
Jan-11	4.58
Feb-11	4.49
Mar-11	4.51
Apr-11	4.40
May-11	4.22
Jun-11	4.38
Jul-11	4.12
Aug-11	3.60
Sep-11	2.90
Oct-11	3.16
Nov-11	3.06
Dec-11	2.89
Jan-12	2.94
Feb-12	3.08
Mar-12	3.35
Apr-12	3.12
May-12	2.67
Jun-12	2.76
Jul-12	2.56

Aug-12	2.68
Sep-12	2.82

Closing Prices - Monthly

	AGL Resources	ALLETE	Alliant Energy	Atmos Energy	Consolidated Edison	Integrus	Northwest Nat. Gas	Piedmont Natural Gas	Southern	Vectren Corp	WGL Holdings Inc.	Wisconsin Energy	Xcel Energy
Jan-90	13.69	12.44	22.13	11.75	27.25	22.00	16.50	6.72	13.50	9.81	14.88	9.88	18.63
Feb-90	14.06	12.69	22.75	11.67	26.38	21.75	16.75	6.88	13.06	9.50	14.44	9.63	18.25
Mar-90	14.63	12.69	22.88	12.00	26.00	21.25	16.42	6.97	13.13	9.68	14.81	9.50	18.19
Apr-90	14.25	12.38	22.63	11.25	23.75	20.75	16.17	6.78	12.19	9.75	14.31	9.04	16.75
May-90	14.44	12.63	22.13	11.42	23.38	21.50	16.25	7.03	12.50	10.13	15.06	9.42	17.94
Jun-90	15.75	12.44	22.38	11.08	23.50	21.38	17.67	6.84	12.63	9.75	15.06	9.67	18.06
Jul-90	15.69	12.75	21.88	11.50	25.00	21.13	15.92	6.78	12.81	9.81	14.75	9.83	17.88
Aug-90	14.19	11.56	21.25	12.00	21.75	21.25	15.42	6.47	11.75	10.50	14.25	9.29	14.94
Sep-90	15.19	11.31	20.75	11.25	21.00	21.00	16.00	6.84	11.88	10.50	14.75	9.29	15.06
Oct-90	15.50	12.69	23.00	11.00	23.38	23.50	16.42	6.94	13.00	10.88	13.88	10.13	16.31
Nov-90	15.44	12.75	24.25	11.17	23.00	23.38	17.50	7.28	13.44	11.94	13.63	10.46	16.56
Dec-90	15.25	13.13	24.50	11.08	23.63	23.63	17.17	7.34	13.94	11.75	14.75	10.54	17.00
Jan-91	15.44	13.31	24.00	10.50	23.50	22.88	17.25	7.47	13.00	11.31	14.00	10.50	16.69
Feb-91	15.38	13.88	25.63	11.50	24.00	24.75	18.00	7.03	13.81	12.06	14.69	10.75	17.06
Mar-91	15.81	13.63	26.25	11.33	25.75	24.63	18.17	7.19	14.31	12.31	14.31	11.42	17.75
Apr-91	16.63	14.38	25.75	11.08	24.63	25.38	18.75	6.53	13.81	11.81	14.56	11.04	16.75
May-91	15.81	14.50	26.50	11.75	24.25	24.25	19.00	7.00	13.56	11.50	14.56	11.04	17.00
Jun-91	15.94	13.31	25.75	11.67	24.63	24.25	17.50	6.97	13.75	11.69	14.25	10.79	17.31
Jul-91	16.06	13.81	26.50	12.00	25.38	25.13	18.83	7.25	13.81	12.75	15.13	11.38	17.94
Aug-91	17.25	14.19	28.13	13.17	25.38	26.00	19.33	7.72	13.69	12.44	15.31	11.67	18.88
Sep-91	17.19	14.50	30.00	14.00	25.38	26.50	19.83	7.50	15.06	13.38	17.00	12.25	19.69
Oct-91	17.81	14.75	29.00	13.42	25.75	26.50	21.33	7.53	15.00	12.88	17.13	12.21	19.88
Nov-91	17.50	14.88	30.00	13.83	26.00	26.75	20.25	7.66	15.69	14.50	17.00	12.42	20.50
Dec-91	18.31	16.25	32.75	15.33	28.63	28.25	19.17	8.34	17.19	13.75	17.25	13.08	21.50
Jan-92	17.19	15.56	30.13	13.83	28.50	27.63	20.33	8.22	16.31	14.50	16.63	12.58	20.38
Feb-92	16.00	15.50	31.38	13.58	25.88	26.25	20.33	8.41	15.56	14.13	16.88	12.46	20.31
Mar-92	16.06	15.31	31.13	13.33	27.00	27.00	19.67	8.00	15.94	13.75	16.00	12.33	19.63
Apr-92	16.06	15.63	32.75	13.17	28.00	27.75	18.00	7.97	16.44	13.81	16.50	12.92	20.31
May-92	17.69	15.44	34.13	13.33	28.38	28.13	19.83	8.63	16.88	13.88	17.63	13.04	20.44
Jun-92	18.00	15.81	33.75	13.00	28.00	29.38	20.17	8.50	17.44	13.63	18.13	13.29	21.88
Jul-92	18.38	16.75	35.75	13.58	31.25	31.88	20.83	9.22	18.94	14.00	18.25	14.06	21.88
Aug-92	19.31	16.63	34.38	15.17	30.88	31.00	21.17	9.25	18.63	14.69	19.25	13.63	21.75
Sep-92	18.81	16.88	35.63	14.92	31.38	31.88	21.50	9.69	19.00	14.75	19.44	13.44	21.50
Oct-92	17.31	16.25	33.88	14.83	31.25	31.50	20.00	9.88	18.44	14.38	18.94	13.00	21.25
Nov-92	17.13	16.75	32.00	15.50	31.50	31.63	19.17	9.91	18.00	14.44	18.13	12.69	21.69
Dec-92	18.88	17.13	33.88	15.67	32.63	31.75	19.00	9.63	19.25	14.19	19.31	13.25	21.63
Jan-93	19.25	17.31	33.38	15.58	33.63	32.13	19.83	9.78	19.31	15.44	18.75	13.13	22.00
Feb-93	20.44	18.13	34.88	16.75	35.25	34.38	21.33	10.91	20.63	15.81	19.94	13.94	23.38
Mar-93	21.00	17.94	36.50	16.58	35.63	34.38	20.58	10.97	21.31	16.75	22.19	13.88	23.31
Apr-93	20.19	17.75	35.00	18.00	35.38	33.75	20.92	11.81	21.06	16.63	20.63	13.75	22.69
May-93	19.50	17.31	34.25	18.67	34.13	32.88	22.67	11.00	20.31	15.44	20.38	13.38	22.06
Jun-93	20.06	17.63	35.38	18.75	35.25	34.13	22.67	11.38	21.06	15.31	21.88	13.81	22.94
Jul-93	20.13	18.00	35.38	19.75	36.38	35.13	24.17	12.19	20.75	16.81	22.00	13.81	22.94
Aug-93	19.06	18.13	36.00	20.25	36.75	34.75	24.17	12.69	22.25	17.88	22.13	14.38	23.63
Sep-93	18.81	17.75	35.63	20.33	36.13	36.00	24.75	12.69	22.50	17.56	22.69	14.44	23.19
Oct-93	18.38	16.38	35.00	20.75	34.75	35.38	24.17	12.69	22.44	17.16	21.44	14.50	22.19
Nov-93	18.13	15.38	31.50	18.25	31.13	32.38	23.33	10.63	21.63	16.31	20.44	13.56	21.13
Dec-93	19.44	16.38	32.88	18.42	32.13	33.63	22.83	10.06	22.06	16.31	20.63	13.75	21.56
Jan-94	19.31	15.88	31.00	19.50	31.25	31.63	24.00	10.88	21.75	16.97	20.75	13.38	21.81
Feb-94	17.75	14.50	29.00	19.67	29.63	28.88	23.83	11.19	20.56	15.75	20.06	12.50	20.63
Mar-94	17.25	14.75	29.63	17.83	29.13	29.25	22.50	10.50	19.00	14.34	19.75	12.63	20.44
Apr-94	17.94	14.88	30.38	19.17	30.63	30.00	22.50	10.56	19.50	15.00	19.31	13.06	21.00
May-94	17.25	13.06	27.63	18.50	27.63	28.50	20.67	10.00	18.50	14.81	19.00	12.63	20.44
Jun-94	16.94	12.94	27.25	18.38	26.50	28.25	20.00	10.13	18.75	13.69	18.88	11.94	20.50
Jul-94	17.50	13.31	28.25	17.75	28.75	29.13	19.83	10.69	19.38	14.44	19.00	13.00	21.38
Aug-94	16.38	13.50	29.88	17.00	27.25	29.13	20.33	10.50	18.88	14.53	19.00	13.00	21.63
Sep-94	15.31	13.06	28.13	17.75	24.88	28.25	21.33	10.75	18.63	14.91	17.94	12.69	21.13
Oct-94	16.25	13.06	28.25	16.38	24.88	27.50	20.00	10.06	19.88	14.63	17.94	13.25	22.19
Nov-94	14.81	12.94	27.63	17.38	25.88	26.88	19.17	9.81	20.75	13.31	16.69	13.00	22.56
Dec-94	15.00	12.63	27.38	17.00	25.75	26.75	19.67	9.44	20.00	15.38	16.75	12.94	22.00
Jan-95	16.00	12.75	29.25	16.38	28.25	28.50	20.25	9.44	20.88	14.34	17.25	14.00	23.13
Feb-95	16.88	12.94	30.13	18.13	27.63	29.38	20.17	9.88	20.63	14.06	19.06	13.88	22.63
Mar-95	17.38	12.63	28.75	18.50	27.25	29.00	20.83	10.19	20.38	13.97	20.19	13.56	22.00
Apr-95	18.25	13.06	28.38	18.75	27.75	29.00	20.63	10.19	20.63	13.78	19.50	13.88	22.13
May-95	17.13	13.75	29.00	19.25	29.88	29.25	19.75	10.19	22.13	14.72	19.38	14.44	23.69
Jun-95	17.38	13.63	28.63	20.25	29.50	29.25	20.83	10.38	22.38	14.25	18.88	14.00	23.06
Jul-95	17.50	13.75	28.25	20.00	29.00	29.00	21.00	9.94	22.00	14.53	18.25	14.00	22.13
Aug-95	18.44	13.44	28.50	19.88	28.25	28.88	20.67	10.19	21.13	15.56	19.13	13.44	21.31
Sep-95	19.31	13.94	29.25	19.38	30.38	30.38	20.67	10.00	23.50	16.22	19.88	14.19	22.69
Oct-95	19.31	14.31	30.50	18.38	30.38	31.13	21.33	11.00	23.88	15.84	19.13	14.75	23.63
Nov-95	19.13	13.88	31.00	20.88	28.75	31.75	22.33	11.75	22.88	17.81	20.88	14.75	23.50
Dec-95	19.75	14.19	30.63	23.00	31.75	34.00	22.00	11.63	24.63	17.91	20.50	15.31	24.56
Jan-96	20.25	14.44	31.50	21.25	33.75	33.88	22.17	11.69	25.38	18.09	21.88	15.75	25.69
Feb-96	18.13	13.69	31.00	22.63	32.38	33.00	22.00	11.25	23.88	18.75	21.88	14.44	24.63
Mar-96	18.38	13.88	30.88	23.00	31.88	33.63	21.17	11.13	23.88	18.00	21.88	14.19	24.38
Apr-96	18.88	13.38	29.75	24.75	29.38	31.50	21.67	10.81	22.00	17.91	21.00	13.31	23.31
May-96	17.63	13.44	30.25	24.13	27.88	31.00	22.83	10.81	23.13	17.81	20.75	14.00	23.50
Jun-96	18.88	14.50	32.88	30.63	29.25	31.63	23.33	11.56	24.63	21.47	22.00	14.44	24.69
Jul-96	18.25	13.81	31.50	21.38	27.00	31.38	23.08	11.81	22.63	18.94	20.75	13.31	22.38
Aug-96	20.25	13.44	30.50	22.88	26.13	31.25	23.67	12.38	22.50	19.03	21.88	13.75	22.81
Sep-96	19.13	13.31	29.13	23.38	27.75	30.38	23.00	12.06	22.50	18.28	22.00	13.50	23.31
Oct-96	21.00	14.13	28.13	23.75	29.25	29.75	25.38	12.25	22.13	18.38	22.38	13.56	23.50
Nov-96	21.13	14.06	28.13	24.63	29.00	29.38	25.00	12.56	22.25	18.09	23.88	13.38	23.56
Dec-96	21.13	13.75	28.13	23.88	29.13	28.50	24.00	11.69	22.63	18.28	22.63	13.44	22.94
Jan-97	20.88	14.31	28.13										

Dividend Yield

	AGL Resources	ALLETE	Alliant Energy	Atmos Energy	Consolidated Edison	Integrus	Northwest Nat. Gas	Piedmont Natural Gas Southern	Vectren Corp	WGL Holdings Inc.	Wisconsin Energy	Xcel Energy	
Jan-90	7.16	7.15	7.86	6.57	6.31	7.36	6.62	5.95	7.94	6.52	6.59	5.59	5.97
Feb-90	6.97	7.32	7.65	6.62	6.90	7.45	6.52	5.82	8.21	6.74	6.79	5.74	6.09
Mar-90	6.70	7.32	7.61	6.43	7.00	7.62	6.65	6.03	8.17	6.48	6.62	5.81	6.11
Apr-90	6.88	7.51	7.69	6.86	7.66	7.81	6.75	6.19	8.80	6.56	7.13	6.10	6.64
May-90	6.79	7.36	7.86	6.76	7.79	7.53	6.72	5.97	8.58	6.32	6.77	6.24	6.20
Jun-90	6.22	7.47	7.78	6.97	7.74	7.58	6.18	6.14	8.49	6.56	6.77	6.08	6.16
Jul-90	6.25	7.29	7.95	6.71	7.28	7.67	6.86	6.19	8.37	6.52	6.92	5.98	6.49
Aug-90	6.91	8.04	8.19	6.43	8.37	7.81	7.08	6.49	9.12	6.48	7.16	6.33	7.77
Sep-90	6.45	8.22	8.39	6.86	8.67	7.90	6.83	6.14	9.03	6.48	6.92	6.33	7.70
Oct-90	6.32	7.32	7.57	7.02	7.79	7.06	6.82	6.05	8.25	6.25	7.35	5.81	7.11
Nov-90	6.61	7.29	7.18	7.16	7.91	7.10	6.40	5.77	7.98	5.70	7.49	5.62	7.00
Dec-90	6.69	7.08	7.10	7.22	7.70	7.03	6.52	5.72	7.69	5.79	6.92	5.58	6.82
Jan-91	6.61	6.98	7.50	7.62	7.74	7.26	6.49	5.62	8.25	6.01	7.29	5.60	6.95
Feb-91	6.63	6.84	7.02	6.96	7.75	6.71	6.22	5.97	7.76	5.64	6.94	5.47	6.80
Mar-91	6.45	6.97	6.86	7.06	7.22	6.74	6.17	6.12	7.49	5.52	7.13	5.15	6.54
Apr-91	6.14	6.60	6.99	7.22	7.55	6.54	5.97	6.74	7.76	5.76	7.22	5.33	6.93
May-91	6.45	6.55	6.79	6.81	7.67	6.85	5.89	6.29	7.90	5.91	7.22	5.61	6.82
Jun-91	6.40	7.13	6.99	6.86	7.55	6.85	6.40	6.31	7.80	5.82	7.38	5.74	6.70
Jul-91	6.35	6.87	6.79	6.67	7.33	6.61	5.95	6.07	7.76	5.33	6.96	5.45	6.76
Aug-91	5.91	6.69	6.40	6.08	7.33	6.54	5.79	5.70	7.83	5.72	6.87	5.31	6.42
Sep-91	5.93	6.55	6.00	5.71	7.33	6.42	5.65	5.87	7.12	5.32	6.19	5.06	6.16
Oct-91	5.73	6.44	6.21	5.96	7.22	6.42	5.38	5.84	7.15	5.53	6.14	5.08	6.10
Nov-91	5.83	6.38	6.00	5.99	7.15	6.36	5.67	5.75	6.83	4.91	6.19	4.99	5.91
Dec-91	5.57	5.84	5.50	5.40	6.50	6.02	5.99	5.27	6.24	5.18	6.10	4.74	5.64
Jan-92	5.93	6.10	6.17	5.99	6.53	6.15	5.65	5.35	6.74	4.91	6.33	4.93	5.95
Feb-92	6.38	6.26	5.93	6.10	7.34	6.48	5.65	5.23	7.07	5.04	6.23	4.98	5.97
Mar-92	6.35	6.34	5.98	6.21	7.04	6.30	5.84	5.75	6.90	5.18	6.58	5.03	6.18
Apr-92	6.35	6.21	5.68	6.29	6.79	6.13	6.38	5.77	6.69	5.15	6.50	4.80	5.97
May-92	5.88	6.29	5.45	6.21	6.70	6.04	5.79	5.33	6.52	5.13	6.08	4.98	5.93
Jun-92	5.78	6.14	5.51	6.37	6.79	5.79	5.69	5.41	6.31	5.23	5.91	4.89	#DIV/0!
Jul-92	5.66	5.80	5.20	6.10	6.08	5.33	5.51	4.99	5.81	5.09	5.87	4.62	5.76
Aug-92	5.38	5.84	5.41	5.46	6.15	5.61	5.42	4.97	5.91	5.04	5.57	4.77	5.79
Sep-92	5.53	5.75	5.22	5.55	6.06	5.46	5.34	4.75	5.79	5.02	5.51	4.84	5.86
Oct-92	6.01	5.97	5.49	5.58	6.08	5.52	5.74	4.66	5.97	5.15	5.66	5.00	5.93
Nov-92	6.07	5.80	5.81	5.50	6.03	5.50	5.99	4.64	6.11	5.13	5.91	5.12	5.81
Dec-92	5.51	5.67	5.49	5.44	5.82	5.48	6.04	4.78	5.71	5.22	5.55	4.91	5.83
Jan-93	5.40	5.61	5.69	5.47	5.65	5.42	5.79	4.70	5.90	4.79	5.72	4.95	5.73
Feb-93	5.09	5.47	5.45	5.09	5.50	5.06	5.38	4.22	5.53	4.68	5.38	4.66	5.39
Mar-93	4.95	5.52	5.21	5.14	5.45	5.06	5.58	4.49	5.35	4.42	4.83	4.68	5.40
Apr-93	5.15	5.58	5.43	4.73	5.48	5.16	5.60	4.16	5.41	4.45	5.29	4.73	5.55
May-93	5.33	5.72	5.55	4.56	5.68	5.29	5.17	4.47	5.61	4.79	5.36	5.07	5.71
Jun-93	5.18	5.62	5.37	4.54	5.50	5.10	5.17	4.33	5.41	4.83	4.99	4.91	5.49
Jul-93	5.17	5.50	5.37	4.31	5.33	4.95	4.85	4.04	5.49	4.40	4.96	4.91	5.62
Aug-93	5.46	5.47	5.28	4.21	5.28	5.12	4.85	3.88	5.12	4.27	4.94	4.72	5.45
Sep-93	5.53	5.58	5.33	4.19	5.37	4.94	4.74	3.88	5.07	4.35	4.81	4.70	5.55
Oct-93	5.66	6.05	5.43	4.11	5.58	5.03	4.85	3.88	5.08	4.45	5.09	4.68	5.80
Nov-93	5.74	6.44	6.03	4.82	6.23	5.50	5.02	4.63	5.27	4.68	5.34	5.00	6.10
Dec-93	5.35	6.05	5.78	4.78	6.04	5.29	5.13	4.89	5.17	4.68	5.29	4.93	5.97
Jan-94	5.38	6.24	6.19	4.51	6.21	5.63	4.88	4.52	5.24	4.50	5.26	5.07	5.90
Feb-94	5.86	6.96	6.62	4.47	6.75	6.16	4.92	4.40	5.74	4.85	5.44	5.42	6.24
Mar-94	6.03	6.84	6.48	4.93	6.87	6.09	5.21	4.95	6.21	5.33	5.53	5.37	6.30
Apr-94	5.80	6.79	6.32	4.59	6.53	5.93	5.21	4.92	6.05	5.09	5.76	5.19	6.13
May-94	6.03	7.73	6.95	4.76	7.24	6.25	5.67	5.20	6.38	5.16	5.85	5.58	6.30
Jun-94	6.14	7.80	7.05	4.79	7.55	6.30	5.86	5.14	6.29	5.58	5.89	5.90	6.28
Jul-94	5.94	7.58	6.80	4.96	6.96	6.11	5.91	4.87	6.09	5.29	5.85	5.42	6.18
Aug-94	6.35	7.48	6.43	5.18	7.34	6.25	5.76	4.95	6.25	5.48	5.85	5.42	6.10
Sep-94	6.79	7.73	6.83	4.96	8.04	6.44	5.49	4.84	6.34	5.34	6.20	5.55	6.25
Oct-94	6.40	7.73	6.80	5.37	8.04	6.62	5.86	5.17	5.94	5.44	6.20	5.31	5.95
Nov-94	7.02	7.80	6.95	5.29	7.73	6.77	6.11	5.30	5.69	5.98	6.66	5.42	5.85
Dec-94	6.93	7.99	7.01	5.41	7.77	6.80	5.96	5.51	5.90	5.18	6.64	5.44	6.00
Jan-95	6.50	7.92	6.63	5.62	7.08	6.39	5.79	5.51	5.84	5.55	6.45	5.03	5.71
Feb-95	6.16	7.88	6.44	5.08	7.38	6.20	5.81	5.27	5.92	5.66	5.83	5.07	5.83
Mar-95	5.99	8.08	6.75	4.97	7.49	6.28	5.63	5.42	5.99	5.70	5.51	5.19	6.00
Apr-95	5.70	7.81	6.84	4.91	7.35	6.28	5.68	5.42	5.92	5.78	5.74	5.07	5.97
May-95	6.07	7.42	6.69	4.78	6.83	6.22	5.93	5.42	5.51	5.41	5.78	5.10	5.57
Jun-95	5.99	7.49	6.78	4.54	6.92	6.22	5.63	5.32	5.45	5.59	5.93	5.26	5.72
Jul-95	5.94	7.42	6.87	4.60	7.03	6.28	5.58	5.55	5.55	5.48	6.14	5.26	6.11
Aug-95	5.64	7.59	6.81	4.63	7.22	6.44	5.67	5.42	5.78	5.29	5.86	5.48	6.34
Sep-95	5.38	7.32	6.63	4.75	6.72	6.12	5.67	5.52	5.19	5.08	5.64	5.19	5.96
Oct-95	5.38	7.13	6.36	5.01	6.72	5.98	5.63	5.02	5.11	5.20	5.86	4.99	5.72
Nov-95	5.54	7.35	6.26	4.60	7.10	5.86	5.37	4.70	5.33	4.63	5.37	4.99	5.75
Dec-95	5.37	7.19	6.33	4.17	6.43	5.47	5.45	4.75	4.95	4.60	5.46	4.81	5.50
Jan-96	5.23	7.06	6.26	4.52	6.04	5.49	5.41	4.72	4.81	4.55	5.12	4.67	5.26
Feb-96	5.85	7.45	6.36	4.24	6.42	5.64	5.45	4.91	5.28	4.39	5.12	5.10	5.49
Mar-96	5.77	7.35	6.39	4.17	6.53	5.53	5.67	5.21	5.28	4.58	5.12	5.19	5.55
Apr-96	5.62	7.63	6.63	3.88	7.08	5.90	5.54	5.36	5.73	4.60	5.43	5.53	5.80
May-96	6.01	7.59	6.52	3.98	7.46	6.00	5.26	5.36	5.45	4.63	5.49	5.43	5.75
Jun-96	5.62	7.03	6.00	3.13	7.11	5.88	5.14	5.02	5.12	3.84	5.18	5.26	5.48
Jul-96	5.81	7.38	6.26	4.49	7.70	5.93	5.20	4.91	5.57	4.35	5.49	5.71	6.17
Aug-96	5.23	7.59	6.47	4.20	7.96	6.08	5.07	4.69	5.60	4.50	5.21	5.53	6.05
Sep-96	5.54	7.66	6.77	4.11	7.50	6.26	5.22	4.81	5.60	4.68	5.18	5.63	5.92
Oct-96	5.05	7.22	7.01	4.04	7.11	6.39	4.73	4.73	6.69	4.66	5.09	5.60	5.87
Nov-96	5.11	7.25	7.01	4.06	7.17	6.47	4.80	4.62	5.66	4.73	4.77	5.68	5.86
Dec-96	5.11	7.42	7.01	4.19	7.14	6.67	5.00	4.96	5.57	4.68	5.04	5.66	6.02
Jan-97	5.17	7.13	7.11	4.40	6.71	6.85	4.80	4.81	5.94	4.61	5.15	5.87	5.98
Feb-97	5.54	7.29	7.21	4.08	6.80	7.07	4.95	4.91	5.98	4.39	5.15	5.93	5.80
Mar-97	5.80	7.32	7.31	3.94	7.00	7.31	4.90	5.32	6.15	4.63	5.07	6.20	5.83
Apr-97	5.61	7.32	7.37	4.42	7.57	7.72	4.95	5.21	6.38	4.71	5.19	6.08	6.07
May-97	5.65	7.03	7.24	4.32	7.21	7.14	4.92	5.02	6.15	4.78	4.79	6.38	5.63
Jun-97	5.24	6.72	7.16	4.17	7.13	7.10	4.58	4.77	5.94	4.67	4.70	6.19	5.33
Jul-97	5.16	6.21	7.24	4.16	6.64	6.77	4.62	4.90	5.93	4.66	4.57	6.02	5.48
Aug-97	5.70	5.93	7.22	3.74	6.86	6.94	4.80	4.63	6.17	4.63	4.64	6.02	5.85
Sep-97	5.70	5.64	6.99	4.10	6.18	6.70							

IBES Mean LTG Estimate

	AGL Resources	ALLETE	Alliant Energy	Atmos Energy	Consolidated Edison	Integrus	Northwest Nat. Gas	Piedmont Natural Gas	Southern	Vectren Corp	WGL Holdings Inc.	Wisconsin Energy	Xcel Energy
Jan-90	7.54	3.89	3.15	5.00	4.12	4.03	4.00	18.60	3.01	4.76	5.40	5.09	4.00
Feb-90	7.54	3.89	3.15	5.00	4.12	4.03	4.00	18.60	2.93	4.76	5.40	5.09	4.00
Mar-90	7.63	3.89	2.98	3.00	3.93	3.81	4.75	17.50	2.99	4.76	5.00	4.90	3.79
Apr-90	6.63	4.33	3.15	3.00	3.95	4.10	4.00	17.50	3.19	4.96	5.00	4.82	3.81
May-90	6.91	4.04	2.67	3.00	3.82	3.64	4.40	17.50	3.29	4.96	4.33	4.54	3.62
Jun-90	6.91	4.04	2.67	4.50	3.83	2.92	4.20	15.00	3.06	4.28	4.75	4.44	3.55
Jul-90	6.92	4.04	2.67	4.50	3.30	2.92	4.20	15.00	2.86	4.58	4.75	4.34	3.59
Aug-90	6.72	3.98	2.50	4.50	3.13	2.66	4.33	15.00	2.71	4.40	4.80	4.19	3.16
Sep-90	6.72	3.77	2.45	4.50	2.98	2.63	4.33	15.00	2.70	3.93	4.80	4.14	3.31
Oct-90	6.53	3.77	2.45	4.50	3.17	2.63	4.33	11.63	2.83	3.93	4.80	4.06	3.57
Nov-90	6.72	3.49	2.95	4.50	3.16	2.63	4.33	11.63	2.67	3.93	4.80	4.04	3.60
Dec-90	6.72	3.51	2.95	4.50	2.42	2.69	4.71	11.63	2.53	4.10	4.50	3.87	3.26
Jan-91	6.75	3.51	2.95	4.50	2.57	2.97	4.71	11.50	2.59	4.10	4.67	3.94	3.33
Feb-91	6.75	3.51	2.95	4.50	2.45	2.97	4.71	11.50	2.86	4.10	4.71	3.94	3.42
Mar-91	6.50	3.24	2.95	4.50	2.45	2.97	4.71	9.33	2.86	4.10	4.50	3.94	3.42
Apr-91	6.50	3.24	2.78	6.00	2.70	2.97	4.71	8.50	2.83	3.72	4.60	3.97	3.95
May-91	6.50	3.24	2.78	6.00	2.63	2.97	4.86	8.50	2.83	3.72	4.60	4.19	3.95
Jun-91	5.96	3.24	2.78	6.00	2.63	2.97	4.86	8.50	2.83	3.72	4.43	4.27	3.95
Jul-91	6.05	3.24	2.78	6.00	2.65	2.97	4.83	7.25	2.81	3.72	4.33	4.34	3.88
Aug-91	6.05	3.10	2.78	8.75	2.88	2.97	4.83	7.25	2.87	3.72	4.33	4.41	3.92
Sep-91	6.05	3.10	2.81	8.75	2.80	2.97	4.57	7.60	2.87	3.72	4.17	4.20	3.88
Oct-91	6.05	3.10	2.78	8.75	2.65	2.97	4.50	7.70	2.87	3.72	3.71	4.20	3.98
Nov-91	6.05	3.10	2.78	7.25	2.65	2.97	4.50	7.70	2.94	3.72	3.71	4.12	3.98
Dec-91	6.05	3.10	2.78	7.25	2.54	2.97	4.50	6.60	3.07	3.72	3.71	4.12	4.08
Jan-92	5.95	3.10	2.78	7.25	2.54	2.97	4.50	8.00	3.07	3.72	3.86	4.20	4.08
Feb-92	5.95	2.81	2.78	7.25	2.80	2.97	4.33	8.00	3.27	3.32	3.86	4.30	4.25
Mar-92	5.70	2.81	2.78	7.25	2.72	2.97	4.39	8.00	3.24	3.32	3.86	4.30	4.25
Apr-92	5.70	2.59	2.78	7.75	2.66	2.97	4.39	8.00	3.29	3.32	3.86	4.28	4.28
May-92	5.70	2.73	2.78	7.75	2.64	2.52	4.72	7.80	3.16	3.32	4.00	4.36	4.08
Jun-92	5.78	2.73	2.78	7.75	2.60	2.52	4.50	7.80	3.29	3.52	4.00	4.36	3.87
Jul-92	5.78	2.73	2.78	7.75	2.91	2.27	4.50	7.80	3.23	3.52	4.17	4.46	3.69
Aug-92	5.78	2.73	2.78	7.75	2.96	2.27	4.50	7.80	3.19	3.32	4.17	4.40	3.43
Sep-92	5.78	2.73	2.62	7.75	2.91	2.27	4.79	7.80	3.29	3.32	4.17	4.25	3.50
Oct-92	5.78	2.73	2.62	7.75	2.91	2.43	4.79	7.80	3.29	3.32	4.17	4.21	3.50
Nov-92	6.27	2.73	2.78	7.75	2.91	2.72	4.42	8.00	3.79	3.32	4.43	4.15	3.50
Dec-92	6.27	2.87	2.78	7.75	2.96	2.60	4.60	8.00	3.80	3.52	4.43	4.15	3.51
Jan-93	6.27	3.01	2.78	11.50	2.86	2.60	5.46	7.67	3.66	3.52	4.43	4.22	3.86
Feb-93	5.82	3.01	2.78	11.50	2.86	2.60	5.46	7.67	3.63	3.52	4.43	4.22	3.86
Mar-93	5.82	3.01	2.60	10.75	3.10	2.63	5.72	7.50	3.74	3.52	4.43	4.01	3.86
Apr-93	5.82	3.01	2.60	10.75	3.07	2.63	5.72	7.67	3.73	3.52	4.43	4.05	4.09
May-93	5.50	2.82	3.50	10.75	2.82	2.72	5.61	7.40	3.51	4.50	4.33	4.46	4.13
Jun-93	5.50	2.87	3.29	10.75	2.85	2.73	5.61	7.40	3.51	4.50	4.33	4.39	4.08
Jul-93	5.36	2.87	3.25	10.75	2.76	2.73	5.38	7.40	3.46	4.50	4.71	4.53	4.12
Aug-93	5.36	2.87	3.25	10.17	2.81	2.73	7.33	7.00	3.47	4.33	4.71	4.44	4.05
Sep-93	5.27	2.87	3.25	10.17	2.81	2.73	7.33	7.00	3.47	4.33	4.71	4.41	4.05
Oct-93	5.08	2.87	3.34	10.17	2.73	2.73	7.33	7.00	3.11	4.33	4.71	4.71	4.49
Nov-93	4.38	2.73	3.40	10.83	2.64	2.80	7.33	7.00	3.11	4.00	4.44	4.65	4.49
Dec-93	4.38	2.73	3.40	10.83	2.64	2.80	7.33	6.33	3.11	4.00	4.25	4.65	4.49
Jan-94	4.19	2.73	3.40	10.83	2.56	2.80	7.33	6.33	3.19	4.00	4.25	4.65	4.21
Feb-94	4.19	2.73	3.40	9.17	2.37	2.80	7.50	6.33	3.15	4.00	4.33	4.56	3.65
Mar-94	4.38	2.73	3.40	9.17	2.40	2.80	7.50	6.33	3.12	4.00	4.33	4.60	3.75
Apr-94	4.32	2.73	3.17	8.00	2.40	2.80	7.80	6.33	3.12	4.00	4.33	4.57	3.58
May-94	4.61	2.85	3.17	9.50	2.42	2.77	7.83	6.80	3.25	4.00	4.33	4.38	3.77
Jun-94	4.61	2.62	3.17	9.50	2.41	2.77	7.83	6.80	3.18	4.00	4.50	4.05	3.89
Jul-94	4.39	2.82	3.28	9.50	2.49	2.82	7.83	6.62	3.26	4.00	4.25	4.21	4.14
Aug-94	4.28	3.02	3.12	9.50	2.26	2.62	7.83	6.62	3.34	3.33	4.13	4.17	3.50
Sep-94	4.30	3.02	2.96	7.83	2.26	2.62	7.36	6.67	3.44	3.25	4.13	4.15	3.62
Oct-94	4.27	3.02	2.79	7.83	2.15	2.62	4.93	6.67	3.40	3.25	3.98	4.38	3.56
Nov-94	4.27	2.82	2.79	7.83	2.06	2.62	4.93	6.67	3.44	3.25	3.98	4.33	3.40
Dec-94	4.27	2.62	2.79	7.83	2.28	2.62	4.93	6.67	3.44	3.25	3.98	4.45	3.51
Jan-95	4.10	2.62	2.64	7.83	2.02	2.42	4.64	6.80	3.49	3.25	3.97	4.45	3.70
Feb-95	4.15	2.62	2.64	7.17	2.02	2.42	4.42	6.42	3.37	3.25	3.97	4.49	3.70
Mar-95	4.35	3.22	2.64	7.17	1.91	3.02	4.75	6.42	3.26	3.25	3.97	4.34	3.40
Apr-95	4.35	4.22	2.64	7.17	1.96	2.78	4.79	6.58	3.28	3.25	3.97	4.20	3.40
May-95	4.35	4.22	2.64	7.50	1.84	2.78	4.79	6.75	3.28	3.25	3.97	3.98	3.34
Jun-95	4.28	4.53	2.64	8.00	1.67	2.78	4.79	6.75	3.37	3.25	3.92	3.95	3.34
Jul-95	4.67	4.53	2.64	8.25	1.67	2.78	4.75	6.75	3.37	3.25	3.58	3.95	3.34
Aug-95	4.70	4.53	2.49	7.60	1.35	2.78	4.75	6.75	3.37	3.25	3.58	3.73	3.15
Sep-95	4.75	4.53	2.49	7.60	1.35	2.78	4.83	6.75	3.41	3.00	3.58	3.62	3.15
Oct-95	4.95	4.03	2.27	7.60	1.21	2.78	4.83	6.75	3.42	3.00	3.58	3.55	3.15
Nov-95	5.11	4.03	2.27	7.60	1.21	2.78	4.83	7.20	3.46	3.00	4.00	3.55	3.15
Dec-95	4.89	5.28	2.64	7.40	0.84	2.87	4.83	7.20	3.76	3.00	4.00	3.92	3.15
Jan-96	4.89	5.28	2.64	7.40	0.84	2.87	4.83	7.20	3.76	3.08	4.00	3.85	3.15
Feb-96	4.89	5.28	2.64	7.60	0.69	2.87	4.92	7.20	3.84	3.08	4.00	3.85	3.25
Mar-96	4.50	5.42	2.83	7.00	0.53	2.65	4.92	6.40	3.79	3.50	4.00	3.73	3.05
Apr-96	4.89	5.42	2.83	7.00	0.89	2.65	4.92	6.38	3.87	3.50	4.00	4.04	3.13
May-96	4.89	5.28	2.80	8.60	0.97	2.78	4.75	6.38	3.77	3.67	4.17	4.13	3.25
Jun-96	5.00	5.28	2.80	8.60	1.14	2.78	4.75	6.40	3.85	3.67	4.17	4.13	3.25
Jul-96	5.00	5.28	2.80	8.60	1.14	2.78	4.75	6.40	3.81	3.67	4.17	4.04	3.35
Aug-96	5.00	4.82	2.82	8.60	1.29	2.86	4.75	6.40	3.87	3.67	4.17	3.92	3.42
Sep-96	4.90	4.68	2.68	8.60	1.29	2.86	5.07	6.40	3.81	3.67	4.13	3.88	3.38
Oct-96	4.90	4.68	2.70	8.60	1.25	2.72	5.07	6.40	3.73	3.67	4.13	3.88	3.35
Nov-96	4.90	4.68	2.70	9.20	1.25	2.72	4.93	6.40	3.81	3.67	4.06	3.90	3.35
Dec-96	4.90	4.68	2.70	9.00	1.33	2.76	4.93	6.40	3.82	3.67	4.07	3.91	3.33
Jan-97	5.11	4.68	2.33	9.00	1.50	2.74	4.93	6.40	3.65	3.67	4.07	3.96	3.27
Feb-97	5.19	4.68	2.33	9.13	1.50	2.74	4.74	6.67	3.51	3.67	4.21	3.93	3.26
Mar-97	5.07	4.68	2.35	7.80	1.86	2.70	4.74	6.25	3.60	3.67	4.44	4.00	3.11
Apr-97	5.06	4.68	2.25	7.80	1.75	2.82	4.74	6.00	3.63	3.67	4.44	4.04	3.29
May-97	5.07	4.68	2.25	7.80	1.75	2.82	5.12	6.00	3.67	3.67	4.44	4.04	3.29
Jun-97	5.07	4.85	2.25	8.66	1.75	2.82	5.02	5.86	3.63	3.67	4.64	4.04	3.27
Jul-97	5.07	5.42	2.30	8.66	1.86	2.82	5.02	5.86	3.57	4.50	4.64	4.14	3.52
Aug-97	5.07	5.42	2.30	8.82	1.88	2.82	5.02	5.86	3.57	3.67	4.64	3.79	3.52
Sep-97	5.07												

Dividend Yield 1 Growth

	AGL Resource s	ALLETE	Alliant Energy	Atmos Energy	Consolid ated Edison	Integrys	Northwes t Nat. Gas	Piedmont Natural Gas Southern	Vectren Corp	WGL Holdings Inc.	Wisconsin Energy	Xcel Energy	
Jan-90	7.70	7.43	8.11	6.90	6.57	7.66	6.88	7.06	8.18	6.83	6.94	5.87	6.21
Feb-90	7.49	7.61	7.89	6.95	7.18	7.75	6.78	6.90	8.45	7.06	7.15	6.03	6.34
Mar-90	7.21	7.61	7.63	6.63	7.28	7.91	6.97	7.08	8.41	6.79	6.95	6.10	6.35
Apr-90	7.33	7.83	7.93	7.07	7.97	8.13	7.02	7.28	9.08	6.89	7.48	6.40	6.89
May-90	7.26	7.66	8.07	6.96	8.08	7.81	7.02	7.02	8.86	6.63	7.06	6.53	6.42
Jun-90	6.65	7.77	7.98	7.28	8.04	7.80	6.44	7.06	8.75	6.85	7.09	6.35	6.37
Jul-90	6.68	7.58	8.17	7.02	7.52	7.89	7.15	7.12	8.61	6.82	7.24	6.24	6.72
Aug-90	7.37	8.36	8.39	6.72	8.63	8.02	7.39	7.47	9.37	6.76	7.50	6.59	8.01
Sep-90	6.89	8.52	8.59	7.17	8.92	8.11	7.12	7.06	9.27	6.73	7.25	6.59	7.96
Oct-90	6.74	7.60	7.75	7.33	8.03	7.25	7.12	6.76	8.48	6.50	7.70	6.04	7.37
Nov-90	7.05	7.54	7.39	7.49	8.16	7.29	6.68	6.44	8.19	5.92	7.85	5.85	7.26
Dec-90	7.14	7.33	7.31	7.54	7.89	7.22	6.83	6.38	7.89	6.02	7.23	5.79	7.05
Jan-91	7.05	7.23	7.72	7.96	7.94	7.47	6.80	6.27	8.46	6.26	7.63	5.82	7.18
Feb-91	7.08	7.08	7.23	7.27	7.94	6.91	6.52	6.66	7.98	5.87	7.27	5.69	7.03
Mar-91	6.87	7.19	7.06	7.38	7.40	6.94	6.46	6.69	7.70	5.75	7.45	5.35	6.76
Apr-91	6.53	6.82	7.18	7.65	7.76	6.74	6.25	7.31	7.98	5.97	7.56	5.54	7.20
May-91	6.87	6.76	6.98	7.22	7.87	7.05	6.18	6.82	8.13	6.13	7.56	5.85	7.09
Jun-91	6.78	7.36	7.18	7.27	7.75	7.05	6.71	6.85	8.02	6.03	7.71	5.99	6.96
Jul-91	6.73	7.10	6.98	7.07	7.52	6.80	6.23	6.51	7.98	5.53	7.26	5.69	7.02
Aug-91	6.27	6.90	6.58	6.61	7.54	6.73	6.07	6.11	8.06	5.94	7.17	5.55	6.67
Sep-91	6.29	6.75	6.17	6.21	7.54	6.61	5.91	6.31	7.32	5.52	6.45	5.27	6.39
Oct-91	6.07	6.64	6.38	6.48	7.41	6.61	5.62	6.29	7.35	5.74	6.37	5.29	6.34
Nov-91	6.18	6.58	6.17	6.42	7.34	6.54	5.92	6.19	7.03	5.09	6.42	5.20	6.15
Dec-91	5.91	6.02	5.65	5.79	6.66	6.20	6.26	5.62	6.43	5.37	6.32	4.93	5.87
Jan-92	6.29	6.29	6.35	6.42	6.89	6.34	5.90	5.78	6.95	5.09	6.57	5.13	6.19
Feb-92	6.75	6.44	6.09	6.54	7.55	6.67	5.89	5.65	7.30	5.21	6.47	5.19	6.22
Mar-92	6.71	6.52	6.14	6.66	7.23	6.48	6.09	6.21	7.13	5.35	6.83	5.24	6.44
Apr-92	6.71	6.37	5.84	6.78	6.97	6.31	6.66	6.23	6.91	5.33	6.75	5.01	6.22
May-92	6.21	6.46	5.60	6.69	6.87	6.20	6.06	5.75	6.72	5.30	6.33	5.20	6.17
Jun-92	6.11	6.31	5.66	6.86	6.96	5.93	5.95	5.83	6.52	5.41	6.15	5.10	#DIV/0!
Jul-92	5.99	5.95	5.35	6.57	6.26	5.45	5.76	5.38	6.00	5.26	6.12	4.83	5.97
Aug-92	5.70	6.00	5.56	5.88	6.34	5.74	5.67	5.36	6.09	5.21	5.80	4.98	5.99
Sep-92	5.85	5.91	5.36	5.98	6.23	5.58	5.60	5.12	5.98	5.18	5.74	5.04	6.07
Oct-92	6.35	6.14	5.63	6.01	6.26	5.66	6.01	5.02	6.16	5.32	5.90	5.21	6.14
Nov-92	6.45	5.95	5.97	5.92	6.21	5.65	6.25	5.02	6.34	5.30	6.18	5.34	6.01
Dec-92	5.86	5.83	5.64	5.86	6.00	5.62	6.32	5.16	5.93	5.40	5.80	5.11	6.03
Jan-93	5.74	5.78	5.85	6.10	5.81	5.56	6.10	5.06	6.12	4.96	5.97	5.16	5.95
Feb-93	5.38	5.63	5.60	5.67	5.66	5.19	5.68	4.54	5.73	4.84	5.61	4.86	5.60
Mar-93	5.24	5.69	5.34	5.69	5.61	5.19	5.90	4.82	5.55	4.57	5.05	4.87	5.61
Apr-93	5.45	5.75	5.57	5.24	5.65	5.29	5.92	4.48	5.61	4.61	5.53	4.92	5.78
May-93	5.63	5.88	5.74	5.05	5.85	5.44	5.46	4.80	5.81	5.01	5.59	5.30	5.95
Jun-93	5.47	5.78	5.55	5.03	5.66	5.24	5.46	4.65	5.60	5.05	5.21	5.12	5.72
Jul-93	5.44	5.66	5.55	4.78	5.48	5.09	5.11	4.34	5.68	4.60	5.20	5.13	5.85
Aug-93	5.75	5.62	5.45	4.64	5.43	5.26	5.21	4.15	5.30	4.46	5.17	4.93	5.67
Sep-93	5.82	5.74	5.51	4.62	5.52	5.08	5.08	4.15	5.24	4.54	5.04	4.90	5.78
Oct-93	5.95	6.22	5.61	4.52	5.74	5.17	5.21	4.15	5.24	4.65	5.33	4.90	6.07
Nov-93	5.99	6.62	6.24	5.34	6.40	5.65	5.39	4.95	5.44	4.87	5.58	5.23	6.37
Dec-93	5.58	6.22	5.98	5.30	6.20	5.44	5.51	5.20	5.33	4.87	5.52	5.16	6.24
Jan-94	5.61	6.41	6.40	5.00	6.37	5.79	5.24	4.81	5.41	4.68	5.49	5.30	6.15
Feb-94	6.10	7.15	6.85	4.88	6.91	6.34	5.29	4.68	5.92	5.04	5.68	5.67	6.47
Mar-94	6.29	7.03	6.70	5.39	7.03	6.26	5.60	5.27	6.40	5.54	5.77	5.62	6.54
Apr-94	6.05	6.97	6.52	4.96	6.69	6.10	5.62	5.23	6.24	5.30	6.01	5.43	6.35
May-94	6.31	7.95	7.17	5.21	7.42	6.42	6.11	5.55	6.59	5.36	6.11	5.82	6.54
Jun-94	6.42	8.01	7.27	5.24	7.73	6.48	6.32	5.49	6.49	5.81	6.16	6.14	6.53
Jul-94	6.20	7.80	7.02	5.43	7.13	6.28	6.37	5.19	6.29	5.50	6.10	5.64	6.43
Aug-94	6.62	7.70	6.63	5.67	7.51	6.41	6.22	5.28	6.46	5.66	6.09	5.64	6.32
Sep-94	7.08	7.96	7.03	5.35	8.22	6.61	5.90	5.16	6.55	5.51	6.46	5.78	6.47
Oct-94	6.67	7.96	6.99	5.79	8.21	6.79	6.15	5.51	6.14	5.62	6.45	5.55	6.16
Nov-94	7.32	8.02	7.14	5.71	7.89	6.95	6.42	5.65	5.88	6.17	6.93	5.65	6.05
Dec-94	7.23	8.20	7.21	5.84	7.94	6.98	6.25	5.88	6.10	5.35	6.90	5.68	6.21
Jan-95	6.77	8.12	6.81	6.06	7.22	6.54	6.06	5.88	6.05	5.73	6.70	5.25	5.92
Feb-95	6.42	8.09	6.61	5.44	7.53	6.35	6.07	5.60	6.11	5.84	6.06	5.30	6.05
Mar-95	6.25	8.34	6.93	5.33	7.63	6.47	5.89	5.77	6.18	5.88	5.73	5.42	6.20
Apr-95	5.95	8.14	7.02	5.26	7.50	6.45	5.95	5.77	6.11	5.96	5.97	5.29	6.17
May-95	6.34	7.73	6.87	5.14	6.95	6.40	6.22	5.78	5.69	5.58	6.01	5.30	5.76
Jun-95	6.24	7.83	6.96	4.91	7.03	6.40	5.90	5.68	5.64	5.77	6.17	5.46	5.91
Jul-95	6.22	7.75	7.05	4.98	7.15	6.45	5.85	5.93	5.73	5.66	6.36	5.46	6.31
Aug-95	5.91	7.93	6.98	4.98	7.32	6.62	5.94	5.78	5.97	5.47	6.07	5.68	6.54
Sep-95	5.64	7.65	6.80	5.11	6.81	6.29	5.94	5.89	5.37	5.23	5.84	5.38	6.15
Oct-95	5.65	7.41	6.51	5.39	6.80	6.14	5.90	5.36	5.28	5.36	6.07	5.17	5.90
Nov-95	5.83	7.65	6.40	4.95	7.18	6.02	5.63	5.04	5.52	4.76	5.58	5.17	5.93
Dec-95	5.63	7.57	6.50	4.48	6.48	5.63	5.72	5.09	5.14	4.74	5.68	4.99	5.68
Jan-96	5.49	7.44	6.43	4.85	6.10	5.65	5.67	5.06	4.99	4.69	5.32	4.85	5.43
Feb-96	6.13	7.85	6.53	4.57	6.47	5.80	5.72	5.26	5.48	4.53	5.32	5.29	5.67
Mar-96	6.03	7.75	6.57	4.47	6.56	5.68	5.95	5.55	5.48	4.74	5.32	5.38	5.72
Apr-96	5.89	8.04	6.82	4.15	7.14	6.06	5.81	5.71	5.95	4.76	5.65	5.75	5.98
May-96	6.31	7.99	6.70	4.32	7.53	6.17	5.51	5.71	5.65	4.80	5.72	5.65	5.94
Jun-96	5.90	7.41	6.17	3.40	7.19	6.04	5.39	5.34	5.31	3.98	5.40	5.48	5.65
Jul-96	6.10	7.77	6.44	4.88	7.79	6.09	5.45	5.22	5.78	4.51	5.72	5.94	6.37
Aug-96	5.50	7.96	6.65	4.56	8.06	6.25	5.31	4.99	5.82	4.66	5.43	5.74	6.26
Sep-96	5.81	8.02	6.95	4.46	7.59	6.43	5.48	5.12	5.81	4.85	5.40	5.85	6.12
Oct-96	5.29	7.56	7.20	4.39	7.20	6.56	4.97	5.04	5.91	4.83	5.31	5.82	6.07
Nov-96	5.36	7.59	7.20	4.43	7.26	6.64	5.04	4.91	5.88	4.90	4.97	5.90	6.05
Dec-96	5.36	7.77	7.20	4.57	7.24	6.85	5.25	5.28	5.78	4.85	5.24	5.88	6.22
Jan-97	5.44	7.46	7.28	4.79	6.81	7.03	5.04	5.12	6.16	4.78	5.36	6.11	6.18
Feb-97	5.83	7.63	7.38	4.45	6.90	7.26	5.18	5.24	6.19	4.55	5.37	6.16	5.98
Mar-97	6.09	7.66	7.48	4.25	7.13	7.51	5.13	5.65	6.38	4.80	5.29	6.45	6.01
Apr-97	5.89	7.66	7.54	4.76	7.70	7.93	5.18	5.52	6.61	4.88	5.42	6.33	6.27
May-97	5.93	7.36	7.40	4.66	7.34	7.34	5.18	5.32	6.38	4.96	5.00	6.64	5.82
Jun-97	5.50	7.04	7.32	4.53	7.26	7.30	4.81	5.04	6.16	4.84	4.91	6.44	5.51
Jul-97	5.42	6.54	7.41	4.52	6.76	6.96	4.85	5.18	6.14	4.87	4.78	6.27	5.67
Aug-97	5.99	6.26	7.39	4.07	6.99	7.14	5.04	4.90	6.39	4.80	4.85	6.25	6.06
Sep-97	5.99	5.94	7.15										

DCF Cost 1 Growth

	AGL Resource s	ALLETE	Alliant Energy	Atmos Energy	Consolidated Edison	Northwest t Nat. Gas	Piedmont Natural Gas	Southern	Vectren Corp	WGL Holdings Inc.	Wisconsin Energy	Xcel Energy	
Jan-90	15.24	11.32	11.26	11.90	10.69	11.69	10.88	25.66	11.19	11.59	12.34	10.96	10.21
Feb-90	15.03	11.50	11.04	11.95	11.30	11.78	10.78	25.50	11.38	11.82	12.55	11.12	10.34
Mar-90	14.84	11.50	10.81	9.63	11.26	11.72	11.72	24.58	11.40	11.55	11.95	11.00	10.14
Apr-90	13.96	12.16	11.08	10.07	11.92	12.23	11.02	24.78	12.27	11.85	12.48	11.22	10.70
May-90	14.17	11.70	10.74	9.96	11.90	11.45	11.42	24.52	12.15	11.59	11.39	11.07	10.04
Jun-90	13.56	11.81	10.65	11.78	11.87	10.72	10.64	22.06	11.81	11.13	11.84	10.79	9.92
Jul-90	13.60	11.62	10.84	11.52	10.82	10.81	11.35	22.12	11.47	11.40	11.99	10.58	10.31
Aug-90	14.09	12.34	10.89	11.22	11.76	10.68	11.72	22.47	12.08	11.16	12.30	10.78	11.17
Sep-90	13.61	12.29	11.04	11.67	11.90	10.74	11.45	22.06	11.97	10.66	12.05	10.73	11.27
Oct-90	13.27	11.37	10.20	11.83	11.20	9.88	11.45	18.39	11.31	10.43	12.50	10.10	10.94
Nov-90	13.77	11.03	10.34	11.99	11.32	9.92	11.01	18.07	10.86	9.85	12.65	9.89	10.86
Dec-90	13.86	10.84	10.26	12.04	10.31	9.91	11.54	18.01	10.42	10.12	11.73	9.66	10.31
Jan-91	13.80	10.74	10.67	12.46	10.51	10.44	11.51	17.77	11.05	10.36	12.30	9.76	10.51
Feb-91	13.83	10.59	10.18	11.77	10.39	9.88	11.23	18.16	10.84	9.97	11.98	9.63	10.45
Mar-91	13.37	10.43	10.01	11.88	9.85	9.91	11.17	16.02	10.56	9.85	11.95	9.29	10.18
Apr-91	13.03	10.06	9.96	13.65	10.46	9.71	10.96	15.81	10.81	9.69	12.16	9.51	11.15
May-91	13.37	10.00	9.76	13.22	10.50	10.02	11.04	15.32	10.96	9.85	12.16	10.04	11.04
Jun-91	12.74	10.60	9.96	13.27	10.38	10.02	11.57	15.35	10.85	9.75	12.14	10.26	10.91
Jul-91	12.78	10.34	9.76	13.07	10.17	9.77	11.06	13.76	10.79	9.25	11.59	10.03	10.90
Aug-91	12.32	10.00	9.36	15.36	10.42	9.70	10.90	13.36	10.93	9.66	11.50	9.96	10.59
Sep-91	12.34	9.85	8.98	14.96	10.34	9.58	10.48	13.91	10.19	9.24	10.62	9.47	10.27
Oct-91	12.12	9.74	9.16	15.23	10.06	9.58	10.12	13.99	10.22	9.46	10.08	9.49	10.32
Nov-91	12.23	9.68	8.95	13.67	9.99	9.51	10.42	13.89	9.97	8.81	10.13	9.32	10.13
Dec-91	11.96	9.12	8.43	13.04	9.20	9.17	10.76	12.22	9.50	9.09	10.03	9.05	9.95
Jan-92	12.24	9.39	9.13	13.67	9.23	9.31	10.40	13.78	10.02	8.81	10.43	9.33	10.27
Feb-92	12.70	9.25	8.87	13.79	10.35	9.64	10.22	13.65	10.57	8.53	10.33	9.49	10.47
Mar-92	12.41	9.33	8.92	13.91	9.95	9.45	10.48	14.21	10.37	8.67	10.69	9.54	10.69
Apr-92	12.41	8.96	8.62	14.53	9.63	9.28	11.05	14.23	10.20	8.65	10.61	9.29	10.50
May-92	11.91	9.19	8.38	14.44	9.51	8.72	10.78	13.55	9.88	8.62	10.33	9.56	10.25
Jun-92	11.89	9.04	8.44	14.61	9.56	8.45	10.45	13.63	9.81	8.93	10.15	9.46	#DIV/0!
Jul-92	11.77	8.68	8.13	14.32	9.17	7.72	10.26	13.18	9.23	8.78	10.29	9.29	9.66
Aug-92	11.48	8.73	8.34	13.63	9.30	8.01	10.17	13.16	9.28	8.53	9.97	9.38	9.42
Sep-92	11.63	8.64	7.98	13.73	9.14	7.85	10.39	12.92	9.27	8.50	9.91	9.29	9.57
Oct-92	12.13	8.87	8.25	13.76	9.17	8.09	10.80	12.82	9.45	8.64	10.07	9.42	9.64
Nov-92	12.72	8.68	8.75	13.67	9.12	8.37	10.67	13.02	10.13	8.62	10.61	9.49	9.51
Dec-92	12.13	8.70	8.42	13.61	8.96	8.22	10.92	13.16	9.73	8.92	10.23	9.26	9.54
Jan-93	12.01	8.79	8.63	17.60	8.67	8.16	11.56	12.73	9.78	8.48	10.40	9.38	9.81
Feb-93	11.20	8.64	8.38	17.17	8.52	7.79	11.14	12.21	9.36	8.36	10.04	9.08	9.46
Mar-93	11.06	8.70	7.94	16.44	8.71	7.82	11.62	12.32	9.29	8.09	9.48	8.88	9.47
Apr-93	11.27	8.76	8.17	15.99	8.72	7.92	11.64	12.15	9.34	8.13	9.96	8.97	9.87
May-93	11.13	8.70	9.24	15.80	8.67	8.16	11.07	12.20	9.32	9.51	9.92	9.76	10.08
Jun-93	10.97	8.65	8.84	15.78	8.51	7.97	11.07	12.05	9.11	9.55	9.54	9.51	9.80
Jul-93	10.80	8.53	8.80	15.53	8.24	7.82	10.49	11.74	9.14	9.10	9.91	9.66	9.97
Aug-93	11.11	8.49	8.70	14.81	8.24	7.99	12.54	11.15	8.77	8.79	9.88	9.37	9.72
Sep-93	11.09	8.61	8.76	14.79	8.33	7.81	12.41	11.15	8.71	8.87	9.75	9.31	9.83
Oct-93	11.03	9.09	8.95	14.69	8.47	7.90	12.54	11.15	8.35	8.98	10.04	9.61	10.56
Nov-93	10.37	9.35	9.64	16.17	9.04	8.45	12.72	11.95	8.55	8.87	10.02	9.88	10.86
Dec-93	9.96	8.95	9.38	16.13	8.84	8.24	12.84	11.53	8.44	8.87	9.77	9.81	10.73
Jan-94	9.80	9.14	9.80	15.83	8.93	8.59	12.57	11.14	8.60	8.68	9.74	9.95	10.36
Feb-94	10.29	9.88	10.25	14.05	9.28	9.14	12.79	11.01	9.07	9.04	10.01	10.23	10.12
Mar-94	10.67	9.76	10.10	14.56	9.43	9.06	13.10	11.60	9.52	9.54	10.10	10.22	10.29
Apr-94	10.37	9.70	9.69	12.96	9.09	8.90	13.42	11.56	9.36	9.30	10.34	10.00	9.93
May-94	10.92	10.80	10.34	14.71	9.84	9.19	13.94	12.35	9.84	9.36	10.44	10.20	10.31
Jun-94	11.03	10.63	10.44	14.74	10.14	9.25	14.15	12.29	9.67	9.81	10.66	10.19	10.42
Jul-94	10.59	10.62	10.30	14.93	9.62	9.10	14.20	11.81	9.55	9.50	10.35	9.85	10.57
Aug-94	10.90	10.72	9.75	15.17	9.77	9.03	14.05	11.90	9.80	8.99	10.22	9.81	9.82
Sep-94	11.38	10.98	9.99	13.18	10.48	9.23	13.26	11.83	9.99	8.76	10.59	9.93	10.09
Oct-94	10.94	10.98	9.78	13.62	10.36	9.41	11.08	12.18	9.54	8.87	10.43	9.93	9.72
Nov-94	11.59	10.84	9.93	13.54	9.95	9.57	11.35	12.32	9.32	9.42	10.91	9.98	9.45
Dec-94	11.50	10.82	10.00	13.67	10.22	9.60	11.18	12.55	9.54	8.60	10.88	10.13	9.72
Jan-95	10.87	10.74	9.45	13.89	9.24	8.96	10.70	12.68	9.54	8.98	10.67	9.70	9.62
Feb-95	10.57	10.71	9.25	12.61	9.55	8.77	10.49	12.02	9.48	9.09	10.03	9.79	9.75
Mar-95	10.60	11.56	9.57	12.50	9.54	9.49	10.64	12.19	9.44	9.13	9.70	9.76	9.60
Apr-95	10.30	12.36	9.66	12.43	9.46	9.23	10.74	12.35	9.39	9.21	9.94	9.49	9.57
May-95	10.69	11.95	9.51	12.64	8.79	9.18	11.01	12.53	8.97	8.83	9.98	9.28	9.10
Jun-95	10.52	12.36	9.60	12.91	8.70	9.18	10.69	12.43	9.01	9.02	10.09	9.41	9.25
Jul-95	10.89	12.28	9.69	13.23	8.82	9.23	10.60	12.68	9.10	8.91	9.94	9.41	9.65
Aug-95	10.61	12.46	9.47	12.58	8.67	9.40	10.69	12.53	9.34	8.72	9.65	9.41	9.69
Sep-95	10.39	12.18	9.29	12.71	8.16	9.07	10.77	12.64	8.78	8.23	9.42	9.00	9.30
Oct-95	10.60	11.44	8.78	12.99	8.01	8.92	10.73	12.11	8.70	8.36	9.65	8.72	9.05
Nov-95	10.94	11.68	8.67	12.55	8.39	8.80	10.46	12.24	8.98	7.76	9.58	8.72	9.08
Dec-95	10.52	12.85	9.14	11.88	7.32	8.50	10.55	12.29	8.90	7.74	9.68	8.91	8.83
Jan-96	10.38	12.72	9.07	12.25	6.94	8.52	10.50	12.26	8.75	7.77	9.32	8.70	8.58
Feb-96	11.02	13.13	9.17	12.17	7.16	8.67	10.64	12.46	9.32	7.61	9.32	9.14	8.92
Mar-96	10.53	13.17	9.40	11.47	7.09	8.33	10.87	11.95	9.27	8.24	9.32	9.11	8.77
Apr-96	10.78	13.46	9.65	11.15	8.03	8.71	10.73	12.09	9.82	8.26	9.65	9.79	9.11
May-96	11.20	13.27	9.50	12.92	8.50	8.95	10.26	12.09	9.42	8.47	9.89	9.78	9.19
Jun-96	10.90	12.69	8.97	12.00	8.33	8.82	10.14	11.74	9.16	7.65	9.57	9.61	8.90
Jul-96	11.10	13.05	9.24	13.48	8.93	8.87	10.20	11.62	9.59	8.18	9.89	9.98	9.72
Aug-96	10.50	12.78	9.47	13.16	9.35	9.11	10.06	11.39	9.69	8.33	9.60	9.66	9.68
Sep-96	10.71	12.70	9.63	13.06	8.88	9.29	10.55	11.52	9.62	8.52	9.53	9.73	9.50
Oct-96	10.19	12.24	9.90	12.99	8.45	9.28	10.04	11.44	9.64	8.50	9.44	9.70	9.42
Nov-96	10.26	12.27	9.90	13.63	8.51	9.36	9.97	11.31	9.69	8.57	9.03	9.80	9.40
Dec-96	10.26	12.45	9.90	13.57	8.57	9.61	10.18	11.68	9.60	8.52	9.31	9.79	9.55
Jan-97	10.55	12.14	9.61	13.79	8.31	9.77	9.97	11.52	9.81	8.45	9.43	10.07	9.45
Feb-97	11.02	12.31	9.71	13.58	8.40	10.00	9.92	11.91	9.70	8.22	9.58	10.09	9.24
Mar-97	11.16	12.34	9.83	12.05	8.99	10.21	9.87	11.90	9.98	8.47	9.73	10.45	9.12
Apr-97	10.95	12.34	9.79	12.56	9.45	10.75	9.92						

	Medians					DCF Costs			
	Price	Dividend	DY	Growth	DY(1+G)	Constant Growth	Moody's A Rated DCF	from Three Stage	Implied Growth
Jan-90	13.69	0.25	6.59	4.12	6.86	10.98	9.56	12.74	6.15
Feb-90	14.06	0.25	6.79	4.12	7.07	11.19	9.76	12.93	6.14
Mar-90	14.63	0.25	6.65	3.98	6.92	10.90	9.85	12.51	5.86
Apr-90	14.25	0.26	6.88	4.10	7.16	11.26	9.92	12.77	5.89
May-90	14.44	0.26	6.77	4.04	7.05	11.09	10.00	12.65	5.87
Jun-90	15.06	0.26	6.77	4.20	7.06	11.26	9.80	12.71	5.94
Jul-90	14.75	0.26	6.86	4.20	7.15	11.35	9.75	12.79	5.93
Aug-90	14.19	0.26	7.16	4.19	7.46	11.65	9.92	13.08	5.92
Sep-90	14.75	0.26	6.92	3.93	7.19	11.12	10.12	12.74	5.83
Oct-90	13.88	0.26	7.06	3.93	7.34	11.27	10.05	12.95	5.88
Nov-90	13.63	0.26	7.10	3.93	7.38	11.31	9.90	12.98	5.88
Dec-90	14.75	0.26	6.92	3.87	7.18	11.05	9.73	12.78	5.87
Jan-91	14.00	0.26	6.98	3.94	7.26	11.20	9.71	12.87	5.89
Feb-91	14.69	0.26	6.80	3.94	7.07	11.01	9.47	12.70	5.90
Mar-91	14.31	0.26	6.74	3.94	7.01	10.95	9.55	12.51	5.77
Apr-91	14.56	0.26	6.74	3.95	7.00	10.95	9.46	12.51	5.78
May-91	14.56	0.26	6.79	3.95	7.06	11.01	9.44	12.57	5.78
Jun-91	14.25	0.26	6.85	3.95	7.12	11.07	9.59	12.62	5.77
Jul-91	15.13	0.26	6.67	3.88	6.93	10.81	9.55	12.42	5.75
Aug-91	15.31	0.26	6.40	3.92	6.65	10.57	9.29	12.18	5.78
Sep-91	17.00	0.26	6.00	3.88	6.23	10.11	9.16	11.78	5.78
Oct-91	17.13	0.26	6.10	3.72	6.32	10.04	9.12	11.68	5.58
Nov-91	17.00	0.26	5.99	3.72	6.21	9.93	9.05	11.57	5.58
Dec-91	17.25	0.26	5.64	3.72	5.85	9.57	8.88	11.23	5.59
Jan-92	16.63	0.26	5.99	3.86	6.22	10.08	8.84	11.62	5.63
Feb-92	16.00	0.26	6.10	3.86	6.33	10.19	8.93	11.72	5.63
Mar-92	16.00	0.26	6.21	3.86	6.45	10.31	8.97	11.85	5.64
Apr-92	16.44	0.27	6.21	3.86	6.45	10.31	8.93	11.85	5.64
May-92	17.63	0.27	5.93	4.00	6.17	10.17	8.87	11.63	5.70
Jun-92	17.72	0.27	#DIV/0!	3.87	#DIV/0!	9.87	8.78	11.44	#DIV/0!
Jul-92	18.38	0.27	5.66	3.69	5.87	9.56	8.57	11.26	5.60
Aug-92	19.25	0.27	5.46	3.43	5.65	9.08	8.44	10.98	5.52
Sep-92	19.00	0.27	5.51	3.50	5.71	9.21	8.40	11.06	5.54
Oct-92	18.44	0.27	5.66	3.50	5.86	9.36	8.54	11.02	5.36
Nov-92	18.00	0.27	5.81	3.79	6.03	9.82	8.63	11.27	5.46
Dec-92	19.00	0.27	5.51	3.80	5.72	9.52	8.43	10.98	5.47
Jan-93	19.25	0.27	5.61	3.86	5.82	9.68	8.27	11.09	5.48
Feb-93	20.44	0.27	5.38	3.86	5.58	9.44	8.04	10.86	5.49
Mar-93	21.00	0.27	5.14	3.86	5.34	9.20	7.90	10.81	5.67
Apr-93	20.63	0.27	5.29	4.05	5.51	9.56	7.81	11.02	5.73
May-93	20.31	0.27	5.33	4.33	5.56	9.89	7.86	11.15	5.82
Jun-93	21.06	0.27	5.17	4.33	5.39	9.72	7.75	10.99	5.82
Jul-93	20.75	0.27	4.96	4.50	5.19	9.69	7.54	10.83	5.87
Aug-93	22.13	0.27	5.12	4.33	5.34	9.67	7.25	10.94	5.82
Sep-93	22.50	0.27	4.94	4.33	5.16	9.49	7.04	10.76	5.82
Oct-93	21.44	0.27	5.08	4.49	5.31	9.80	7.03	10.80	5.72
Nov-93	20.44	0.27	5.34	4.38	5.58	9.96	7.30	11.03	5.69
Dec-93	20.63	0.27	5.29	4.25	5.52	9.77	7.34	10.94	5.64
Jan-94	20.75	0.27	5.26	4.19	5.48	9.67	7.33	10.89	5.62
Feb-94	20.06	0.27	5.74	4.00	5.97	9.97	7.42	11.30	5.56
Mar-94	19.00	0.27	6.03	4.00	6.27	10.27	7.85	11.55	5.52
Apr-94	19.31	0.28	5.80	4.00	6.03	10.03	8.22	11.32	5.52
May-94	18.50	0.28	6.03	4.00	6.27	10.27	8.33	11.55	5.52
Jun-94	18.75	0.28	6.14	4.00	6.39	10.39	8.31	11.66	5.52
Jul-94	19.00	0.28	5.94	4.14	6.19	10.33	8.47	11.51	5.57
Aug-94	18.88	0.28	6.10	3.50	6.32	9.82	8.41	11.45	5.34
Sep-94	17.94	0.28	6.25	3.62	6.47	10.09	8.64	11.63	5.38
Oct-94	17.94	0.28	5.95	3.56	6.16	9.72	8.86	11.24	5.29
Nov-94	17.38	0.28	6.11	3.44	6.33	9.77	8.98	11.36	5.24
Dec-94	17.00	0.28	6.00	3.51	6.21	9.72	8.76	11.27	5.27
Jan-95	17.25	0.28	5.84	3.70	6.06	9.76	8.73	11.18	5.34
Feb-95	19.06	0.28	5.83	3.70	6.05	9.75	8.52	11.17	5.34
Mar-95	20.19	0.28	5.99	3.40	6.19	9.59	8.37	11.09	5.10
Apr-95	19.50	0.28	5.78	3.97	6.01	9.98	8.27	11.08	5.30
May-95	19.38	0.28	5.78	3.97	6.01	9.98	7.91	11.08	5.30
Jun-95	20.25	0.28	5.72	3.92	5.95	9.87	7.60	11.01	5.28
Jul-95	20.00	0.28	5.94	3.58	6.16	9.74	7.70	11.11	5.16
Aug-95	19.88	0.28	5.78	3.58	5.98	9.56	7.83	10.94	5.17
Sep-95	19.88	0.28	5.64	3.58	5.84	9.42	7.62	10.80	5.17
Oct-95	19.31	0.28	5.63	3.55	5.82	9.37	7.46	10.49	4.86
Nov-95	20.88	0.28	5.37	3.55	5.56	9.11	7.43	10.24	4.86
Dec-95	22.00	0.28	5.45	3.92	5.67	9.59	7.23	10.44	4.99
Jan-96	21.88	0.28	5.23	3.85	5.44	9.29	7.22	10.19	4.96
Feb-96	22.00	0.28	5.45	3.85	5.66	9.51	7.37	10.42	4.96
Mar-96	21.88	0.28	5.53	3.79	5.74	9.53	7.73	9.99	4.46
Apr-96	21.67	0.29	5.62	4.00	5.84	9.84	7.89	10.15	4.54
May-96	22.83	0.29	5.49	4.13	5.72	9.85	7.98	10.07	4.58
Jun-96	23.33	0.29	5.26	4.13	5.48	9.61	8.06	9.83	4.56
Jul-96	21.38	0.29	5.71	4.04	5.94	9.98	8.02	10.26	4.55
Aug-96	22.50	0.29	5.53	3.92	5.74	9.66	7.84	10.03	4.50
Sep-96	22.50	0.29	5.60	3.88	5.82	9.70	8.01	10.09	4.49
Oct-96	22.38	0.29	5.60	3.88	5.82	9.70	7.77	10.10	4.49
Nov-96	23.56	0.29	5.66	3.90	5.88	9.78	7.49	10.17	4.50
Dec-96	22.63	0.29	5.57	3.91	5.79	9.70	7.59	10.38	4.81
Jan-97	22.13	0.29	5.87	3.96	6.11	10.07	7.77	10.71	4.83
Feb-97	22.13	0.29	5.80	3.93	6.02	9.95	7.64	10.62	4.82
Mar-97	22.50	0.29	5.83	4.00	6.06	10.06	7.87	10.67	4.85
Apr-97	22.63	0.30	6.07	4.04	6.31	10.35	8.03	10.93	4.87
May-97	23.13	0.30	5.65	4.04	5.88	9.92	7.89	10.50	4.86
Jun-97	24.00	0.30	5.33	4.04	5.55	9.59	7.72	10.14	4.81
Jul-97	24.06	0.30	5.48	4.50	5.73	10.23	7.48	10.45	4.97
Aug-97	24.06	0.30	5.85	3.79	6.07	9.86	7.51	10.59	4.74
Sep-97	24.88	0.30	5.66	3.79	5.87	9.66	7.47	10.39	4.73
Oct-97	24.63	0.30	5.60	3.67	5.80	9.47	7.35	10.29	4.69
Nov-97	26.56	0.30	5.27	3.67	5.47	9.14	7.25	9.96	4.69
Dec-97	29.13	0.30	4.83	3.76	5.02	8.78	7.16	9.54	4.70

DCF Costs of Equity for Sample of U.S. Utilities: Regression Results

CONSTANT GROWTH DCF MODEL

(1998-2012Q3)

$$\text{Return on Equity} = 7.51 + 0.14 (\text{30-Year Treasury Yield}) + 1.13 (\text{Spread})$$

Where Spread = Spread between A-rated Utility Bond Yields and 30-year Treasury

t-statistics:

$$\text{30-Year Treasury Yield} = 2.61$$

$$\text{Spread} = 13.28$$

$$R^2 = 53\%$$

ROE including 50 basis point flotation cost allowance:

$$\text{30-Yr Treasury Yield of 2.8\%; spread of 1.38\%} = \mathbf{10.0\%}$$

$$\text{30-Yr Treasury Yield of 4.25\%; spread of 1.38\%} = \mathbf{10.2\%}$$

THREE-STAGE GROWTH DCF MODEL

(1998-2012Q3)

$$\text{Return on Equity} = 7.52 + 0.30 (\text{30-Year Treasury Yield}) + 0.71 (\text{Spread})$$

Where Spread = Spread between A-rated Utility Bond Yields and 30-year Treasury

t-statistics:

$$\text{30-Year Treasury Yield} = 7.16$$

$$\text{Spread} = 11.17$$

$$R^2 = 54\%$$

ROE including 50 basis point flotation cost allowance:

$$\text{30-Yr Treasury Yield of 2.8\%; spread of 1.38\%} = \mathbf{9.8\%}$$

$$\text{30-Yr Treasury Yield of 4.25\%; spread of 1.38\%} = \mathbf{10.3\%}$$

Note: t-statistics measure the statistical significance of an independent variable in explaining the dependent variable. The higher the t-value, the greater the confidence in the coefficient as a predictor. R^2 is the proportion of the variability in the dependent variable that is explained by the independent variable(s).