

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 Q. State your name and business address.

2 A. My name is Thomas J. Clark. My business address is 6363 Main Street,
3 Williamsville, New York 14221.

4 Q. By whom are you employed and in what capacity?

5 A. I am employed by National Fuel Gas Distribution Corporation
6 ("Distribution" or "the Company") as a Senior Rate Analyst in Distribution's
7 Rates and Regulatory Affairs Department.

8 Q. Have you testified previously in this proceeding?

9 A. Yes, I have. I presented Statement No. 9.

10 Q. What are the subjects of your rebuttal testimony?

11 A. My rebuttal testimony will analyze the various positions proffered by Office
12 of Trial Staff ("OTS") witness Joseph Kubas, Office of Consumer Advocate
13 ("OCA") witness Richard Galligan and the Office of Small Business
14 Advocate ("OSBA") witness Robert D. Knecht in this case concerning
15 revenue allocation and rate design. I will also comment on part of the
16 testimony of John Wilson of the Community Action Association of
17 Pennsylvania.

18 Q. Have you summarized the revenue allocation proposals of the Company,
19 OTS, OCA, and OSBA?

20 A. Yes. The Company, OTS, OCA, and OSBA percentage allocation to
21 Distribution's rate classes of the proposed revenue increase are provided
22 in Exhibit 209, Schedule 1.

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 Q. Please summarize OTS witness Kubas' proposed revenue increase
2 allocation.

3 A. Mr. Kubas recommends that the increase be assigned to the revenue
4 classes as shown in OTS Exhibit No. 3, Schedule 9. He increased the
5 residential amount to \$22,631,000 an increase of \$2,470,000 from the
6 Company's initial proposal to put the Residential class more in line with his
7 cost of service study results. He decreased the amount to the
8 Commercial/Public Authority Service Classes from what the Company
9 proposed and assigned increases to the SVIS, IVIS and LVIS classes. He
10 assigned no increase to the LIS class. The customer charge for
11 Residential, Large Commercial/Public Authority, IVIS, LVIS and LIS
12 customers would be increased. There would be no increase in the
13 customer charge to Small Commercial/Public Authority LE 250 Mcf, Small
14 Commercial/Public Authority GT 250 Mcf and SVIS service classes. The
15 Administrative Charge for transportation customers would be eliminated.
16 He did not propose to eliminate the transportation inter/intrastate rate
17 differentials for Large Commercial/Public Authority, IVIS and LVIS
18 customer classes.

19 For Residential and Small Volume Commercial/Public Authority LE
20 250 Mcf customers he recommended no increase to the tailblock rate. In
21 OTS Exhibit No. 3, Schedule 4 he includes the Company's Merchant
22 Function Charge proposal in his rate design calculation. Staff witness

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 Janet Markovich recommended against the Company's proposal so it is
2 unclear what Staff's position is on this issue. Mr. Meini will address this in
3 his testimony along with the winter / non-winter gas cost rates.

4 Q. Please provide a summary of OCA witness Galligan's proposed revenue
5 increase allocation.

6 A. Mr. Galligan proposes that any increase allowed by the Commission be
7 allocated to all of the Company's rate classes, Residential, Small
8 Commercial and Public Authority (less than 250 Mcf annual consumption),
9 Small Commercial and Public Authority (greater than 250 Mcf annual
10 consumption), Large Commercial and Public Authority, SVIS, IVIS, LVIS
11 and LIS. He recommended that there should be no change to the
12 Residential customer charge of \$12.00. He did not address the rate
13 design of the rate classes other than Residential.

14 Q. Please provide a summary of OSBA witness Knecht's proposed revenue
15 allocation.

16 A. Mr. Knecht proposes to allocate the proposed revenue increase to
17 Residential and Small Commercial and Public Authority (less than 250 Mcf
18 annual consumption) Small Commercial and Public Authority (greater than
19 250 Mcf annual consumption) and Large Commercial and Public Authority
20 rate classes. Any decrease in the initial proposed revenue increase would
21 be adjusted in his First Dollar Relief calculation that is shown in Exhibit
22 IEC-4. He did not propose a rate structure for residential customers and

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 proposed an increase in the customer charge for Small Commercial and
2 Public Authority customers (less than 250 Mcf annual consumption) and
3 Small Commercial and Public Authority customers (greater than 250 Mcf
4 annual consumption). He proposed no increase to the customer charge
5 for Large Commercial and Public Authority customers. He agreed with the
6 Company's proposal to eliminate the administrative fee for transportation
7 customers. He also agreed with the Company proposal to eliminate the
8 difference in transportation interstate/interstate rates for LC&PA, IVIS and
9 LVIS customers. He also stated that if the Large Commercial and Public
10 Authority class is assigned a zero increase he recommended a \$10
11 reduction in the customer charge.

12 Q. Please comment on the testimony of Community Action Association of
13 Pennsylvania witness John Wilson.

14 A. He recommended that any increase to the Residential fixed basic service
15 charge be denied. He offered no proposals on the allocation of the
16 increase or rate design

17 Q. What conclusions have you reached regarding the revenue increase
18 allocations proposed by the witness for OTS, OCA, and OSBA?

19 A. Exhibit No. 209, Schedule 1 provides such a summary of the revenue
20 allocation proposals. The following information can be gleaned from
21 Exhibit No. 209, Schedule 1. OCA is the only party that proposes to
22 increase all service classification rates. The Company and OSBA propose

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 the same initial rate allocation proposal with no increase being allocated to
2 the SVIS, IVIS, LVIS and LIS service classes. Trial Staff proposes an
3 increase to all service classifications except the LIS service class.

4 OCA recommends allocating a lower percentage of the overall
5 increase to the Residential class (70.90%) than the Company and OSBA
6 (78.16%). OTS recommends allocating a greater percentage of the
7 overall increase to the Residential class (87.73%) than the Company and
8 OSBA. The Company and OSBA have the highest allocation for Small
9 Commercial and Public Authority classes (consumption < 250 Mcf
10 annually) of 4.42% compared to OCA 4.01% and OTS 1.91%. The
11 Company and OSBA have the highest allocation for Small Commercial
12 and Public Authority classes (consumption >250 Mcf annually) of 5.14%
13 compared to OCA 4.66% and OTS 0.75%. The Company and OSBA also
14 have the highest allocation for the Large Commercial and Public Authority
15 classes of 12.28% compared to OCA of 11.14% and OTS of 4.92%. The
16 OCA recommends an increase to all other classes and the OTS
17 recommends an increase to all other classes except LIS.

18 Q. What is the basis of the OTS, OCA's and OSBA's recommendations?

19 A. The OTS and OCA base their revenue recommendations in part on their
20 preferred cost of service study. OSBA uses the four studies provided by
21 the Company. The OCA's preferred study provides a greater rate of
22 return for the Residential class at present rates than the OSBA's use of

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 the average of their four cost of service studies and the OTS's preferred
2 study. Ms. Truitt will comment on the appropriateness of the OTS, OCA
3 and OSBA studies in her rebuttal testimony.

4 Q. What conclusions do you reach regarding the allocation of the revenue
5 increase proposed by the parties in this proceeding?

6 A. Based on my review of the overall revenue increase proposals
7 recommended in this proceeding, two general conclusions can be
8 reached.

9 First, relatively speaking, the Company, OTS and OSBA overall
10 revenue allocation recommendations are not extremely different. OCA is
11 the only party to allocate an increase to all classes of customers. OTS
12 allocates an increase to all service classes except LIS. OSBA is using the
13 same initial revenue allocation as filed by the Company. Also, with the
14 exception of the OCA and OTS allocation increase to the industrial
15 classes, while the percentage increases recommended by the parties are
16 different, the overall impact in terms of percentage increase in revenue by
17 class does not vary widely. Exhibit No. 209, Schedule 2 provides a
18 summary of the percentage revenue increase by class.

19 The second conclusion that can be reached is that the Company's
20 original revenue allocation proposal is reasonable. The Company and
21 OSBA have the same initial proposal. The only difference between the
22 Company and OTS and OCA's proposal is assigning an increase to

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 industrial service classes. As previously explained in my testimony the
2 Company did not assign an increase to the industrial classes because of
3 market conditions and competitive considerations.

4 Q. The witnesses for the OCA, OTS, and OSBA each recommend different
5 methods for scaling back the proposed revenue increase to the classes if
6 the Commission approves an overall increase less than originally
7 proposed by the Company. Please comment on their proposals.

8 A. OSBA recommends utilizing a scale back approach to their revenue
9 allocation as shown in Exhibit E1c-4. Under the OSBA example the
10 Commercial and Public Authority classes would be scaled back first. OTS
11 would scale back the increase proportional to their proposed allocation in
12 OTS Exhibit No. 3, Schedule 9 by rate class. OCA did not recommend a
13 scale back proposal but I am assuming it would in proportion to their
14 across the board increase.

15 Q. What is your recommendation if the Commission allows an increase in
16 revenues less than that proposed by the Company?

17 A. If the Commission allows an increase less than that proposed by the
18 Company, a scale back of the overall revenue allocation recommended by
19 the Company is shown on Exhibit No. 209, Schedule 3. Small
20 Commercial and Public Authority > than 250 Mcf annual consumption and
21 Large Commercial and Public Authority would be scaled back first until
22 there is no increase for these two classes. If there were any remaining

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 decrease in the proposed increase, it would apply proportionately to the
2 Small Commercial and Public Authority class less than 250 Mcf and the
3 residential class. This proposal is consistent with the cost of service study
4 results presented on Exhibit 111, Schedule 4, Page 1 of 4 where the
5 present ROR under Residential and Small Commercial and Public
6 Authority less than 250 Mcf are consistently below the proposed ROR
7 under each cost of service study method.

8 Q. Do you have any comments on OTS and OCA positions on the
9 Residential customer charge.

10 A. Yes. Mr. Kubas recommends an increase of \$2.00 to \$14.00. Mr.
11 Galligan recommends no increase.

12 Based on data contained within Exhibit 111, Schedule 4, Page 2,
13 the customer cost to serve a residential customer is \$26.61 per month.
14 Over the last decade the principle of gradualism has been served for
15 Distribution's residential customer charge. Distribution's presently
16 effective residential customer charge, exclusive of the state tax adjustment
17 surcharge and the elimination of the gross receipts tax changes, has
18 changed twice in approximately seventeen years. The first change was
19 made on January 15, 2004, when the customer charge increased by \$0.41
20 in Case R-038168 from \$11.09 to \$11.50. The second change was made
21 on April 15, 2005 in Case R-049656 when it increased from \$11.50 to
22 \$12.00. Prior to this, the last change was January 2, 1990 in Case R-

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 891218. The customer charge has gone up \$.91 in seventeen years. The
2 highest customer charge for other utilities in the state is \$12.50.

3 It is to be emphasized that the issue presented here is a matter of
4 equity within the Residential rate class. Irrespective of the residential
5 customer charge increase approved in this proceeding, neither more nor
6 less of Distribution's annual revenue requirement will be allocated to the
7 Residential customer class. As cited in Mr. Meinl's direct testimony the
8 average consumption of residential customers in the lowest income zip
9 codes tend to be higher on a per account basis than the consumption in
10 higher income zip codes.

11 Q. OTS witness Kubas recommends that there should be no increase in the
12 customer charge for Small Commercial and Public Authority (less than
13 250 Mcf annual consumption) and the Small Commercial and Public
14 Authority (greater than 250 Mcf annual consumption) and SVIS customers
15 and OCA witness Galligan recommends no increase to the customer
16 charge for Residential customers. Do you agree with their
17 recommendation?

18 A. No, Ms. Truitt will be addressing the customer cost study in her rebuttal
19 testimony. Based on the studies sponsored by Ms. Truitt I see no reason
20 why the proposed increases to the customer charges should be rejected.

21 Q. Do you have any other comments on other parties' allocations?

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 A. Yes, the OCA and OTS have proposed an increase to the industrial
2 classes. To the extent that an increase is assigned to the LVIS and LIS
3 (OCA is the only party to propose an increase to the LIS class) classes the
4 Company would propose a higher customer charge for these classes. To
5 be consistent with the other proposed customer charge increases the
6 Company would propose to increase the customer charge to the level of
7 cost which would be \$1,150.00 for LVIS customers and \$1,400.00 for LIS
8 customers.

9 Q. Do you agree with OTS's and OCA's comments on the Company's
10 tailblock margin proposal?

11 A. No, Exhibit No. 209, Schedule 4, shows the total tailblock-billing rate
12 broken down between non-gas costs and gas costs. At rates effective
13 February 1, 2006 approximately 84.5% of the tailblock rate is gas cost
14 related and 15.5% is non-gas cost related. Under the proposed seasonal
15 rate design by the Company for the winter period gas costs are
16 approximately 92% of the total tailblock rate and 91% of the rate for the
17 summer period. As the Exhibit shows the Company winter rate design
18 tailblock proposal is \$.2928 lower than current rates. Using Mr. Kubas's
19 example of a 2% drop in usage to a normal customer usage of 100 Mcf is
20 2 Mcf (100 Mcf x 2%) for conservation. The difference in the non-gas
21 amount associated with 2% conservation is \$0.58 (.2928 x 2 Mcf). The
22 actual savings to the customer is \$30.88 under current rates and \$30.30

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 under proposed rates. When looking at the final billed tailblock rate to the
2 customer there is not much difference between the Company's proposed
3 winter rate design and its current rates. As Mr. Kubas points out "the
4 average customer is more concerned with the total bill, and not
5 necessarily the individual components of the bill". The Company's
6 proposed Residential rate design when compared to current rates is
7 reasonable.

8 Q. Please respond to Mr. Kubas statement on page 53 of his testimony that
9 the Company did not explain the shift of gas cost between PGC classes.

10 A. The relevant information is provided in Exhibit No. 209, Schedule 5. The
11 PGDC winter and non-winter rates were established in the Company's
12 initial filing on Exhibit 112, Schedule 5. When applying the rates to the
13 winter volumes, the SC&PA customer class has a slightly higher
14 proportion of sales compared to the residential class. As a result there is
15 a slight impact on gas cost recovery between customer classes due to the
16 seasonal rate proposal.

17 Q. Mr. Galligan argues that FERC's move to a straight-fixed variable (SFV)
18 rate design was not out of FERC's recognition that rates should reflect
19 costs. Please comment.

20 A. Mr. Galligan argues that FERC's decision to adopt SFV rate design was
21 for rate design, and not for cost-allocation purposes. This is a significant
22 over-simplification of FERC's rationale for adopting SFV rate design.

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 Q. Please explain.

2 A. To begin with, FERC stated, explicitly, that the move to SFV rate design
3 was driven by rate design and cost allocation considerations. As FERC
4 explained in Order 636 when it adopted SFV: "The Commission here is
5 addressing cost classification for both cost allocation and rate design
6 (billing) purposes." FERC Statutes and Regulations ¶¶30,939 at 30,434
7 (1992). Mr. Galligan's excerpt from Order 636-A merely reiterated the
8 rationale behind SFV in response to petitioners' argument that FERC's
9 decision lacked an evidentiary basis.

10 Q. Please continue.

11 A. Mr. Galligan would have the Commission believe that FERC jettisoned
12 cost-causation principles when it adopted SFV. That of course is
13 incorrect. The fact that SFV rates reflect the pipeline's allocation of fixed
14 and variable costs is no accident. As FERC itself noted elsewhere in
15 Order 636-A, "FERC generally follows the principle that assessment of
16 costs should reflect cost-causation principles." FERC Statutes and
17 Regulations ¶¶30,950, p. 30,646. It is undeniably true that promoting
18 competition was among FERC's considerations behind the move to SFV,
19 as there are always policy considerations that help to shape rate design.
20 But Mr. Galligan overstates the matter to suggest that FERC, in order to
21 promote competition, ignored a long-standing ratemaking principle

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
REBUTTAL TESTIMONY OF THOMAS J. CLARK

1 recognizing that rates should, consistent with other policies, reflect how
2 costs are incurred.

3 Q. Does this complete your rebuttal testimony?

4 A. Yes.

National Fuel Gas Distribution Corporation
 Pennsylvania Division

Case R-00061493

Summary of Revenue Increase Allocation Proposals
 (\$000)

	Company		OCA /1		OTS /2		OSBA /3	
	\$ Allocated	% Allocated	\$ Allocated	% Allocated	\$ Allocated	% Allocated	\$ Allocated	% Allocated
Residential	\$ 20,161	78.16%	\$ 18,288	70.90%	\$ 22,631	87.73%	\$ 20,161	78.16%
Small Commercial/Pub Auth <250	\$ 1,141	4.42%	\$ 1,034	4.01%	\$ 492	1.91%	\$ 1,141	4.42%
Small Commercial/Pub Auth >250	\$ 1,325	5.14%	\$ 1,202	4.66%	\$ 194	0.75%	\$ 1,325	5.14%
Large Commercial/Pub Auth	\$ 3,168	12.28%	\$ 2,874	11.14%	\$ 1,269	4.92%	\$ 3,168	12.28%
SVIS	\$ -	0.00%	\$ 75	0.29%	\$ 27	0.10%	\$ -	0.00%
IVIS	\$ -	0.00%	\$ 1,045	4.05%	\$ 586	2.27%	\$ -	0.00%
LVIS	\$ -	0.00%	\$ 761	2.95%	\$ 596	2.31%	\$ -	0.00%
LIS	\$ -	0.00%	\$ 516	2.00%	\$ -	0.00%	\$ -	0.00%
Total	\$ 25,795	100.00%	\$ 25,795	100.00%	\$ 25,795	100.00%	\$ 25,795	100.00%

1/ OCA Statement No. 3, Page 27, across the board increase, Co. assumes this is based on non-gas cost

2/ OTS Exhibit No. 3, Schedule 4, includes reclassification of gas cost

3/ OSBA Exhibit IEC-4, before First Dollar Relief Calculations

National Fuel Gas Distribution Corporation
 Pennsylvania Division

Case R-00061493

Summary of percentage Revenue Increase By Class
 (\$000)

	Total Revenues		Company		OCA		OTS		OSBA					
	Current	Rates	\$ Allocated	Increase	\$ Allocated	Increase	\$ Allocated	Increase	\$ Allocated	Increase				
Residential	\$	330,861	\$	20,161	6.09%	\$	18,288	5.53%	\$	22,631	6.84%	\$	20,161	6.09%
Small Commercial/Pub Auth <250	\$	16,771	\$	1,141	6.80%	\$	1,034	6.17%	\$	492	2.93%	\$	1,141	6.80%
Small Commercial/Pub Auth >250	\$	28,269	\$	1,325	4.69%	\$	1,202	4.25%	\$	194	0.69%	\$	1,325	4.69%
Large Commercial/Pub Auth	\$	34,105	\$	3,168	9.29%	\$	2,874	8.43%	\$	1,269	3.72%	\$	3,168	9.29%
SVIS	\$	1,317	\$	-	0.00%	\$	75	5.69%	\$	27	2.05%	\$	-	0.00%
IVIS	\$	7,518	\$	-	0.00%	\$	1,045	13.90%	\$	586	7.79%	\$	-	0.00%
LVIS	\$	3,183	\$	-	0.00%	\$	761	23.91%	\$	596	18.72%	\$	-	0.00%
LIS	\$	2,113	\$	-	0.00%	\$	516	24.42%	\$	-	0.00%	\$	-	0.00%
Total		424,137	\$	25,795	6.08%	\$	25,795	6.08%	\$	25,795	6.08%	\$	25,795	6.08%

National Fuel Gas Distribution Corporation
 Pennsylvania Division

Case R-00061493

Example of Company Scale Back Proposal
 (\$000)

	Filed For Increase	% Allocated	\$1M less	% Allocated	\$2M Less	% Allocated	\$3M Less	% Allocated
Residential	\$ 20,161	78.16%	\$ 20,161	81.31%	\$ 20,161	84.73%	\$ 20,161	88.44%
Small Commercial/Pub Auth <250	\$ 1,141	4.42%	\$ 1,141	4.60%	\$ 1,141	4.80%	\$ 1,141	5.01%
Small Commercial/Pub Auth >250	\$ 1,325	5.14%	\$ 1,030	4.15%	\$ 735	3.09%	\$ 440	1.93%
Large Commercial/Pub Auth	\$ 3,168	12.28%	\$ 2,463	9.93%	\$ 1,758	7.39%	\$ 1,053	4.62%
SVIS	\$ -	0.00%	\$ -	0.00%	\$ -	0.00%	\$ -	0.00%
IVIS	\$ -	0.00%	\$ -	0.00%	\$ -	0.00%	\$ -	0.00%
LVIS	\$ -	0.00%	\$ -	0.00%	\$ -	0.00%	\$ -	0.00%
LIS	\$ -	0.00%	\$ -	0.00%	\$ -	0.00%	\$ -	0.00%
Total	\$ 25,795	100.00%	\$ 24,795	100.00%	\$ 23,795	100.00%	\$ 22,795	100.00%

National Fuel Gas Distribution Corporation
 Pennsylvania Division
 Tailblock Rates
 \$/Mcf

<u>Residential</u>	<u>Current</u>		<u>Winter Proposed</u>		<u>Non Winter Proposed</u>	
		<u>%</u>		<u>%</u>		<u>%</u>
Tailblock Margin	1.9456	12.60%	0.2496	1.65%	0.2496	2.00%
LIRA Rider	0.4557	2.95%	0.5806	3.83%	0.5806	4.64%
Merchant Function Charge	0		0.4128	2.72%	0.3478	2.78%
Subtotal	<u>2.4013</u>	<u>15.55%</u>	<u>1.2430</u>	<u>8.20%</u>	<u>1.1780</u>	<u>9.42%</u>
Gas Cost	<u>13.0432</u>	<u>84.45%</u>	<u>13.9087</u>	<u>91.80%</u>	<u>11.3271</u>	<u>90.58%</u>
Total	15.4445	100.00%	15.1517	100.00%	12.5051	100.00%

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
PENNSYLVANIA DIVISION
OSBA INTERROGATORIES

10. Reference Exhibit No. 103, Schedule 1, gas supply charges with seasonal rates:
- a. Please provide supporting workpapers for the development of the winter PGDC charge, including the winter seasonal volumes used for each rate class.
 - b. Please explain generally why proposed "subtotal gas revenues" decline from present to proposed rates for residential customers but increase for SC&PA and LC&PA customer.

Response

- A. See Exhibit No. 112, Schedule 5, Page 1.
- B. See Exhibit No. 112, Schedule 5, Page 1. When the winter and non-winter gas cost rates are applied to the sales volumes shown in Exhibit 103, Schedule 1 it results in a redesign of gas cost between customer classes. The SC&PA and LC&PA customer class have a slightly higher proportion of winter sales to total sales compared to the residential class of customer. See Statement No. 9, Page 11.

NATIONAL FUEL GAS DISTRIBUTION CORPORATION
(PENNSYLVANIA DIVISION)

REBUTTAL TESTIMONY

OF

FRANK J. HANLEY, CRRA
PRESIDENT
AUS CONSULTANTS – UTILITY SERVICES

CONCERNING

FAIR RATE OF RETURN

TABLE OF CONTENTS

	<u>Page No.</u>
I. INTRODUCTION AND PURPOSE	1
II. SUMMARY	1
III. CAPITAL STRUCTURE	4
IV. COST RATE OF COMMON EQUITY CAPITAL	8
A. OTS Witness Deardorff	8
B. OCA Witness Parcell	15
C. OSBA Witness Knecht	26
V. RESPONSE TO THE CRITIQUE OF NFGDC'S RATE OF RETURN TESTIMONY	35
A. OTS Witness Deardorff	35
B. OCA Witness Parcell	42

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 **I. INTRODUCTION AND PURPOSE**

2 Q. Please state your name, occupation and business address.

3 A. My name is Frank J. Hanley and I am President of AUS Consultants – Utility Services.
4 My business address is 155 Gaither Drive, P.O. Box 1050, Moorestown, New Jersey
5 08057.

6 Q. Are you the same Frank J. Hanley who previously submitted direct testimony in this
7 proceeding?

8 A. Yes, I am.

9 Q. What is the purpose of this testimony?

10 A. The purpose of this testimony is to rebut the prepared testimonies of Office of Trial Staff
11 (OTS) Witness Kevan L. Deardorff, Office of Consumer Advocate (OCA) Witness David
12 C. Parcell, and Office of the Small Business Advocate (OSBA) Witness Robert D. Knecht
13 concerning their recommendations regarding a proper ratemaking capital structure for
14 National Fuel Gas Distribution Corporation (NFGDC) and their recommended common
15 equity cost rates. In addition, I respond to the critiques of my direct testimony made by
16 Messrs. Deardorff and Parcell.

17 Q. Have you prepared an exhibit in support of this rebuttal testimony?

18 A. Yes, I have. It has been marked for identification as Exhibit No. 210. It consists of 16
19 schedules.

20 **II. SUMMARY**

21 Q. Please briefly summarize your testimony.

22 A. My testimony describes the errors contained in the testimonies of all three witnesses
23 which result in a significant understatement of the cost of common equity capital to
24 NFGDC and the use of inappropriate capital structure ratios because:

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

- 1 • Messrs. Deardorff, Parcell and Knecht erroneously rely upon the average capital
2 structures of their proxy groups and ignore the need for greater total equity for
3 NFGDC due to its more risky equivalent business profile vis-à-vis the proxy
4 groups. Such reliance is inconsistent with investor expectations and the
5 ratemaking paradigm. Utilizing Mr. Deardorff's approach but only including short-
6 term debt which actually finances average gas storage inventory results in a
7 capital structure which includes 52.02% common equity, which is close to my
8 recommended hypothetical common equity ratio of 51.50%.
- 9 • I review recent allowed rates of return on common equity (ROEs) by other
10 regulatory commissions which average about 10.7% relative to an average
11 common equity ratio of about 47.1%. In addition, I note that the average
12 awarded equity risk premium over A rated public utility bonds was 4.63%. With a
13 prospective yield of 6.40% on A rated public utility bonds (equal to the average
14 bond rating of the proxy companies) an 11.03% common equity cost rate is
15 indicated ($6.40\% + 4.63\% = 11.03\%$) before necessary upward adjustments to
16 reflect NFGDC's unique risks. In addition, by being cognizant of recently
17 awarded ROEs by this Commission to Aqua Pennsylvania, Inc. of 10.60%
18 relative to a common equity ratio of 49.43% and a Standard & Poor's (S&P) bond
19 rating of AA-, as well as 10.70% to PPL Electric Utilities Corporation with an S&P
20 bond rating of A- relative to a common equity ratio of 46.87%, I confirm that
21 NFGDC's requested common equity cost rate of 12.25% is reasonable in view of
22 its S&P equivalent bond rating of A- and business profile of "4". Moreover, the
23 average of all regulatory awarded ROEs to gas utilities during the period January
24 1, 2004 through June 30, 2006 of 10.66% (contained in Schedule 6 of Exhibit No.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 210) provide further confirmation that the recommended common equity cost rate
2 of 8.75% by Mr. Deardorff 9.75% by Mr. Parcell, and the range of 9.75%-10.25%
3 by Mr. Knecht do not pass a reality check, especially when NFGDC's greater risk
4 attributable to small size, lack of protection from the vagaries of the weather and
5 an equivalent business profile of "4" are taken into account.

- 6 • Mr. Deardorff erroneously relies solely upon the Discounted Cash Flow Model
7 (DCF) to arrive at his recommended common equity cost rate despite this
8 Commission's consideration of the results of other cost of equity models in order
9 to ascertain the reasonableness of the allowed ROE. The Efficient Market
10 Hypothesis (EMH), upon which all the cost of common equity models are
11 premised, confirms that investors rely upon multiple cost of common equity
12 models in formulating their required rates of return.
- 13 • Messrs. Parcell and Knecht mis-apply their cost of common equity models.
- 14 • Messrs. Parcell and Knecht fail to give adequate weight to growth in earnings per
15 share forecasts (EPS) which results in undue emphasis upon historical measures
16 of growth.
- 17 • Messrs. Parcell and Knecht disparage the use of analysts' forecasts of growth in
18 EPS for reasons which are no longer valid.
- 19 • All three witnesses reject, for invalid reasons, the use of this Commission's DCF
20 financial leverage adjustment which takes into account the fact that the DCF
21 model understates investors' required rate of return on common equity capital
22 when market values exceed book values.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 average capital structure ratios based upon permanent capital of my proxy groups of four
2 and nine Value Line gas distribution companies (LDCs) as projected by Value Line with
3 an imputed short-term debt component. Mr. Deardorff's assumption that all short-term
4 debt finances average gas storage inventory is erroneous. As discussed and shown in
5 NFGDC Witness David Bauer's rebuttal testimony, average gas storage inventory is
6 \$10,517,109. Utilizing Mr. Deardorff's capital structure of 46% long-term debt and 54%
7 equity capital and adding in only the \$10,517,109 short-term debt which actually finances
8 the gas storage inventory, Mr. Bauer shows that the equity ratio is reduced to 52.02%
9 which is very close to, albeit somewhat greater than, my recommended hypothetical
10 common equity ratio of 51.50%, thereby confirming my recommendation as
11 conservatively reasonable.

12 Mr. Parcell has also relied upon a hypothetical capital structure which "closely
13 matches that of the proxy groups" of Value Line LDCs, my proxy groups of four LDCs and
14 nine Value Line LDCs, as stated on page 16, lines 3-8 of OCA Statement No. 2.

15 I do not believe that the use of such averages is appropriate. The capital
16 structure utilized for cost of capital purposes within the ratemaking paradigm should be
17 representative of the future, the period of time when the new rates would be in effect
18 because ratemaking is prospective. Moreover, rating agencies, and hence investors, are
19 interested in what the prospects for capital structure are in the near future, not what they
20 have been in the past.

21 Q. Do you have such an indication from a major rating agency, such as S&P?

22 A. Yes. Schedule 1 of Exhibit No. 210 consists of six pages which are an explanation of
23 S&P's Corporate Ratings Criteria, including ratio guidelines. Please note on page 1 of
24 Schedule 1 that S&P states:

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 Because ratings are designed to be valid over the entire business cycle,
2 ratios of a particular company at any point in the cycle may not appear to
3 be in line with its assigned debt ratings.

4
5 On page 3 of Schedule 1, please note that S&P states:

6 Medians are based on historical performance, while *Standard & Poor's*
7 *risk-adjusted guidelines refer to expected future performance.* (italics
8 added for emphasis)
9

10 Thus, in view of the foregoing, it is clear that S&P looks forward to expected
11 future performance. As will be discussed infra, I will show why NFGDC's implied bond
12 rating of A- and an implied S&P business profile of "4" is conservatively realistic.
13 Consequently, my proposed hypothetical capital structure ratios of 48.50% total debt and
14 51.50% common equity capital are appropriate for ratemaking purposes.

15 Q. Aside from the fact that you disagree with Mr. Parcell's and Mr. Knecht's reliance upon
16 the average historical capital structure ratios of the two proxy groups, what would those
17 ratios be if they had simply relied upon the more recent data as of June 2006 for those
18 two groups of companies?

19 A. As shown on page 3 of Schedule 2 of Exhibit No. 210, the average at June 30, 2006
20 would consist of 49.72% total debt and 50.28% total equity capital, extremely close to my
21 proposed hypothetical common equity ratio of 51.50%, thus confirming its
22 reasonableness. In addition, it is also shown on page 3 of Schedule 2 that the average
23 total equity ratio of Mr. Parcell's Value Line proxy group at June 30, 2006 was 48.30%.
24 The average total equity ratio of all three proxy groups was 49.62%. Based on
25 information provided supra, use of such historical averages is inappropriate because
26 investors and rating agencies look forward to ratios within the financial guidelines as long
27 as the existing rating is maintained.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 Q. Since all three witnesses relied upon the proxy groups of LDCs, is there any additional
2 error that they made by simply utilizing and/or adopting an average of the ratios of those
3 companies?

4 A. Yes, I believe so. This is because it is clear to me that on a stand-alone basis, NFGDC
5 would have a senior debt rating of A- and a business profile of not better (i.e., higher)
6 than "4" per S&P which categorizes business profiles into deciles. Schedule 3 of Exhibit
7 No. 210 shows that S&P divides its business profiles into ten categories as follows:

8 Excellent – "1" and "2"

9 Strong – "3" and "4"

10 Satisfactory – "5" and "6"

11 Weak – "7" and "8"

12 Vulnerable – "9" and "10"

13 Q. How do the business profiles of S&P relate to Mr. Knecht's recommended capital
14 structure ratios?

15 A. I believe it is clear that the proxy LDCs are considerably less business risky than NFGDC
16 based on less risky (lower) business profiles. Therefore, NFGDC should have a higher
17 equity ratio in order to compensate for its greater business risk.

18 Q. Have you shown the current S&P business profile for your proxy LDC companies upon
19 which Mr. Knecht relies, i.e., both the parent companies as well as their operating
20 subsidiaries?

21 A. Yes, that information is shown on Schedule 4 of Exhibit No. 210.

22 Q. Please explain Schedule 4 of Exhibit No. 210.

23 A. While there is no numerically assigned business profile for NFGDC, S&P refers to NFG's
24 regulated units as having "strong" business profiles (Ratings Direct Research, July 12,

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 2006). Also shown are the numerical assigned business profile for the parents and their
2 subsidiaries of those companies included in Mr. Parcell's group of Value Line natural gas
3 distribution companies and my two proxy groups of LDCs, as well as the description of
4 each business profile. Those LDCs have strong or excellent business risk profiles of
5 approximately "2" as shown in Exhibit No. 210, Schedule 4. The only company that is
6 described as having a "satisfactory" business risk profile on Schedule 4 of Exhibit No.
7 210 is Peoples Energy Corporation, and it has an assigned business risk profile of "5".

8 Q. NFG has an assigned business risk profile of "7". Have you examined the relationship
9 between business risk profile of parent companies that have a "7" score and which also
10 have operating subsidiaries with their own senior debt outstanding that is rated by S&P
11 as well as assigned business risk profile scores?

12 A. Yes, I have. That information is shown in Schedule 5 of Exhibit No. 210, which consists
13 of two pages. Page 1 contains a summary of the results of the analysis, while page 2
14 contains the legend utilized in assigning numerical weights based upon bond rating. As
15 shown on page 1, there are eleven energy holding companies which have business
16 profile scores of "7", as derived from the September 8, 2006 S&P Issuer Ranking: U.S.
17 Utilities and Power Companies, Strongest to Weakest. As shown, the average business
18 profile score of all the operating subsidiaries of these holding companies is "3.6". Also
19 shown is that the average business risk profile score for the bonds of those subsidiaries
20 which are of investment grade is "3.8". Clearly, this information shows that my
21 assumption of a business profile score of "4" for NFGDC is appropriate. This means that
22 NFGDC is more business risky than the average proxy LDC, and therefore requires a
23 greater proportion of equity in its capital structure than those LDCs. Thus, it is clear that
24 the use of a hypothetical capital structure based upon the proxy groups of LDCs is

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 demonstrates that investors rely upon a single model such as the DCF. Moreover, there
2 is also no empirical evidence of which I am aware that proves the DCF model to be a
3 superior predictor of actual earned returns experienced by investors vis-à-vis other cost
4 of common equity models.

5 In view of the foregoing, and because the EMH requires the assumption that
6 investors take into account multiple cost of equity models when formulating their required
7 rates of return, sole reliance upon any single model, including the DCF, is incorrect.

8 Q. Are there any indications from recent decisions of this Commission that confirm that other
9 cost of common equity models need to be considered because sole use of an unadjusted
10 DCF model can result in an understatement of the common equity cost rate?

11 A. Yes. For example, this Commission, in an Opinion and Order in R-00049255 concerning
12 PPL Electric Utilities Corporation, entered December 22, 2004 stated:

13 We note that the USDOD recognized that when market price exceeds
14 book value, a constant growth DCF model is less reliable as growth in
15 earnings, and dividends and book value are less likely to be equal under
16 this circumstance. This is a key assumption of the constant growth DCF
17 model. We agree with the USDOD that investors purchasing stock at
18 market prices greater than book value are at greater risk that the price
19 will actually decline in the near future to approach book value, and
20 increasing the risk that growth rates in earnings, dividends, and book
21 value will diverge from each other. *...[T]hose returns indicated by
22 alternative, standard cost estimation techniques provide additional
23 measures so as to test the reasonableness of our DCF-based cost of
24 equity capital rate of 10.70% (10.25 + .45 for financial risk). (pp 71-72 of
25 Order) (italics added)*
26

27 Also, this Commission, in its Opinion and Order in R-00038805 concerning Aqua
28 Pennsylvania, Inc. entered August 5, 2004 stated:

29 The ALJ recommended a 10.0% cost of equity, relying too heavily on the
30 DCF methodology. *However, the ALJ failed to sufficiently consider the
31 other standard financial models, including Comparable Earnings, the*

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 *Risk Premium Model, and the CAPM as checks upon the*
2 *reasonableness of the DCF results.* (p. 62 of Order) (italics added)
3

4 The final example that I cite is this Commission's Opinion and Order in R-
5 00973947 concerning United Water Pennsylvania, entered January 29, 1998 when it
6 stated:

7 However, we have ... recognized that the sole use of the DCF method
8 can result in an understatement of the common equity cost rates ... we
9 *recognize that it is within our purview to exercise our informed judgment*
10 *and to consider the risks as evidenced by the Company's CAPM and RP*
11 *analyses.* (p. 54 of Order) (italics added)
12

13 I note that Mr. Deardorff compounds his failure to use other models by also
14 failing to adjust his DCF cost rates in accordance with this Commission's financial risk
15 adjustment employed in recent cases.

16 Q. In addition to your calculations of common equity cost rate by the use of other cost of
17 common equity models such as the RPM, the CAPM and CEM, have you made any
18 comparison to Mr. Deardorff's recommended 8.75% common equity cost rate against
19 recently-awarded ROEs to LDCs (or the gas operations of combination electric and gas
20 companies) between January 1, 2004 and June 30, 2006?

21 A. Yes, I have. That information is set forth in Schedule 6 of Exhibit 210. It is shown on
22 Schedule 6 that the average awarded ROE was 10.66% relative to an average common
23 equity ratio of 47.10%. These awards contained an average equity risk premium of
24 4.63% over the yields on A rated public utility bonds. The prospective yield on A rated
25 public utility bonds of 6.40% (page 1 of Schedule 12 of Exhibit No. 400) plus an equity
26 risk premium of 4.63% indicates a common equity cost rate of 11.03%. Such a cost rate
27 confirms that the litigated awards by this Commission of 10.60% to Aqua Pennsylvania

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 and 10.70% to PPL were in the mainstream, but that the 8.75% common equity cost rate
2 recommended in this proceeding by Mr. Deardorff is definitely not in the mainstream,
3 especially in view of the rising trend in long-term capital costs in 2006. I believe if this
4 Commission were to allow an 8.75% common equity return rate as recommended by the
5 OTS, the financial community would have a very adverse view of Pennsylvania
6 regulation.

7 Q. At pages 23-24 of OTS Statement No. 1, Mr. Deardorff states he gave less weight to
8 Value Line growth rates. Please respond.

9 A. Value Line is unquestionably the most widespread investment advisory service available
10 to the public. It is relatively inexpensive as a subscription; and more importantly, is
11 available for free reference in libraries, brokerage houses, etc., an important element of
12 the EMH upon which the DCF model is predicated. Moreover, this Commission, in its
13 recent PPL Order (ref. supra), stated at page 69, as follows:

14 We agree with PPL's Reply Exceptions that the *Value Line* growth rate
15 calculations used by both the USDOD and PPL witnesses are not
16 anomalous and can be relied upon in a calculation of reasonable growth
17 rate. (italics in original)

18
19 I should also point out that by utilizing S&P and FirstCall, Mr. Deardorff has
20 duplicated analysts' forecasts. S&P earnings guide gets its earnings growth from IBES
21 and First Call earnings growth rates are from I/B/E/S, as FirstCall owns I/B/E/S. In
22 addition, Mr. Deardorff himself acknowledges that "Clear Station, Smart Money and MSN
23 get their growth estimates from the same source." (OTS Statement No. 1, p. 21, Lines 8
24 and 9) Thus, Mr. Deardorff's growth rates are tainted as they contain duplicative
25 analysts' forecasts.

26 Q. Please comment upon the applicability of Mr. Deardorff's recommended DCF-based

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 common equity cost rate of 8.75%.

2 A. A common equity cost rate of 8.75%, based upon what is known as the "simplified" DCF
3 model which both Mr. Deardorff and I are using in this case, will mathematically mis-
4 specify investors' required return rate when the market value of common stock differs
5 significantly from its book value. It is a basic assumption of the model. As utility rate of
6 return experts all know, and as I discussed in Statement No. 10 of my direct testimony,
7 market value and book values are seldom at unity. The market-based DCF model will
8 result in a total annual dollar return on book common equity equal to the total annual
9 dollar return expected by investors only when market and book values are equal, a rare
10 and unlikely situation.

11 Roger A. Morin has stated at page 236 of Regulatory Finance – Utilities' Cost of
12 Capital, (1994):

13 The third reason for caution and skepticism is that application of the DCF
14 model produces estimates of common equity cost that are consistent
15 with investors' expected return only when stock price and book value are
16 reasonably similar, that is, when the M/B is close to unity. As shown
17 below, application of the standard DCF model to utility stocks
18 understates the investor's expected return when the market-to-book ratio
19 of a given stock exceeds unity. This is particularly relevant in the capital
20 market environment of the 1990s where utility stocks are trading at M/B
21 ratios well above unity. The converse is also true, that is, the DCF model
22 overstates that investor's return when the stock's M/B ratio is less than
23 unity. The reason for the distortion is that the DCF market return is
24 applied to a book value rate base by the regulator, that is, a utility's
25 earnings are limited to earnings on a book value rate base.

26
27 Although Dr. Morin discusses the capital market environment of the 1990s, utility
28 stocks continue to trade at market-to-book ratios well above unity, as shown on Schedule
29 7, i.e., the market-to-book ratios of my proxy groups of four LDCs and the nine Value Line
30 LDCs on August 14, 2006 were 190.3% and 193.9%, respectively, and 196.5% for Mr.
31 Parcell's proxy group of fifteen Value Line LDCs.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 As discussed in Statement No. 10, my direct testimony, at page 28, line 28
2 through page 29, line 11:

3 Under the DCF model, the rate of return investors require is related to
4 the price paid for a stock. Thus, market price is the basis upon which
5 investors formulate their required rate of return. A regulated utility (under
6 the traditional rate base/rate of return paradigm) is limited to earning on
7 its net book value (depreciated original cost) rate base. Market values
8 diverge from book values for many reasons unrelated to allowed and/or
9 achieved rates of earnings on book common equity (ROEs). Thus, when
10 market values depart from book values, a market-based DCF cost rate
11 applied to the book value of common equity will not reflect investors'
12 expected common equity cost rate based on market prices. This is true
13 because there are many macroeconomic factors which influence the
14 demand for, and hence the market prices of, common stocks in addition
15 to company-specific earnings per share (EPS) and dividends per share
16 (DPS). Consequently, a market-based DCF cost rate applied to the book
17 value per share will either overstate investors' required common equity
18 cost rate when market value is less than book value or understate
19 investors' required common equity cost rate when market value is above
20 book value.

21
22 Mr. Deardorff's recommended DCF-based common equity cost rate, i.e., 8.75%,
23 seems to be based upon an average adjusted dividend yield of 4.27% for the proxy group
24 of nine LDCs plus a growth rate of 4.50%, or 8.77%. I demonstrate the inadequacy of
25 Mr. Deardorff's DCF-based cost rate of 8.75% on Schedule 8, which demonstrates that
26 there is no realistic opportunity to earn the market-based rate of return on book value. In
27 this example, market price is 173.716% in excess of book value and the investor expects
28 a total return rate of 8.75%, Mr. Deardorff's recommended common equity cost rate. The
29 8.75% market-based cost rate implies an annual return of \$2.814 consisting of \$1.373 in
30 dividends and \$1.441 in growth (market-price appreciation). When the 8.75% return rate
31 is applied to the book value of \$18.513, which is just 57.565% of market value, an
32 opportunity for a total annual return is just \$1.620 on book value. With annual dividends
33 of \$1.373, there is an opportunity to earn only \$0.247 in market-price appreciation which

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 is a mere 0.77% on market price in contrast to the 4.48% growth in market price
2 expected by investors for the group. There is no possible way to achieve the expected
3 growth of \$1.441 (4.48%) related to an average market price of \$32.160 absent a huge
4 cut in annual cash dividends, an unreasonable expectation since such an action by a
5 board of directors is usually indicative of an extremely adverse financial condition. Of
6 course, if the converse situation exists (market prices substantially below their book
7 values), a market-based DCF cost rate applied to the book value of common equity
8 would overstate the cost rate.

9 **B. OCA Witness Parcell**

10 Q. Please discuss Mr. Parcell's Discounted Cash Flow Analysis.

11 A. On Schedule 6 of Exhibit __ (DCP-1), Mr. Parcell uses a variety of growth rates in his
12 DCF analysis. The implementation of the DCF model requires a tremendous amount of
13 judgment on the part of the rate of return analyst. For example, on Schedule 9 of Exhibit
14 No. 210, I have performed an analysis of the range of DCF estimated common equity
15 cost rate based upon Mr. Parcell's proxy group of Value Line LDCs, his dividend yields
16 and his many individual growth rates. As shown on page 1, the range of individual DCF
17 common equity cost rate estimates range from a low of 3.0% for Cascade Natural Gas
18 Corp. to a high of 21.1% for Energen Corporation. The averages of the lows and highs
19 for each group results in ranges from 6.8% to 11.7% for the Value Line LDCs. Note that
20 the bottom of that range, or 6.8%, is only slightly higher than the average marginal cost of
21 long-term debt for the group, i.e., 6.40%, the prospective yield on Moody's A rated public
22 utility bonds as shown on page 1 of Schedule 12 of Exhibit No. 400. Of course, a 3.0%
23 cost rate is well below the yield of even three-month U.S. Treasury Bills (see page 7,
24 Schedule 12 of Exhibit No. 400). In his application of the DCF, Mr. Parcell utilized all of

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 the many growth rates shown on pages 3 and 4 of Schedule 9 of Exhibit __ (DCP-1)
2 when arriving at an average growth rate for use in his application of the DCF without
3 applying judgment as to the reasonability of any individual growth rate. On page 21 of
4 OCA Statement No. 2, his direct testimony, Mr. Parcell presents the mean, median and
5 high DCF results. These range from a low of 7.5% to a high of 9.4%. He then concludes
6 that "current DCF cost[s] of equity for the proxy groups" range from 9.0% to 9.5% with a
7 9.25% midpoint. As discussed above, the real range of DCF cost of common equity cost
8 rates is from 3.0% to 21.1%, a range so wide as to question its very validity. *The*
9 *midpoint of that range is 12.1%.*

10 I have also shown on page 1 of Schedule 9 the Standard & Poor's (S&P) bond
11 rating by company and average for Mr. Parcell's proxy group which is A+. The basis for
12 skepticism of Mr. Parcell's DCF results is evident in the range of common equity cost rate
13 of 3.5% to 8.3% for Southwest Gas Corporation (SWG), whose bonds are rated BBB- by
14 S&P (the very bottom of investment grade). In contrast, New Jersey Resources Corp.'s
15 (NJR) DCF cost rates range from 8.3% to 11.0% and NJR's bonds are rated AA- by S&P,
16 the highest of the group, even though NJR is much less investment risky than SWG.

17 The foregoing demonstrates that Mr. Parcell has not properly exercised informed
18 expert judgment when evaluating the reasonableness of the growth rates he used in his
19 DCF analysis, but rather arbitrarily utilized all the growth rates he analyzed thereby
20 arriving at a flawed conclusion.

21 Q. Please comment upon the applicability of the midpoint of Mr. Parcell's range of DCF
22 results 9.0% to 9.5%, or 9.25%.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 A. A common equity cost rate of 9.25%, based upon what is known as the "simplified" DCF
2 model which both Mr. Parcell and I are using in this case, will mathematically mis-specify
3 investors' required return rate when the market value of common stock differs
4 significantly from its book value. It is a basic assumption of the model. As utility rate of
5 return experts all know, and as I discussed in Statement No. 10 of my direct testimony,
6 market value and book values are seldom at unity. The market-based DCF model will
7 result in a total annual dollar return on book common equity equal to the total annual
8 dollar return expected by investors only when market and book values are equal, a rare
9 and unlikely situation, confirmed by Morin (supra).

10 Although Dr. Morin discusses the capital market environment of the 1990s, utility
11 stocks continue to trade at market-to-book ratios well above unity, as shown on Schedule
12 7 of Exhibit No. 210, the market-to-book ratios of the Value Line gas distribution
13 companies currently (August 14, 2006) range from 154.3% to 277.5%, averaging
14 196.5%.

15 As discussed supra and in Statement No. 10, my direct testimony, at page 29,
16 lines 7-11:

17 ...a market-based DCF cost rate applied to the book value per share will
18 either overstate investors' required common equity cost rate when
19 market value is less than book value or understate investors' required
20 common equity cost rate when market value is above book value.

21
22 The midpoint of Mr. Parcell's recommended range of DCF cost rate, i.e., 9.25%,
23 is based upon an average adjusted dividend yield for his three proxy groups of LDCs of
24 4.13% plus an implied estimate of growth of 5.12% ($9.25\% - 4.13\% = 5.12\%$). I have
25 demonstrated the inadequacy of Mr. Parcell's DCF cost rate on Schedule 8 of Exhibit No.
26 210, which demonstrates that there is no realistic opportunity to earn the market-based

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 rate of return on book value. In this example, the average market price of \$33.150 is
2 180.733% in excess of the average book value of \$18.342 and the investor expects a
3 total return rate of 9.25%, the midpoint of Mr. Parcell's DCF cost rate range. The 9.25%
4 market-based cost rate implies an annual return of \$3.066 consisting of \$1.369 in
5 dividends and \$1.697 in growth (market-price appreciation). When the 9.25% return rate
6 is applied to book value, \$18.342, 55.33% of market value, an opportunity for a total
7 annual return is just \$1.697 on book value. With annual dividends of \$1.369, there is an
8 opportunity to earn only \$0.328 in market-price appreciation which is a mere 0.99% on
9 market price in contrast to the 5.12% growth in market price expected by investors for the
10 group. There is no possible way to achieve the expected growth of \$1.697 (5.12%)
11 related to an average market price of \$33.150 absent a huge cut in annual cash
12 dividends, an unreasonable expectation since such an action by a board of directors is
13 usually indicative of an extremely adverse financial condition. Of course, if the converse
14 situation exists (market prices substantially below their book values), a market-based
15 DCF cost rate applied to the book value of common equity would overstate the cost rate.

16 Q. At page 22 lines 19-22, Mr. Parcell states "...the CAPM is generally superior to the
17 simple risk premium method because the CAPM specifically recognizes the risk of a
18 particular company or industry, whereas the simple risk premium method does not."
19 Please comment.

20 A. Mr. Parcell is incorrect. In his application of the CAPM, he relies upon the yield on 20-
21 year U.S. Treasury bonds as the risk-free rate. By definition, the yield on 20-year U.S.
22 Treasury bonds cannot recognize the risk of a particular company or industry. Moreover,
23 the beta is a measure of systematic risk and generally reflects on average only about
24 30% of company-specific risk. In contrast, the "simple" risk premium method which I use

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 relies upon the use of a company-specific expected bond yield. As shown on Schedule
2 2, pages 3 through 9 of Exhibit No. 400, S&P explains how and why the utility bond rating
3 process takes into account all of the basic components of business and financial risk. In
4 addition, a significant portion of my application of the "simple" risk premium method is
5 derived by the use of beta to allocate a total market equity risk premium. Consequently,
6 my approach to the risk premium analysis reflects all company-specific risk (i.e., in the
7 company-specific bond yield plus that portion which is contained in beta) and the
8 remainder of all risk is reflected through the use of beta in determining the applicable
9 equity risk premium. In view of the foregoing, Mr. Parcell's comments about the CAPM
10 versus the "simple" risk premium methods are incorrect.

11 Q. Please comment upon Mr. Parcell's use of historical yields on 20-year U.S. Treasury
12 bonds.

13 A. Mr. Parcell's use of historical yields on 20-year U.S. Treasury bonds ignores the fact that
14 both the cost of capital and ratemaking are prospective. The cost of capital, including the
15 cost rate of common equity is expectational, in that it reflects investors' assessment of
16 future risks, including interest rate trends. Ratemaking is prospective in that the rates set
17 in this proceeding will be in effect for a period of time in the future.

18 Mr. Parcell has also ignored the tenets of the Efficient Market Hypothesis (EMH),
19 discussed in detail in my direct testimony at page 22, line 17 through page 24, line 15,
20 which states that the "semistrong" form of the EMH is generally held to be true where all
21 perceived risks are taken into account by investors in the prices they pay for securities
22 and investors are aware of all publicly-available information, including bond ratings,
23 discussions about companies by bond rating agencies and investment analysts, as well
24 as the many interest rate forecasts available. Consistent with the EMH upon which the

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 cost of common equity models utilized by both Mr. Parcell and myself are predicated,
2 investors do rely upon such interest rate projections which incorporate historical trends as
3 well as expectations. Consequently, such projections should be utilized in a cost of
4 common equity analysis.

5 Q. Please comment upon Mr. Parcell's estimation of the market return component of his
6 CAPM analysis.

7 A. Mr. Parcell used the actual achieved rates of earnings on book common equity of the
8 S&P 500 Composite for the period 1978-2004 as shown on Schedule 7 of Exhibit __
9 (DCP-1). As discussed previously, both the cost of capital and ratemaking are
10 prospective in nature. And, the underlying theory of the CAPM requires the use of an
11 *expected market return*. Therefore, the use of historically achieved earnings on book
12 common equity is inconsistent with both the prospective nature of the cost of capital and
13 ratemaking as well as with the very theory of the CAPM. In his alternative CAPM
14 analysis, Mr. Parcell calculates the historic risk premium using Ibbotson Associates'
15 average total return on large company stocks from 1926-2005, which are appropriately
16 market returns – not returns on book common equity. Thus, Mr. Parcell's two CAPM
17 analyses are a mismatch because he has mixed returns on book common equity with
18 market returns. Moreover, in estimating the total return on the market, whether by
19 returns on book common equity or with market returns, he gave no consideration to
20 forecasted market returns. This is in total contradiction to his recognition of the need to
21 use an *expected total return* (page 24, line 1 of his direct testimony).

22 Q. At lines 26-29 on page 23 of his direct testimony, Mr. Parcell notes that he has
23 considered both the arithmetic and geometric mean returns for the S&P500 as tabulated
24 by Ibbotson Associates. Please comment.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 A. As discussed in Exhibit No. 10 at page 38, line 28 through page 40, line 7, it is the
2 arithmetic mean return that is appropriate for cost of capital purposes precisely because it
3 does capture the effect of changing economic conditions on risk premia over time.
4 Because historical total returns and equity risk premia spreads differ in size and direction
5 over time, the arithmetic mean provides insight into the variance and standard deviation
6 of returns. The prospect for variance, i.e., standard deviation, captured in the arithmetic
7 mean, provides the valuable insight needed by investors and rate of return analysts alike
8 to estimate the expected risk of stocks. Absent such insight, investors cannot
9 meaningfully evaluate prospective risk.

10 As stated previously, the financial literature is quite clear on this point, namely
11 that risk is measured by the variability of expected returns, i.e., the probability distribution
12 of returns. Ibbotson Associates explains in detail, in pages 77 through 83 of Stocks,
13 Bonds, Bills and Inflation: Valuation Edition 2006 Yearbook, shown at pages 2 through 8
14 of Schedule 13 of Exhibit No. 400, why the arithmetic mean calculated over a very long
15 period of time is the correct mean to use when estimated the cost of capital.

16 Weston and Brigham³ provide the standard financial textbook definition of the
17 riskiness of an asset when they state:

18 The riskiness of an asset is defined in terms of the likely variability of
19 future returns from the asset. (emphasis added)

20 Morin states⁴:

21
22 The geometric mean answers the question of what constant return an
23 investor would have to achieve in each year to have his or her
24 investment growth match the return achieved by the stock market. The
25 arithmetic mean answers the question of what growth rate is the best

³ J. Fred Weston and Eugene F. Brigham, Essentials of Managerial Finance, 3rd Ed., The Dryden Press, 1974, p. 272.

⁴ Id., at p. 276.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 estimate of the future amount of money that will be produced by
2 continually reinvesting in the stock market. (emphasis added)
3

4 As previously discussed, investors gain insight into relative riskiness by analyzing
5 expected future variability. This is accomplished by the use of the arithmetic mean of a
6 distribution of returns / premia because it takes into account all of the returns / premia,
7 hence, providing meaningful insight into the variance and standard deviation of those
8 returns / premia.

9 Q. Can it be demonstrated that the arithmetic mean takes into account all of the returns and
10 therefore, that the arithmetic mean is appropriate to use when estimating the opportunity
11 cost of capital?

12 A. Yes. Schedule 10 of Exhibit No. 210, which consists of two pages, graphically
13 demonstrates this premise. Page 1 charts the returns on large company stocks for each
14 and every year, 1926 through 2005 from Ibbotson Associates' Stocks, Bonds, Bills, and
15 Inflation – Valuation Edition 2006 Yearbook. It is clear from looking at the variation of
16 these returns that stock market returns, and hence, equity risk premia, vary.

17 Shown on page 2 is the distribution of each and every one of those annual
18 returns for the entire period from 1926 through 2005. There is a clear bell-shaped pattern
19 to the probability distribution of returns. The arithmetic mean of this distribution of returns
20 takes into account all of the returns in the distribution and thus the potential variance and
21 standard deviation likely to be experienced in the future when estimating the rate of
22 return based upon such historical returns. In contrast, the bold years: 1926 and 2005,
23 on page 2 of Schedule 10, demonstrate that when the geometric mean is calculated, only
24 two of the returns are taken into account, namely the initial and terminal years, which, in
25 this case, are 1926 and 2005. Based upon only those two years, a constant rate of

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 return is calculated by the geometric average. That constant return, when represented
2 graphically, would be a flat line over the entire 1926 to 2005 time period which is
3 obviously far different from reality, based upon the probability distribution or returns
4 shown on page 2 and demonstrated on page 1.

5 In view of all the foregoing, it should be clear that the arithmetic mean long-term
6 historical risk premium takes into account the standard deviation of returns, which is
7 critical to risk analysis. Therefore, Mr. Parcell's inclusion of geometric mean returns in
8 inappropriate for estimating the cost of capital and hence also for ratemaking purposes.

9 Q. Do you have any further comment upon Mr. Parcell's CAPM analysis?

10 A. Yes. In addition to his incorrect use of returns on book common equity in developing the
11 market return component of the CAPM, his inclusion of geometric market returns and his
12 use of historical yields as the risk-free rate and only historical market returns, Mr. Parcell
13 failed to consider that although numerous tests of the CAPM have confirmed its validity, it
14 has been determined that the empirical Security Market Line (SML) described by the
15 traditional CAPM is not as steeply sloped as the predicted SML. (See Statement No. 10,
16 my direct testimony at page 45, line 12 through page 46, line 18). Hence, the traditional
17 CAPM understates the cost rate for common equity for companies with betas less than
18 1.0 and overstates the cost rate for companies with betas greater than 1.0, Mr. Parcell
19 erred by not employing the Empirical CAPM (ECAPM).

20 Q. Do you have any comments regarding Mr. Parcell's application of the CEM?

21 A. Yes. At page 28 of OCA Statement No. 2, Mr. Parcell discusses his CEM result of no
22 more than 10.0% for comparison utilities. As support for his conclusion he cites recent
23 returns of 11.5% to 12.6% and market-to-book ratios of 177% or greater as well as
24 prospective returns of 10.8% to 12.3% coupled with market-to-book ratios in excess of

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 195%. He concludes that "[a]s a result, it is apparent that returns below this level would
2 result in market-to-book ratios of well above 100 percent. An earned return of 10
3 percent or less should thus result in a market-to-book ratio of at least 100 percent." By
4 these statements, it is clear that Mr. Parcell believes that a direct relationship exists
5 between market-to-book ratios and the rate of earnings on book common equity. Such a
6 relationship is not supported by either the academic literature nor by a historical analysis
7 of the experience of non-price regulated companies.

8 Q. What does the academic literature say about the relationship between allowed regulatory
9 rates of return on common equity and utility market-to-book ratios?

10 A. It is very clear from the academic literature that there is no such relationship. Phillips⁵
11 states the following:

12 *Many question the assumption that market price should equal book*
13 *value, believing that 'the earnings of utilities should be sufficiently high to*
14 *achieve market-to-book ratios which are consistent with those prevailing*
15 *for stocks of unregulated companies.*

16
17 In addition, Bonbright⁶ states:

18
19 *In the first place, commissions cannot forecast, except within wide limits,*
20 *the effect their rate Orders will have on the market prices of the stocks of*
21 *the companies they regulate. In the second place, whatever the initial*
22 *market prices may be, they are sure to change not only with the*
23 *changing prospects for earnings, but with the changing outlook of an*
24 *inherently volatile stock market. Moreover, even if a commission did*
25 *possess the power of control, any attempt to exercise it . . . would result*
26 *in harmful, uneconomic shifts in public utility rate levels. (italics added)*

⁵ Charles F. Phillips, Jr., The Regulation of Public Utilities – Theory and Practice, 1993, Public Utilities Reports, Inc., Arlington, VA, p. 395.

⁶ James C. Bonbright, Albert L. Daniels, and David R. Kamerschen, Principles of Public Utility Rates, 1988, Public Utilities Reports, Inc., Arlington, VA, p. 334.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 Q. Have you performed an analysis to determine whether or not there exists a direct
2 relationship between the market-to-book ratios of non-price regulated companies and
3 their earned rates of return on book common equity?

4 A. Yes. There is no relationship. The results of my analysis are presented on Schedule 11
5 of Exhibit No. 210. I analyzed the market-to-book ratios and earned rates of return on
6 book common equity for the S&P Industrial Index and its successor, the S&P 500
7 Composite Index, which does not include public utilities, over a long period of time. On
8 Schedule 11, I have shown the market-to-book ratios, rates of return on book common
9 equity (earnings/book ratios), annual inflation rates, and the earnings/book ratios net of
10 inflation (real rate of earnings) annually for the years 1947 through 2005. In each and
11 every year, the market-to-book ratios equaled or exceeded 1.00 times. In 1949, the only
12 year in which the market-to-book ratio was 1.00 (or 100%), the real rate of earnings on
13 book equity, adjusted for deflation, was 18.1% (16.3% + 1.8%). In contrast, in 1961,
14 when the S&P Industrial Index experienced a market-to-book ratio of 2.01 times, the real
15 rate of earnings on book equity for the Index was only 9.1% (9.8% - 0.7%). In 2005, the
16 preliminary market-to-book ratio for the Index was 3.35 times, while the average real rate
17 of earnings on book equity was 16.5% (19.9% - 3.4%).

18 This analysis clearly demonstrates that competitive, non-price regulated
19 companies have never sold below book value, on average, and have sold at book value
20 in only one year since 1947. The data show that there is no relationship between
21 earnings/book ratios and market-to-book ratios.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 supra and, in addition, because of the impact of timing differences on issues of fixed
2 capital which have a significant bearing on the overall cost of capital. It must be kept in
3 mind that when NFGDC needs capital in order to provide service to its customers, it must
4 obtain that capital regardless of capital market conditions at that time. Also, whatever
5 common equity cost rate is allowed by this Commission, it will simply be an opportunity
6 cost rate which will be impacted by attrition caused by rising investment in rate base,
7 increasing expenses, and the impact of weather attributable to not having a weather
8 normalization clause in effect in the Pennsylvania jurisdiction versus the expected
9 *actually-earned rate of return on NFG's pension fund portfolio of assets. There is also an*
10 additional timing difference because the expected pension fund returns, aside from the
11 problems associated with their use described supra, is that they are as of April 2005 and
12 we are now facing market conditions in late 2006 going forward with a rate year ending
13 January 31, 2007. In addition, as indicated in the Mercer letter, attached to the
14 Company's response to OSBA-1-7, the 8.25% assumed rate of investment return is
15 based upon "the 60th and 65th percentile of the reasonable range of returns." Hence, it
16 does not represent the average expected return on the pension fund assets. Moreover,
17 only 69% of NFG's pension fund asset allocation is in equity securities, while 22% is in
18 fixed income securities, 3.0% in cash, and 6.0% in real estate. Hence, the 8.25% is not a
19 return on equity, but rather a composite return on NFG's investment in a diversified
20 portfolio of equity, fixed income and real estate and not an appropriate return to compare
21 with the Company's requested common equity return rate related to the common equity
22 financed portion of NFGDC's Pennsylvania jurisdictional gas distribution rate base.

23 For all of the foregoing reasons, Mr. Knecht's use and reliance upon NFG's
24 *pension fund expected return of 8.25% is inappropriate and should be rejected.*

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 Q. At pages 10-11 of OSBA Statement No. 1, Mr. Knecht compares the Company's
2 requested common equity cost rate of 12.25% to the allowed rates of return contained in
3 Exhibit No. 400, Schedule 16 for gas distribution companies between January 2004 and
4 March 2006. How do you respond?

5 A. The average allowed ROE for all those companies remains 10.66% for January 2004
6 through June 2006 as shown on Schedule 6 of Exhibit No. 210, which indicates to me
7 that this Commission's recent allowed returns to Aqua Pennsylvania of 10.6% (with a
8 S&P bond rating of AA- and a less risky business profile of "2") and PPL of 10.7% (with a
9 bond rating similar to NFGDC's implicit bond rating of A- and also a similar equivalent
10 business profile of "4" as discussed supra) certainly pass a reality check and confirm that
11 the return rates recommended by all of the other witnesses, including Mr. Knecht, are
12 significantly understated. As indicated from the information contained in my direct
13 testimony and a trend toward rising interest rates, including long-term rates which affect
14 the cost of equity, NFGDC's small size and lack of protection from the vagaries of
15 weather on revenues and earnings vis-à-vis the proxy LDCs, a prospective 12.25% cost
16 of common equity is realistic in contrast to 10% (the middle of the range recommended
17 by Mr. Knecht of 9.75%-10.25%). Moreover, the recent average award to LDCs of
18 10.66% and an indicated cost rate of 11.03% – based upon the 4.63% equity risk
19 premium implied in those awards plus a forecast of A-rated public utility bond yields of
20 6.40%, discussed supra, provides further confirmation of the propriety of a 12.25% ROE
21 for NFGDC, especially in view of its greater business risk vis-à-vis the proxy LDCs.

22 Q. On page 14 through page 15 of OSBA Statement No. 1, Mr. Knecht states that because
23 the current yield curve is both "relatively flat" and "slightly inverted" that "there is no

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 expectation that interest rates will rise in the future” and therefore, he relies on short-term
2 U.S. Treasury Bill as the risk-free rate. Is he correct?

3 A. No. The investment horizon for equities of utilities is long-term. Indeed, the standard
4 DCF model presumes an infinite investment horizon. Thus, the use of long-term bonds
5 (U.S. Treasury in the CAPM) is essential for the reasons discussed in Statement No. 10,
6 my direct testimony, as well as infra. Because of the long-term nature of investment in
7 utility equities, it is more appropriate to use yields on 30-year Treasury Bonds. Moreover,
8 the consensus forecast yield on the 30-year Treasury Bond averages 5.05% based upon
9 the April 1, 2006 Blue Chip Financial Forecasts, a copy of which is contained at Schedule
10 12, page 7 of Exhibit No. 400. That publication is investor-influencing and its forecasts
11 represent a consensus of approximately 50 of this country's leading economists. For the
12 same reasons that one utilizes the best estimate of prospective long-term growth in
13 market value for use in the DCF model, one must also utilize the best estimate of a long-
14 term risk-free yield in the CAPM and when estimating the equity risk premium, which is a
15 random variable.

16 Q. At page 14 of OSBA Statement No. 1, Mr. Knecht states that the literature indicates that
17 a risk-free rate used in the CAPM “should at least consider the short-term risk-free rate”.
18 He then quotes from Ibbotson Associates and suggests that because NFGDC has filed
19 three base rate cases in the past five years, that a short-term risk-free rate should be
20 considered. Please comment.

21 A. The full quote from Ibbotson Associates addressing the choice of a risk-free rate is
22 contained at page 47 of my direct testimony, Statement No. 10. It is interesting that the
23 excerpted quote shown at lines 1-2 on page 15 of Mr. Knecht's testimony ignores the
24 remainder of Ibbotson Associates' discussion which is as follows:

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 When valuing a business that is being treated as a *going concern*, the
2 appropriate Treasury yield should be that of a *long-term Treasury bond*.
3 (italics added for emphasis)
4

5 They go on to state with regard to common stocks,

6 *Note that the horizon is a function of the investment, not the investor.* If
7 an investor plans to hold stock in a company for only five years, the yield
8 on a five-year Treasury note would not be appropriate since the
9 company will continue to exist beyond those five years. (italics added for
10 emphasis)
11

12 In addition to the foregoing, it should be clear that there should be a match-up
13 between the long-term investment horizon of the common stock for which the equity
14 return is being estimated and the risk-free rate. Keeping in mind the infinite investment
15 horizon implicit in the standard DCF model, in the case of the common stocks of going
16 concerns such as LDCs, the use of a long-term Treasury yield is essential in the
17 application of the CAPM.

18 As to the citation of Dr. Roger Morin made by Mr. Knecht (at page 15, lines 5-6), I
19 have included here as Schedule 12 of Exhibit No. 210, the cover and pages 308 and 309
20 from Dr. Morin's text. Please note that in citing Harrington (1987), it is stated:

21 ...the rate of Treasury bills like that on most short-term marketable
22 instruments is quite volatile. One way to approach the problem of
23 dealing with the risk premium factor is to use the long-term interest rate
24 instead of the risk-free rate. ... *The most widely used proxies, 30- or 90-*
25 *day Treasury bill rates are empirically inadequate and theoretically*
26 *suspect.* (p. 309) (italics added)
27

28 Also, on page 308, Dr. Morin states:

29 *The yields on long-term Treasury bonds match more closely with*
30 *common stock returns.* For investors with a long time horizon, a long-
31 term government bond is almost risk-free. (italics added)
32

33 In view of the foregoing, it should be clear that in the application of a CAPM, the
34 use of a long-term Treasury bond yield is the best approximation of the risk-free rate

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 because it is not nearly as volatile as shorter term rates and more closely matches the
2 long-term investment horizon of common stocks, particularly those of going concerns
3 such as LDCs. The timing of rate cases is irrelevant to the fact that the common stock
4 and company will continue to exist indefinitely.

5 Q. At page 15 of his testimony, OSBA Statement No. 1, Mr. Knecht obliquely challenges the
6 meaningfulness of the use of interest rate forecasts by economic forecasters by stating
7 "that there is no market expectation that interest rates will rise in the future". How do you
8 respond?

9 A. It is quite clear that forecasts influence investors. For example, if a release comes forth
10 that a company's expected profits are expected to decline, there is invariably an adverse
11 impact on its market price. Under the EMH, investors are clearly aware of these
12 forecasts which do influence their actions. The Blue Chip Financial Forecasts represent
13 the consensus of about 50 of the country's most prominent economists. Their consensus
14 forecast certainly influences investors. In addition, most investors expect that with the
15 economy going strong, long-term interest rates will be moving up in addition to the recent
16 move upward in short-term interest rates. Because ratemaking is prospective, there
17 should be a proper matching of the yields that investors are contemplating when the
18 prices for securities are established.

19 Q. On the bottom of page 16 through the top of page 17 of OSBA Statement No. 1, Mr.
20 Knecht suggests that your market risk premium metrics are excessive. Please comment.

21 A. The information shown in Exhibit No. 400, Schedule 13, pages 5-8 indicates that market
22 returns, and hence equity risk premiums, are random variables and that the best estimate
23 of a future random variable is the arithmetic mean of such returns over a long period of
24 time. The long-term historical arithmetic mean return on the market has been 12.3%

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 (Schedule 12, page 6 of Exhibit No. 400). With a long-term, i.e., infinite, investment
2 horizon there is every reason to believe that the random variable will average 12.3% (the
3 arithmetic mean of the long-term historical experience of the random variable) over the
4 long-term future. Again, it is important to be mindful of the long-term investment horizon
5 implicit in common stocks (not that of individual investors) and the infinite investment
6 horizon implicit in the standard DCF model employed by all witnesses in this proceeding.

7 Q. At pages 18-20 of OSBA Statement No. 1, Mr. Knecht discusses beta and suggests that
8 an unadjusted beta should be utilized. Is he correct?

9 A. No. As discussed supra, the investment horizon of the common stocks of going concerns
10 is very long; and the investment horizon implicit in the standard DCF model is infinity.
11 The need to adjust betas for regression bias has been well established for three decades
12 as a result of the research by Marshall Blume (Journal of Finance, June 1975).
13 Moreover, Value Line has in excess of 100,000 subscribers and anyone who wants
14 access to its information can do so in the business reference section of better libraries
15 everywhere in America. In addition, most brokerage houses have it available for
16 reference by customers. Consequently, I believe that Value Line is the most investor-
17 influencing financial publication which makes betas available – and it publishes adjusted
18 betas.

19 As to Mr. Knecht's use of Ibbotson Associates' betas, I believe that it is entirely
20 incorrect to use median betas for a 10-year period of time for unidentified groups of
21 companies which have differed in number from year to year. Mr. Knecht has not
22 specifically related these betas to the proxy companies in question. Hence, one should
23 not average or use median betas for the purpose at hand, i.e., computing the cost of
24 equity for a specific LDC.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 Q. At page 23 of OSBA Statement No. 1, Mr. Knecht suggests that you arbitrarily excluded
2 all DCF observations below 9.45%. How do you respond?

3 A. Admittedly, I did utilize common sense in applying reality to my practical DCF results.
4 But the application was not arbitrary. The information contained in Schedule 16 of Exhibit
5 No. 400, clearly sets forth all of the authorized ROEs to gas distribution companies (or
6 gas distribution operations of combination electric and gas companies) during the period
7 January 1, 2004 through March 30, 2006. It is clear that the lowest awarded ROE was
8 9.45%. That information, combined with my comments about the recent awards by this
9 Commission to Aqua Pennsylvania of 10.6% and PPL of 10.7% supra indicate that Mr.
10 Knecht's recommendation does not pass a reality check. Moreover, the average award
11 of 10.66% from all those contained in Schedule 6 of Exhibit No. 210 and an indicated
12 cost rate of 11.03% based upon the implied average equity risk premium of 4.63%, plus a
13 forecast yield of 6.40% on A rated public utility bond yields discussed supra further
14 confirm that Mr. Knecht's recommendation is not reasonable, especially when NFGDC's
15 unique risks are considered. Moreover, his comment about my sample companies being
16 like the children in Lake Wobegone is totally off-point. If one wanted to get an idea of
17 what a healthy person looks like, he would not (indeed should not) make his
18 determination by blending extremely ill people with healthy people in the sample. The
19 composite would not be that of a healthy person. A healthy utility would be, at a
20 minimum, the one with the lowest awarded ROE by regulators.

21 Nevertheless, I did rely on all of my DCF results, including those that patently
22 understate investors' required return rates and adjusted them for financial leverage in
23 accordance with this Commission's methodology. As shown on Schedule 8, page 1 of
24 Exhibit No. 400, the average adjusted DCF cost rate for the four company group is

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 10.76% and 10.30% for the nine company group. Such a DCF cost rate also needs to be
2 viewed in the context of the Aqua Pennsylvania Order cited supra where the Commission
3 found that the ALJ failed to sufficiently consider the other standard financial models
4 including Comparable Earnings, the Risk Premium model, and the CAPM as checks on
5 the reasonableness of the DCF results. Such checks, along with the recent awards by
6 this Commission and other Commissions, discussed supra, make it clear that common
7 equity cost rates of 8.75%, 9.75% and 10.00% are not reasonable and will not pass
8 muster with the financial community.

9 Q. At page 24 of OSBA Statement No. 1, Mr. Knecht suggests that your use of earnings
10 estimates from Value Line and FirstCall is not reasonable. Please respond.

11 A. There have been a number of studies which confirm that the most investor-influencing
12 measure of growth is the growth rate in EPS. Moreover, individual investors are more
13 likely to rely on the information from securities analysts and their forecasts because those
14 forecasts incorporate history and provide significant insight into prospective growth. In
15 fact, the father of the standard DCF model used in utility rate regulation today, Myron J.
16 Gordon, in a presentation before the Institute for Quantitative Research and Finance,
17 Palm Beach, FL, in February 1990 confirmed his belief that analysts' forecasted growth in
18 EPS is an excellent measure to use for the growth term in the DCF model when he
19 stated:

20 ...[v]alues for earnings and growth based on a consensus of security
21 analysts' estimates will do an excellent job of explaining the variation in
22 price among stocks.
23

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 Q. At pages 29-32 of OTS Statement No. 1, Mr. Deardorff suggests that your risk premium
2 and CAPM results should be rejected for the determination of the appropriate cost of
3 capital. Please comment.

4 A. Mr. Deardorff's reasoning is flawed. The prices investors pay for common stocks reflect
5 the long-term, infinite, investment horizon which is implicit in the constant growth DCF
6 model upon which Mr. Deardorff relies exclusively. Consequently, it is incorrect for Mr.
7 Deardorff to state at page 29 line 22 through page 30, line 3 of OTS Statement No. 1 that
8 "regulators can never be certain that economic and regulatory conditions underlying the
9 historical period during which the risk premiums were calculated are the same today or in
10 the future." In his application of the DCF model, he relies upon a forecasted rate of
11 growth in earnings per share over the next five years which he correctly states also
12 incorporates historical performance. The constant growth DCF model presumes an
13 infinite growth horizon. How accurate an estimate of the infinite future can an estimate
14 for the next five years be, even if it incorporates five, ten or fifteen years' historical
15 performance? The discussion at pages 38-40 of Statement No. 10 and the information
16 set forth in Schedule 13 of Exhibit No. 400, explain why the use of a long-term average
17 historical equity risk premium is appropriate. It does not mean that such a long-term
18 average is constant any more than the growth rate in the DCF model is constant. Neither
19 is constant in the literal sense, but each is expectationally constant; that is, they are
20 expected to vary randomly around an average expected mean value.

21 Q. At page 30 of OTS Statement No. 1, Mr. Deardorff suggests that an implicit assumption
22 when using the risk premium and CAPM methods "is that the variables determining the
23 equity and debt cost rates are the same, which allow the analyst to apply a constant risk
24 premium." Is he correct?

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 .A. No. The information shown on page 3, Schedule 13, of Exhibit No. 400 has been
2 excerpted from Ibbotson Associates, SBBI Valuation Edition 2006 Yearbook. It shows
3 equity risk premia realized per year from 1926 through 2005. In the discussion by
4 Ibbotson Associates at pages 5 and 6 of Schedule 13, Exhibit No. 400, they discuss
5 those equity risk premia and show that the serial correlation of such premia is 0.04, i.e.,
6 essentially zero and state:

7 A serial correlation near zero indicates that the returns are random or
8 unpredictable from one period to the next. ...The significance of this
9 evidence is that the realized equity risk premium next year will not be
10 dependent on the realized equity risk premium from this year ... For
11 example, if this year's difference between the riskless rate and the return
12 on the stock market is higher than last year's, that does not imply that
13 next year's will be higher than this year's. It is as likely to be higher as it
14 is lower. The best estimate of the expected value of a variable that has
15 behaved randomly in the past is the average (or arithmetic mean) of its
16 past values.

17
18 In view of the foregoing, the best expectation of the future infinite horizon is the
19 arithmetic mean of the long-term historic equity risk premia. If Mr. Deardorff's
20 presumption about the risk premium and CAPM models were correct, then the standard
21 DCF model should also be ignored because it presumes a constant growth rate into
22 infinity.

23 Q. At the top of page 31 of OTS Statement No. 1, Mr. Deardorff questions the credibility of
24 the CAPM. He cites an article by Fama and French from 1992. Please comment.

25 A. The Fama and French article was soundly rebutted by an article published in the Fall of
26 1993 in the Journal of Portfolio Management, by Fischer Black, the Black of the famous
27 Sharpe, Lintner, Black SLB model, which Fama and French refer to often in their article.
28 In his rebuttal, Black states:

29 Fama and French claim to find evidence against this model. They say
30 that their results 'seem to contradict' the evidence that the slope of the

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 line relating expected return and beta is positive. This is a misstatement,
2 in my view. Even in the period they choose to highlight, they cannot rule
3 out the hypothesis that the slope of the line is positive. Their results for
4 beta and average return are perfectly consistent with the SLB Model.
5

6 Moreover, if the line is really flat, that implies dramatic investment
7 opportunity for those who use beta. A person who normally holds both
8 stocks and bonds or stocks and cash can shift to a portfolio of similar
9 total risk but higher expected return by emphasizing low-beta stocks.
10

11 Beta is a valuable investment tool if the line is as steep as the CAPM
12 predicts. It is even more valuable if the line is flat. No matter how steep
13 the line is, beta is alive and well (page 9).
14

15 Announcements of the death of beta seem premature. The evidence
16 that prompts such statements implies more uses for beta than ever.
17 Rational investors, who can borrow freely, whether individuals or firms,
18 should continue to use the CAPM and beta to value investments and to
19 choose portfolio strategy (page 17).
20

21 Consistent with the EMH, investors are aware of Black's responses, as well as
22 the fact that the CAPM is still widely utilized and beta is still readily available and in
23 demand. Consequently, Mr. Deardorff's concern about the credibility of the CAPM is
24 completely without merit. Each cost of common equity model has flaws. No model is
25 perfect. That is why all of the models, properly applied should be considered, consistent
26 with the dictates of the EMH.

27 Q At pages 31-32 of OTS Statement No. 1, Mr. Deardorff claims that your use of the
28 ECAPM overcompensates for the beta stability problem resulting in biased over
29 estimates. Is he correct?

30 A. No. Mr. Deardorff does not comprehend the essence of the ECAPM. Adjusted betas
31 are used in the application of the traditional CAPM. The purpose for using adjusted betas
32 is to account for regression analysis bias, i.e., the tendency of low beta stocks to rise
33 toward one and of high beta stocks to decline toward one. The adjustment process to
34 beta takes care of the regression bias. However, the empirical studies referred to (see

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 Note 16 on page 45 of Statement No. 10) showed that the traditional CAPM, which
2 requires the use of *adjusted betas*, understates the common equity cost rate for
3 companies whose betas are less than one and overstates for those whose betas are
4 greater than one because the slope of the line is not as steep as the Security Market line
5 (SML) predicted by the CAPM. The ECAPM process takes that *additional tendency* into
6 account.

7 On this subject, I had been in communication with Dr. Morin via e-mail. That
8 correspondence, including Dr. Morin's response is contained in Schedule 13 of Exhibit
9 No. 210 which consists of four pages. The information in Schedule 13 indicates that the
10 ECAPM compensates for CAPM's inherent bias by ascribing a higher intercept and flatter
11 slope to CAPM. It is not an attempt to increase beta. Dr. Morin states:

12 There are two distinct separate issues involved when implementing the
13 CAPM. First given the validity of the standard CAPM, what is the best
14 proxy for expected beta? Second, and more fundamentally, does the
15 standard form of the CAPM provide the best explanation of the risk-
16 return relationship observed on capital markets?

17 Regarding the CAPM, Dr. Morin states:

18 There have been countless empirical tests of the CAPM to determine to
19 what extent security returns and betas are related in the manner
20 predicted by the CAPM. The results of the tests support the idea that
21 beta is related to security returns, that the risk-return tradeoff is positive,
22 and that the relationship is linear. The contradictory finding is that the
23 risk-return tradeoff is not as steeply sloped as the predicted CAPM. That
24 is, low-beta securities earn returns somewhat higher than the CAPM
25 would predict, and high-beta securities earn less than predicted. This is
26 one of the most well-known results in finance. A CAPM-based estimate
27 of cost of capital underestimates the return required from low-beta
28 securities and overstates the return from high-beta securities, based on
29 the empirical evidence. The empirical form of the CAPM refines the
30 standard form of the CAPM to account for this phenomenon.

31
32 Thus, I do not share the view that the ECAPM is equivalent to a beta
33 adjustment. For utility stocks with betas less than one, the CAPM
34 understates the return. The ECAPM allows for the CAPM's inherent bias
35 by ascribing a high intercept and flatter slope to the CAPM. The ECAPM

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 is a return (Y-axis, vertical axis) adjustment. It is not a beta risk (X-axis,
2 horizontal) adjustment. The ECAPM is not an attempt to increase the
3 beta estimate, which would be horizontal x-axis adjustment. The
4 ECAPM is a return adjustment rather than a risk adjustment.
5 (underlining added for emphasis)
6
7

8 As indicated previously, Dr. Morin is a well-known finance professor and textbook
9 author, specializing in regulatory finance. Dr. Morin also notes that regulatory support for
10 the ECAPM can be found in the New York Public Service Commission's Generic
11 Financing Docket, Case 91-M-0509.

12 Mr. Deardorff's criticism of the ECAPM is unfounded.

13 Q. At page 32-34 of OTS Statement No. 1, Mr. Deardorff, in an attempt to negate your use
14 of the Comparable Earnings Model, provides two citations from Philadelphia Electric and
15 National Fuel Gas Distribution (NFGDC) Orders. Please comment.

16 A. With regard to the Philadelphia Electric Order of 1980, it may well be that the
17 Commission's comment about the model requiring numerous unsupportable assumptions
18 was correct on the evidence of record in that proceeding. My methodology needs to be
19 evaluated on its own merits. The same can be said with regard to the approach utilized
20 by another witness on the cost of equity in NFGDC's 1994 rate case. I was not a witness
21 in either of those cases. *The approaches used in those two cases are entirely different
22 than my approach, which is market-based.*

23 Moreover, the Commonwealth Court gave this Commission in its *Lower Paxton*
24 decision of 1974 the authority to consider many factors including "the earnings of
25 comparable companies with similar risks." This Commission has recognized its authority
26 from the Commonwealth Court decision re *Lower Paxton* in a number of cases. A more
27 recent example is in this Commission's Order dated January 28, 1998 re Western
 Utilities, Inc. in Docket No. R-00963856 when the Commission stated:

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 However, we note that in *Lower Paxton, supra*, at 143-144, the
2 Commonwealth Court recognized that this Commission may consider
3 such factors as ... and the earnings of comparable companies of similar
4 risks.

5
6 Also in the recent Aqua Pennsylvania Order entered August 5, 2004 cited supra,

7 the Commission stated:

8 In *Lower Paxton Township v. Pennsylvania Public Utility Commission*,
9 317 A.2d 917 (Pa. Cmwlth. Ct. 1974) (*Lower Paxton Township*), the
10 Court recognized that the Commission may consider factors which affect
11 the cost of capital, such as the utility's financial structure, credit standing,
12 dividends, risks, regulatory lag, wasting assets and any peculiar features
13 of the utility involved. Here, as in *PAWC*, we are guided by the spirit and
14 intent of *Lower Paxton*.

15
16 My methodology is market-based and the non-regulated companies selected are
17 indeed comparable in total risk to my proxy groups of LDCs.

18 Mr. Deardorff advocates exclusive use of the DCF methodology because the
19 prices investors pay reflect assessment of all perceived risks. As explained in my direct
20 testimony, Statement No. 10 at pages 52-53, comparable betas result in companies
21 comparable in non-diversifiable market (systematic) risk. Comparable standard errors of
22 the regressions result in companies which are comparable in diversifiable (non-
23 systematic) risk. Business and financial risks may vary between companies, but if the
24 collective averages of the groups of non-price regulated companies chosen as proxies for
25 the proxy groups of LDCs are similar, then the total, or aggregate, combined non-
26 diversifiable market risks and diversifiable non-systematic risks are similar. *Thus,*
27 *because my companies are selected based upon market data, they are comparable in*
28 *total risk (even though individual risks may vary) to the proxy groups of LDCs.* It is after
29 all, total risk which is reflected in market prices which the comparable risk, non-price
30 regulated, companies were selected. Consequently, the expected rates of earnings on

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 their book common equity are appropriate indicators of equity cost rates for the proxy
2 groups of LDCs because they are rates which are applicable to the common equity
3 financed portions of original cost (net book value) rate bases.

4 **B. OCA Witness Parcell**

5 Q. At pages 33-35 of his direct testimony, Mr. Parcell discusses his opinion that it is
6 inappropriate to give much weight to forecasts of Earnings Per Share (EPS) in a DCF
7 context. Is his opinion valid?

8 A. No. Based upon his contention that there is a direct relationship between earnings and
9 the market prices established by investors and his own use of analysts' earnings growth
10 rate forecasts, it is curious that he criticizes my use of analysts' forecasts of earnings
11 growth rates. Over the long run, there can be no growth in DPS without growth in EPS.
12 Earnings expectations have a more significant, but not sole, influence on market prices
13 than dividend expectations. Thus, the use of earnings growth rates in a DCF analysis
14 provides a better matching between investors' market appreciation expectations
15 subsumed in market prices and the growth rate component of the DCF. Consequently,
16 earnings expectations have a significant influence on market prices which affect market
17 price appreciation and hence, the "growth" expected by investors. This should be evident
18 even to relatively unsophisticated investors just by listening to financial news reports on
19 radio, TV or by reading the newspapers. In fact, Dr. Morin in his book, Regulatory
20 Finance – Utilities' Cost of Capital, (1994) states on page 153 "moreover, there is an
21 abundance of empirical research that shows the validity and superiority of earnings
22 forecasts to estimate the cost of capital."

23 In addition, Myron Gordon, the "father" of the standard regulatory version of the
24 DCF model utilized by Mr. Parcell and myself in the instant docket, recognized the

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 significance of analysts' forecasts of growth in EPS in a speech he gave in March 1990
2 before the Institute for Quantitative Research and Finance from which an excerpt is
3 quoted supra.

4 Professor Gordon recognized that total return is largely affected by the terminal
5 price which is mostly affected by earnings. However, while EPS is the most significant
6 factor influencing market prices, it is by no means the only factor that affects market
7 prices, a fact recognized by Bonbright with regard to public utilities as discussed
8 previously in both this rebuttal testimony and my direct testimony.

9 Studies performed by Cragg and Malkiel⁸ demonstrate that analysts' forecasts
10 are superior to historical growth rate extrapolations. Nonetheless, it does not really
11 matter what the level of accuracy of those analysts' forecasts is well after the fact. What
12 is important is that they influence investors and hence the market prices they pay.
13 Moreover, there is no empirical evidence that investors, consistent with the EMH, would
14 discount or disregard analysts' estimates of growth in earnings per share. Finally, it is
15 obvious that the majority of analysts' forecasts are from brokerage firms. Mr. Parcell
16 would like us to ignore reality by disregarding the largest influence on individual investors
17 who own between 48% and 50% of all the common stock shares of the companies in my
18 proxy groups (see Schedule 10 of Exhibit No. 400). Rate of return analysts who attempt
19 to emulate investor behavior, like Mr. Parcell and myself, should not ignore this reality.

20 Q. On page 35 of his direct testimony, Mr. Parcell states that "recent scandals involving
21 security analysts. . . conflicts of interest. . . as well as other negative connotations

⁸ John G. Cragg and Burton G. Malkiel, Expectations and the Structure of Share Prices, University of Chicago Press, 1982, Chapter 2.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 related to the reliability of analysts' forecasts. . . calls into question the reliance on
2 analysts' forecasts as the primary source of growth in a DCF context." Please comment.

3 A. Mr. Parcell's discussion is misplaced and poorly timed as there should be no concern
4 about the use of analysts' forecasts in 2006. Dr. Burton G. Malkiel, the Chemical Bank
5 Chairman's Professor of Economics at Princeton University is author of the widely read
6 national bestseller book on investing entitled, "A Random Walk Down Wall Street". In
7 testimony before the Public Service Commission of South Carolina, in November 2002,
8 Professor Malkiel affirmed his belief in the superiority of analysts' earnings forecasts
9 when he testified:

10 With all the publicity given to tainted analysts' forecasts and
11 investigations instituted by the New York Attorney General, the National
12 Association of Securities Dealers, and the Securities & Exchange
13 Commission, I believe the upward bias that existed in the late 1990s has
14 indeed diminished. In summary, I believe that current analysts' forecasts
15 are more reliable than they were during the late 1990s. Therefore,
16 analysts' forecasts remain the proper tool to use in performing a Gordon
17 Model DCF analysis. (Rebuttal testimony, South Carolina Electric and
18 Gas Co., pp. 16-17, Docket No. 2002-223-E)
19

20 Further confirmation that Professor Malkiel's view was correct is found in the
21 steps taken by the U.S. Securities and Exchange Commission (SEC) to remove the bias
22 revealed in the events discussed on page 35 of Mr. Parcell's direct testimony. Schedule
23 14 is a copy of a speech given on May 8, 2002 by Lori Richards, Director, Office of
24 Compliance Inspections and Examinations. She stated:

25 [t]he SEC approved rule changes proposed by the National Association
26 of Securities Dealers, Inc. and the new York Stock Exchange, Inc.
27 regarding analyst conflicts of interest. These rules reflect a dramatic
28 change in the way analysts are regulated.

29 The new rules include:

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

- 1) Limitations on the Relationships and Communications Between Investment Banking and Research Analysts.
- 2) Analyst Compensation Prohibitions.
- 3) Firm Compensation.
- 4) Promises of Favorable Research are Prohibited.
- 5) Restrictions on Personal Trading by Analysts.
- 6) Disclosures of Financial Interests in Covered Companies.
- 7) Disclosures in Research Reports Regarding the Firm's Ratings.
- 8) Disclosures During Public Appearances by Analysts.

10
11

Ms. Richards concluded her speech by stating:

12
13
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19

This is a time of change for research analysts. In some quarters, they have been vilified. It's important to remember that they perform an important service - - - and they need to do their work in an environment free from conflicts and biases. Investor trust is too critical to their work to allow them to be compromised. The new SRO rules approved by the SEC today, and the other steps we are taking, go a long way to helping analysts regain their independence.

20

Moreover, on April 28, 2003, the U.S. Securities & Exchange Commission issued

21

the following: "Statement Regarding Global Settlement Related to Analyst Conflicts of

22

Interest". A copy of that document is presented in Schedule 15 As can be seen, it states:

23

The settlements include important structural requirements designed to insulate research analysts from pressures by investment banking...

24

25

26

Inasmuch as April 2003 is now more than three years from the present time, investors for

27

some time have been fully aware of the new steps that have been taken to eliminate and

28

prevent analysts' bias. In view of these facts, and that investors have had ample time to

29

be able to detect analysts' bias as well as the rules in place to protect against conflicts of

30

interest, and all of the foregoing testimony, it is apparent that analysts' forecasts of

31

earnings remain the best predictor of growth for use in the DCF model.

32

Q. On page 36, lines 12-14 of OCA Statement No. 2, Mr. Parcell states "[t]o make a

33

modification of the DCF cost rates, as Mr. Hanley proposes, amounts to an attempt to

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 "reprice" stock values in order to develop a DCF cost rate more in line with what he thinks
2 the results should be." Please comment.

3 A. Just as with Mr. Deardorff, I am surprised that Mr. Parcell characterizes the leverage
4 adjustment as my proposal. To reiterate, it is an adjustment which has been utilized by
5 this Commission a number of times, including the Aqua Pennsylvania and PPL Orders
6 discussed supra, in order to recognize that a DCF cost rate understates investors'
7 required rate of return when the market value of common equity exceeds its book value.
8 The Commission recognized that such a financial risk difference (in equity ratios) should
9 be taken into account and hence the necessity for the adjustment. Mr. Parcell's criticism
10 of the adjustment is without merit because it is premised upon his presumption of a direct
11 relationship between the rate of earnings on book equity and market-to-book ratios,
12 which is contrary to what this Commission has determined and also to what my evidence
13 confirms as shown on Schedule 11 and discussed supra.

14 Because Mr. Parcell's basic premise is incorrect, his conclusion regarding this
15 adjustment is also incorrect. Moreover, because the Commission's adjustment has merit
16 in principle, it is appropriate to be applied to all types of utilities when market values are
17 well in excess of their book values and the DCF model is utilized.

18 Q. At line 9 on page 37 through line 3 on page 38 of OCA Statement No. 2, Mr. Parcell
19 criticizes your use of the holding period returns published by Ibbotson Associates.
20 Please comment.

21 A. Mr. Parcell's criticism of the long-term average holding period returns for the period 1926-
22 2005 is invalid for the reasons given by Ibbotson Associates in its Valuation Edition 2006
23 Yearbook and cited in my direct testimony at page 38, line 8 through page 40, line 7, as
24 discussed supra, and again in the Valuation Edition 2006 Yearbook excerpted as

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 Schedule 13 of Exhibit No. 400. I would also note that Mr. Parcell himself relied upon
2 Ibbotson Associates' long-term holding period returns in arriving at his conclusion of the
3 expected total return for the S&P 500 for use in his application of the CAPM.

4 The use of the long-term arithmetic mean, by both myself and Mr. Parcell in part,
5 is consistent with the long-term investment horizon of utilities' common stock. The typical
6 application of the DCF model used in regulation presumes an infinite, i.e., long-term,
7 investment horizon and a constant growth rate. The presumption of a constant growth
8 rate is no different than the presumption of a constant equity risk premium based upon
9 long-term historical holding period returns as discussed in my direct testimony, page 43,
10 line 12 through page 44, line 14. As Morin⁹ states:

11 It is not necessary that g be constant year after year to make the model
12 valid. *The growth rate may vary randomly around some average*
13 *expected value. Random variations around trend are perfectly*
14 *acceptable, as long as the mean expected growth is constant. The*
15 *growth rate must be 'expectationally constant' to use formal statistical*
16 *jargon. (italics added)*
17

18 The foregoing confirms that the RPM is similar to the DCF model. The use of a
19 very long-term historic mean equity risk premium does not mean that in actuality it is
20 constant year after year in order for the model to be valid. The equity risk premium may
21 vary randomly around some average expected value. In addition, the use of the long-
22 term arithmetic mean is not inconsistent with exclusive reliance upon analysts' earnings
23 growth forecasts in a DCF analysis as the arithmetic mean is expectational as discussed
24 supra. Therefore, in view of the foregoing and Mr. Parcell's own use of long-term historic

⁹ Roger A. Morin, Regulatory Finance – Utilities' Cost of Capital, 1994, Public Utilities Reports, Inc.,
Arlington, VA, p. 111.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 mean holding period returns, his criticism of my use of such returns is in error and should
2 be disregarded.

3 Q. Mr. Parcell criticizes your use of the empirical CAPM. Please comment.

4 A. Mr. Parcell states at lines 13-18 on page 38 of OCA Statement No. 2, that "[w]hat the
5 empirical CAPM actually does is inflate the CAPM cost for the selected company or
6 industry on one-fourth of its equity and assumes that one-fourth of the company has the
7 risk of the overall market." This statement reflects a misunderstanding of the empirical
8 CAPM. As discussed on page 45 of Statement No. 10, while numerous tests of the
9 CAPM have confirmed its validity, it is observed that the empirical Security market Line
10 (SML) as described by the traditional CAPM is not as steeply sloped as the predicted
11 SML. As shown on pages 3 and 4 of Schedule 13 of Exhibit No. 210, Dr. Roger A. Morin,
12 the author of Regulatory Finance: Utilities' Cost of Capital, states:

13 A CAPM-based estimate of cost of capital underestimates the return
14 required from low-beta securities and overstates the return from high-
15 beta securities, based on the empirical evidence. The empirical form of
16 the CAPM refines the standard form of the CAPM to account for this
17 phenomenon. . . . *For utility stocks with betas less than one, the*
18 *CAPM understates the return.* The ECAPM allows for the CAPM's
19 inherent bias by ascribing a higher intercept and flatter slope to the
20 CAPM. The ECAPM is a return (Y-axis, vertical axis) adjustment. It is
21 not a beta risk (X-axis, horizontal) adjustment. *The ECAPM is not an*
22 *attempt to increase the beta estimate, which would be a horizontal X-axis*
23 *adjustment. The ECAPM is a return adjustment rather than a risk*
24 *adjustment.* (italics added for emphasis.)
25

26 Hence, the ECAPM does not inflate the indicated CAPM cost rate on one-fourth
27 of its equity. Rather, it accounts for the phenomenon that the traditional CAPM
28 underestimates the required return for low-beta stocks and overestimates it for high-beta
29 stocks.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 Q. Mr. Parcell criticizes your application of the CEM by stating at lines 5-7 on page 39 of
2 OCA Statement No. 2 that "[t]he equivalence of beta does not indicate that the expected
3 earnings and cost of common equity for these non-utilities and utilities are the same."
4 Please comment.

5 A. Mr. Parcell's comments relative to the equivalence of beta are incorrect. The basis of my
6 CEM is identical to that presented in an article co-authored by Pauline M. Ahern and
7 myself published in the summer of 1994 in the American Gas Association's Financial
8 Quarterly Review entitled "Comparable Earnings: New Life for an Old Precept", attached
9 as Schedule 16 of Exhibit No. 210. The article presents a selection process of
10 unregulated, domestic companies based upon unadjusted betas which is entirely logical
11 and consistent with well-documented financial concepts supported by the academic
12 literature, namely, that beta is the product of market prices which, based upon the EMH,
13 reflect all elements of risk. The betas derived from those market prices reflect non-
14 diversifiable market systematic risk, while the residual standard deviations, or standard
15 errors of the regression analyses from which the betas were derived, reflect the
16 remaining company-specific (or non-systematic) risks. Thus, the selected comparable
17 domestic unregulated companies in my analysis are indeed comparable to the proxy
18 groups of LDCs on a total risk basis, i.e., the sum of non-diversifiable systematic risk and
19 diversifiable, unsystematic or company-specific, risk. Mr. Parcell's criticisms are
20 unfounded and should be disregarded.

21 Q. At lines 19-26 on page 39 of his direct testimony, Mr. Parcell asserts that NFGDC's size
22 is not a risk factor which needs to be considered when arriving at a common equity cost
23 rate applicable to NFGDC's rate base. Do you agree?

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 A. No. As discussed in my direct testimony, at page 9, line 4 through page 11, line 27,
2 NFGDC's size is a risk which must be considered in the development of a common equity
3 cost rate applicable to NFGDC's rate base. The rate of return established by the PA
4 PUC in this proceeding will be applied to NFGDC's Pennsylvania jurisdictional rate base.
5 It is a generally-accepted financial principle that the risk of any investment is directly
6 related to the asset in which the capital is invested. The Commission must focus on the
7 risk and return of an investment in NFGDC's Pennsylvania jurisdictional rate base
8 because it is that rate base which provides service to ratepayers and upon which an
9 overall fair rate of return (including the weighted cost rate of common equity capital) will
10 be applied.

11 The risk of investment in NFGDC's rate base is independent of the ownership of
12 that capital. It is a basic financial principle that it is the use of the funds invested which
13 gives rise to the risk of the investment, not the source of the funds. As Richard A. Brealey
14 and Stewart C. Myers state in Principles of Corporate Finance¹⁰:

15 *The true cost of capital depends on the use to which the capital is put.*

16 * * *

17 ***Each project should be evaluated at its own opportunity cost of***
18 ***capital; the true cost of capital depends on the use to which the***
19 ***capital is put.*** (italics and bold in original)
20

21 It is the specific risk of NFGDC's jurisdictional rate base and its small size vis-à-vis the
22 proxy companies which is relevant to establishing a common equity cost rate in this
23 proceeding and not the source of the capital (in this instance, all external capital is
24 provided by NFG).

¹⁰ Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance, McGraw-Hill Book Company, 1988, pp. 173 and 198.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Frank J. Hanley

1 For example, if one were to inherit money, free of charge, and then invest it in a
2 given utility's common stock, one would require a rate of return on that stock
3 commensurate with the risks to which that common stock investment is exposed. It
4 would be illogical to require a zero return on one's investment in the utility's common
5 stock just because there was zero cost in acquiring the capital (for example inherited
6 money which was the source of the investment). The Internal Revenue Service
7 establishes the cost basis to an heir upon the market value of the inherited common
8 stock on the date of death of the person who willed the stock to the heir and not on its
9 zero cost to the heir. As Mr. Parcell so clearly states in his citation from Bluefield¹¹ at
10 page 6, line 27 through page 7, line 1 of OCA Statement No. 2:

11 A public utility is entitled to such rates as will permit it to earn a return on
12 the value of the property which it employs for the convenience of the
13 public equal to that generally being made at the same time and in the
14 same general part of the country on investments in other business
15 undertakings which are attended by corresponding risks and
16 uncertainties; . . .
17

18 In this case, the relevant public utility is NFGDC, not NFG, as it is NFGDC's rate
19 base upon which the cost of capital set in this proceeding will be applied. The property
20 employed "for the convenience of the public" is the rate base of NFGDC, not NFG.
21 Therefore, it is the risk of NFG's investment in NFGDC's jurisdictional rate base that is
22 relevant. All else equal, size has a bearing on the risk of that rate base.

23 Q. Does that conclude your rebuttal testimony?

24 A. Yes, it does.

¹¹ Bluefield Water Works Improvement Co. v. Public Serv. Comm'n, 252 U.S. 679 (1922).

**NATIONAL FUEL GAS DISTRIBUTION CORPORATION
(PENNSYLVANIA DIVISION)**

**EXHIBIT
(Consisting of 16 Schedules)**

**TO ACCOMPANY THE
REBUTTAL TESTIMONY**

OF

**FRANK J. HANLEY, CRRA
PRESIDENT
AUS CONSULTANTS – UTILITY SERVICES**

**CONCERNING
FAIR RATE OF RETURN**

STANDARD
& POOR'S

CORPORATES

Corporate Ratings Criteria—Ratings and Ratios: Ratio Medians; Ratio Guidelines

Ratings and Ratios: Ratio Medians

The key ratio medians for U.S. corporates by rating category and their definitions are displayed below. The ratio medians are purely statistical, and are not intended as a guide to achieving a given rating level. The ratio guidelines that follow more faithfully represent the role of ratios in the ratings process.

In any event, ratios are helpful in broadly defining a company's position relative to rating categories. They are not intended to be hurdles or prerequisites that should be achieved to attain a specific debt rating.

Caution should be exercised when using the ratio medians for comparisons with specific company or industry data because of differences in method of ratio computation, importance of industry or business risk, and the impact of mergers and acquisitions. Because ratings are designed to be valid over the entire business cycle, ratios of a particular company at any point in the cycle may not appear to be in line with its assigned debt ratings. Particular caution should be used when making cross-border comparisons, because of differences in accounting principles, financial practices, and business environments.

Company data are adjusted for the following:

- Nonrecurring gains or losses are eliminated from earnings. This includes gains on asset sales, significant transitory income items, unusual losses, losses on asset sales, and charges because of asset writedowns, plant shutdowns, and retirement programs. These adjustments chiefly affect interest coverage, return, and operating margin ratios.
- Unusual cash-flow items similar in origin to the nonrecurring gains or losses also are reversed.
- The operating lease adjustment is performed for all companies. Companies that buy all plant and equipment are put on a more comparable basis with those that lease part or all of their operating assets. The lease adjustment affects all ratios.

Primary Credit Analysts

Solomon B Samson
New York
(1) 212-438-7653
sol_samson@
standardandpoors.com

Scott Sprinzen
New York
(1) 212-438-7812
scott_sprinzen@
standardandpoors.com

Emmanuel Dubois-Pelerin
Paris
(33) 1-4420-6673
emmanuel_dubois-pelerin@
standardandpoors.com

Publication Date

Oct. 28, 2004

Corporate Ratings Criteria—Ratings and Ratios: Ratio Medians; Ratio Guidelines

- The net debt adjustment affects median ratios largely for the 'AAA' rating category, composed almost entirely of cash-rich pharmaceutical companies.
- The captive-finance adjustment has a great effect, mainly on automobile, department store, and some capital goods companies.

The adjusted ratio median universe for industrials includes about 1,000 companies. The data exclude transportation companies that exhibit different financial-ratio profiles.

The medians themselves are affected by economic and environmental factors, as well as mergers and acquisitions. The universe of rated companies constantly is changing, and in certain rating categories, adding or deleting a few companies also can affect the financial-ratio medians.

Strengths and weaknesses in different areas have to be balanced and qualitative factors evaluated. There are many nonnumeric distinguishing characteristics that determine a company's creditworthiness (see Tables 1, 2, and 3).

Table 1

Key Industrial Financial Ratios, Long-Term Debt							
Three-Year (2001 to 2003) Medians							
	AAA	AA	A	BBB	BB	B	CCC
EBIT interest coverage (x)	23.8	13.6	6.9	4.2	2.3	0.9	0.4
EBITDA interest coverage (x)	25.3	17.1	9.4	5.9	3.1	1.6	0.9
FFD/total debt (%)	167.8	77.5	43.2	34.6	20.0	10.1	2.9
Free operating cash flow/total debt (%)	104.1	41.1	25.4	16.9	7.9	2.6	(0.9)
Total debt/EBITDA (x)	0.2	1.1	1.7	2.4	3.8	5.6	7.4
Return on capital (%)	35.1	26.9	16.8	13.4	10.3	6.7	2.3
Total debt/capital (x)	6.2	34.8	39.8	45.6	57.2	74.2	101.2

Table 2

Key Utility Financial Rates, Long-Term Debt					
2003 Medians					
	AA	A	BBB	BB	B
EBIT interest coverage (x)	5.0	3.2	2.3	1.9	0.8
FFD interest coverage (x)	8.8	4.7	3.9	2.7	1.4
FFD/Average total debt (%)	35.7	21.5	17.0	13.5	5.0
Net cash flow/Capital expenditures (%)	137.9	101.2	119.9	105.5	92.4
Total debt/Capital (%)	55.7	54.9	59.1	75.2	74.6
Return on common equity (%)	12.0	9.5	7.3	6.1	(26.1)

Table 3

Key Ratios	
Formulas	
1. EBIT interest coverage	Earnings from continuing operations* before interest and taxes/Gross interest incurred before subtracting capitalized interest and interest income
2. EBITDA interest coverage	Adjusted earnings from continuing operations** before interest, taxes, depreciation, and amortization/Gross interest incurred before subtracting capitalized interest and interest income

Corporate Ratings Criteria—Ratings and Ratios: Ratio Medians; Ratio Guidelines

Table 3

Key Ratios (cont. d)	
3. Funds from operations (FFO)/total debt	Net income from continuing operations, depreciation and amortization, deferred income taxes, and other non-cash items/Long-term debt\$ + current maturities + commercial paper, and other short-term borrowings
4. Free operating cash flow/total debt	FFO - capital expenditures - (+) increase (decrease) in working capital (excluding changes in cash, marketable securities, and short-term debt)/Long-term debt\$ + current maturities, commercial paper, and other short-term borrowings
5. Return on capital	EBIT/Average of beginning of year and end of year capital, including short-term debt, current maturities, long-term debt\$, non-current deferred taxes, minority interest, and equity (common and preferred stock)
6. Operating income/sales	Sales - cost of goods manufactured (before D&A), SG&A costs, and R&D costs/Sales
7. Long-term debt/capital	Long-term debt\$/Long-term debt\$ + shareholders' equity (including preferred stock) + minority interest
8. Total debt/capital	Long-term debt\$ + current maturities, commercial paper, and other short-term borrowings/Long-term debt\$ + current maturities, commercial paper, and other short-term borrowings + shareholders' equity (including preferred stock) + minority interest
9. Total debt/EBITDA	Long-term debt\$ + current maturities, commercial paper, and other short-term borrowings/Adjusted earnings from continuing operations before interest, taxes, and D&A
10. Discretionary cash flow/total debt	FFO - capital expenditures - (+) increase (decrease) in working capital (excluding changes in cash, marketable securities, and short-term debt) - common and preferred dividends/Long-term debt\$ + current maturities, commercial paper, and other short-term borrowings

*Including interest income and equity earnings; excluding nonrecurring items. **Excludes interest income, equity earnings, and nonrecurring items; also excludes rental expense that exceeds the interest component of capitalized operating leases. †Including amounts for operating lease debt equivalent, and debt associated with accounts receivable sales/securitization programs.

Ratio Guidelines

Risk-adjusted ratio guidelines depict the role financial ratios play in Standard & Poor's rating process, because financial ratios are viewed in the context of a company's business risk. A company with a stronger competitive position, more favorable business prospects, and more predictable cash flows can afford to undertake added financial risk while maintaining the same credit rating.

The guidelines displayed in the matrices make explicit the linkage between financial ratios and levels of business risk. For example, consider a U.S. industrial—which includes manufacturing, service, and transportation sectors—with an average business-risk profile. Cash-flow coverage of 60% would indicate an 'A' rating. If a company were below average, it would need about 85% cash flow coverage (which could be achieved through extremely conservative financial policies) to qualify for the same rating.

Similarly, for the 'A' category, a company with an above-average business risk profile could tolerate about 40% leverage, and an average company, only 30%. The matrices also show that a company with only an average business position could not aspire to an 'AAA' rating, even if its financial ratios were extremely conservative.

The ratio medians Standard & Poor's has been publishing for more than two decades are merely statistical composites. They are not rating benchmarks, precisely because they gloss over the critical link between a company's financial risk and its business risk. Medians are based on historical performance, while Standard & Poor's risk-adjusted guidelines refer to expected future performance.

Guidelines are not meant to be precise. Rather, they are intended to convey ranges that characterize levels of credit quality as represented by the rating categories. Obviously, strengths evidenced in one financial measure can offset, or balance, relative weakness in another (see Tables 4 and 5).

Corporate Ratings Criteria—Ratings and Ratios: Ratio Medians; Ratio Guidelines

Table 4

U.S. Industrials—Manufacturing, Service and Transportation Companies

Funds from Operations/Total Debt Guidelines (%)

Company business risk profile	—Rating category—				
	AAA	AA	A	BBB	BB
Well above average business position	80	60	40	25	10
Above average	150	80	50	30	15
Average	—	105	60	35	20
Below average	—	—	85	40	25
Well below average	—	—	—	65	45

Total Debt/Capitalization Guidelines (%)

Company business risk profile	—Rating category—				
	AAA	AA	A	BBB	BB
Well above average business position	30	40	50	60	70
Above average	20	25	40	50	60
Average	—	15	30	40	55
Below average	—	—	25	35	45
Well below average	—	—	—	25	35

Table 5

U.S. Utilities

Funds From Operations/Interest (x)

Company business profile	—Rating Category—			
	AA	A	BBB	BB
1	2.5-3	1.5-2.5	1-1.5	—
2	3-4	2-3	1-2	—
3	3.5-4.5	2.5-3.5	1.5-2.5	1-1.5
4	4.2-5	3.5-4.2	2.5-3.5	1.5-2.5
5	4.5-5.5	3.8-4.5	2.8-3.8	1.8-2.8
6	5.2-6	4.2-5.2	3-4.2	2-3
7	6.5-8	4.5-6.5	3.2-4.5	2.2-3.2
8	7.5-10	5.5-7.5	3.5-5.5	2.5-3.5
9	—	7-10	4-7	2.8-4
10	—	8-11	5-8	3-5

Funds From Operations/Total Debt (%)

1	15-20	10-15	5-10	—
2	20-25	12-20	8-12	—
3	25-30	15-25	10-15	5-10
4	28-35	20-28	12-20	8-12
5	30-40	22-30	15-22	10-15
6	35-45	28-35	18-28	12-18

Corporate Ratings Criteria—Ratings and Ratios: Ratio Medians; Ratio Guidelines

Table 5

U.S. Utilities (cont'd)				
7	45-55	30-45	20-30	15-20
8	55-70	40-55	25-40	15-25
9	—	45-65	30-45	20-30
10	—	55-70	40-55	25-40
<i>Total Debt/Total Capital (%)</i>				
1	48-55	55-60	60-70	—
2	45-52	52-58	58-68	—
3	42-50	50-55	55-65	65-70
4	38-45	45-52	52-62	62-68
5	35-42	42-50	50-60	60-65
6	32-40	40-48	48-58	58-62
7	30-38	38-45	45-55	55-60
8	25-35	35-42	42-52	52-58
9	—	32-40	40-50	50-55
10	—	25-35	35-48	48-52

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National Fuel Gas Distribution Corporation
 Capital Structure Based upon Total Capital for
 the Proxy Group of Four Gas Distribution Companies,
 the Proxy Group of Nine Value Line Gas Distribution Companies
 and OCA Witness Parcels Group of Value Line Gas Distribution Companies
 At June 30, 2006

	Capital Structure Ratios at June 30, 2006
<u>AGI Resources, Inc.</u>	
Long-Term Debt	44.18 %
Short-Term Debt	12.32
Total Debt	56.50
Preferred Stock	0.92
Common Equity	42.58
Total Equity	43.50
Total Capital	100.00 %
<u>Atmos Energy Corporation</u>	
Long-Term Debt	52.68 %
Short-Term Debt	7.17
Total Debt	59.85
Preferred Stock	0.00
Common Equity	40.15
Total Equity	40.15
Total Capital	100.00 %
<u>Cascade Natural Gas Corporation</u>	
Long-Term Debt	57.51 %
Short-Term Debt	0.00
Total Debt	57.51
Preferred Stock	0.00
Common Equity	42.49
Total Equity	42.49
Total Capital	100.00 %
<u>Energen Corporation</u>	
Long-Term Debt	38.86 %
Short-Term Debt	3.01
Total Debt	41.87
Preferred Stock	0.00
Common Equity	58.13
Total Equity	58.13
Total Capital	100.00 %
<u>KeySpan Corporation</u>	
Long-Term Debt	45.07 %
Short-Term Debt	2.18
Total Debt	47.25
Preferred Stock	0.18
Common Equity	52.57
Total Equity	52.75
Total Capital	100.00 %
<u>The Laclede Group, Inc.</u>	
Long-Term Debt	42.70 %
Short-Term Debt	13.30
Total Debt	56.00
Preferred Stock	0.08
Common Equity	43.92
Total Equity	44.00
Total Capital	100.00 %
<u>New Jersey Resources Corp.</u>	
Long-Term Debt	31.03 %
Short-Term Debt	14.15
Total Debt	45.18
Preferred Stock	0.00
Common Equity	54.82
Total Equity	54.82
Total Capital	100.00 %
<u>NICOR Inc.</u>	
Long-Term Debt	38.61 %
Short-Term Debt	0.00
Total Debt	38.61
Preferred Stock	0.00
Common Equity	61.39
Total Equity	61.39
Total Capital	100.00 %

National Fuel Gas Distribution Corporation
 Capital Structure Based upon Total Capital for
 the Proxy Group of Four Gas Distribution Companies,
 the Proxy Group of Nine Value Line Gas Distribution Companies
 and OCA Witness Parcel's Group of Value Line fifteen Gas Distribution Companies
 At June 30, 2006

	Capital Structure Ratios at June 30, 2006
<u>Northwest Natural Gas Company</u>	
Long-Term Debt	43.89 %
Short-Term Debt	4.70
Total Debt	48.59
Preferred Stock	0.00
Common Equity	51.41
Total Equity	51.41
Total Capital	100.00 %
<u>Peoples Energy Corporation</u>	
Long-Term Debt	47.14 %
Short-Term Debt	9.04
Total Debt	56.18
Preferred Stock	0.00
Common Equity	43.82
Total Equity	43.82
Total Capital	100.00 %
<u>Piedmont Natural Gas Co., Inc.</u>	
Long-Term Debt	45.10 %
Short-Term Debt	5.60
Total Debt	50.70
Preferred Stock	0.00
Common Equity	49.30
Total Equity	49.30
Total Capital	100.00 %
<u>South Jersey Industries, Inc.</u>	
Long-Term Debt	41.21 %
Short-Term Debt	13.14
Total Debt	54.35
Preferred Stock	0.05
Common Equity	45.60
Total Equity	45.65
Total Capital	100.00 %
<u>Southwest Gas Corporation</u>	
Long-Term Debt	62.25 %
Short-Term Debt	0.00
Total Debt	62.25
Preferred Stock	0.00
Common Equity	37.75
Total Equity	37.75
Total Capital	100.00 %
<u>UGI Corporation</u>	
Long-Term Debt	53.93 %
Short-Term Debt	3.99
Total Debt	57.92
Preferred Stock	6.31
Common Equity	35.77
Total Equity	42.08
Total Capital	100.00 %
<u>WGL Holdings, Inc.</u>	
Long-Term Debt	37.43 %
Short-Term Debt	5.29
Total Debt	42.72
Preferred Stock	1.65
Common Equity	55.63
Total Equity	57.28
Total Capital	100.00 %

National Fuel Gas Distribution Corporation
 Capital Structure Based upon Total Capital for
 the Proxy Group of Four Gas Distribution Companies,
 the Proxy Group of Nine Value Line Gas Distribution Companies
 and OCA Witness Parcell's Group of Value Line Fifteen Gas Distribution Companies
 At June 30, 2006

	Capital Structure Ratios at June 30, 2006
<u>Mr. Parcell's Proxy Group of Value Line Gas Distribution Companies</u>	
Long-Term Debt	45.44 %
Short-Term Debt	6.26
Total Debt	51.70
Preferred Stock	0.61
Common Equity	47.69
Total Equity	48.30
Total Capital	100.00 %

<u>Proxy Group of Four Gas Distribution Companies</u>	
Long-Term Debt	46.28 %
Short-Term Debt	2.57
Total Debt	48.85
Preferred Stock	0.00
Common Equity	51.15
Total Equity	51.15
Total Capital	100.00 %

<u>Proxy Group of Nine Value Line Gas Distribution Companies</u>	
Long-Term Debt	44.01 %
Short-Term Debt	6.58
Total Debt	50.59
Preferred Stock	0.19
Common Equity	49.22
Total Equity	49.41
Total Capital	100.00 %

<u>Average of the Proxy Groups of Four and Nine Value line Gas Distribution Companies</u>	
Long-Term Debt	45.14 %
Short-Term Debt	4.58
Total Debt	49.72
Preferred Stock	0.10
Common Equity	50.18
Total Equity	50.28
Total Capital	100.00 %

<u>Average of Mr. Parcell's Proxy Group of Value Line, Four and Nine Value line Gas Distribution Companies</u>	
Long-Term Debt	45.24 %
Short-Term Debt	5.14
Total Debt	50.38
Preferred Stock	0.27
Common Equity	49.35
Total Equity	49.62
Total Capital	100.00 %

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Data Base
 Company Annual Forms 10Q

National Fuel Gas Distribution Corporation
Qualitative Assessments of Standard & Poor's Business Profile Score

<u>S&P Business Profile Score (1)</u>	<u>S&P's Qualitative Assessment</u>
1	Excellent (2)
2	Excellent (3)
3	Strong (4)
4	Strong (5)
5	Satisfactory (6)
6	Satisfactory (7)
7	Weak (8)
8	Weak (9)
9	Vulnerable (10)
10	Vulnerable (4)

- Notes:
- (1) From page 14 of Schedule 2 of Exhibit No. 400.
 - (2) From S&P Ratings Direct Summary: Northwest Natural Gas Co., June 21, 2006.
 - (3) From S&P Ratings Direct Summary: Cascade Natural Gas Corp., July 5, 2006.
 - (4) From S&P Ratings Direct Summary: The Laclede Group, Inc., August 30, 2006.
 - (5) From S&P Ratings Direct Summary: Atmos Energy Corp., June 9, 2006.
 - (6) From S&P Ratings Direct Summary: Peoples Energy Corp., June 16, 2006.
 - (7) From S&P Ratings Direct Summary: Northwestern Corp., July 25, 2006.
 - (8) From S&P Ratings Direct Summary: Allegheny Energy Inc., August 25, 2006.
 - (9) From S&P Ratings Direct Summary: Otter Tail Corp., July 17, 2006.
 - (10) From S&P Ratings Direct Summary: Orion Power Holdings Inc., May 19, 2006.

Source of Information: Standard & Poor's Ratings Direct Website:
www.ratingsdirect.com

National Fuel Gas Distribution Corporation
 Standard & Poor's Assigned Business Profiles and Descriptions for National Fuel Gas Company
 OCA Witness Parcel's Value Line Natural Gas Distribution Companies, the Proxy Group of Four Gas Distribution Companies, and
 the Proxy Group of Nine Value Line Natural Gas Distribution Companies and Their Regulated Operating Subsidiaries

	Standard & Poor's Assigned Business Profile	Standard & Poor's Description of Business Profile	Standard & Poor's Assigned Business Profile	Standard & Poor's Description of Business Profile
<u>National Fuel Gas Company</u> National Fuel Gas Distribution Corporation	<u>7.0</u>	<u>NA</u>	<u>NA</u>	<u>Strong (1)</u>
<u>OCA Witness Parcel's Value Line Natural Gas Distribution Companies</u>				
AGL Resources, Inc. Atlanta Gas Light Company Pivotal Utility Holding	4.0	Strong (2)	2.0 4.0	NA NA
Average			3.0	
Atmos Energy Corporation	4.0	Strong (3)	4.0	Strong (3)
Cascade Natural Gas Corp. Regulated Gas Distribution Business	2.0	Excellent (4)	2.0	Excellent (4)
Energyn Corporation Alabama Gas Corporation	7.0	NA	2.0	Excellent (5)
KeySpan Corporation Boston Gas Company Colonial Gas Company Keyspan Energy Delivery - Long Island Keyspan Energy Delivery - New York	4.0	Strong (6)	2.0 2.0 1.0 1.0	Excellent (7) Excellent (8) Excellent (9) Excellent (10)
Average			1.5	
The Laclede Gas Group, Inc. Laclede Gas Company	3.0	Strong (11)	3.0	Strong (12)
New Jersey Resources Corp. New Jersey Natural Gas Company	NA	NA	2.0	Excellent (13)
NICOR Inc. NICOR Gas Company (I)	3.0	Strong (14)	2.0	Excellent (15)
Northwest Natural Gas Co.	1.0	Excellent (16)	1.0	Excellent (16)
Peoples Energy Corp. North Shore Gas Company Peoples Gas Light & Coke Company	5.0	Satisfactory (17)	3.0 3.0	Strong (18) Strong (19)
Average			3.0	
Piedmont Natural Gas Co., Inc.	2.0	NA	2.0	NA
South Jersey Industries South Jersey Gas Company	NA		3.0	Strong (20)
Southwest Gas Corporation	3.0		3.0	NA
UGI Corporation UGI Utilities, Inc.	NA		NA	
WGL Holdings Inc. Washington Gas Light Company	3.0	Strong (21)	2.0	Strong (22)
<u>Average - OCA Witness Parcel's Value Line Natural Gas Distribution Companies</u>	<u>3.4</u>		<u>2.4</u>	
<u>Average - The Proxy Group of Four Gas Distribution Companies</u>	<u>2.0</u>		<u>1.8</u>	
<u>Average - The Proxy Group of Nine Value Line Gas Distribution Companies</u>	<u>2.9</u>		<u>2.3</u>	

- Notes: (1) From Standard & Poor's Research: Summary: National Fuel Gas Company, July 12, 2006.
 (2) From Standard & Poor's Research: Summary: AGL Resources Inc., August 4, 2006.
 (3) From Standard & Poor's Research: Summary: Atmos Energy Corp., June 9, 2006.
 (4) From Standard & Poor's Research: Summary: Cascade Natural Gas Corp., July 5, 2006.
 (5) From Standard & Poor's Research: Summary: Alabama Gas Corp., May 23, 2006.
 (6) From Standard & Poor's Research: Summary: KeySpan Corp., August 7, 2006.
 (7) From Standard & Poor's Research: Summary: Boston Gas Co., December 22, 2005.
 (8) From Standard & Poor's Research: Summary: Colonial Gas Co., April 28, 2006.
 (9) From Standard & Poor's Research: Summary: KeySpan Energy Delivery Long Island, April 27, 2006.
 (10) From Standard & Poor's Research: Summary: KeySpan Energy Delivery New York, April 27, 2006.
 (11) From Standard & Poor's Research: Summary: Laclede Group Inc. (The), August 30, 2006.
 (12) From Standard & Poor's Research: Summary: Laclede Gas Co., August 30, 2006.
 (13) From Standard & Poor's Research: Research Update: New Jersey Natural Gas Co., March 3, 2006.
 (14) From Standard & Poor's Research: Summary: NICOR Inc., July 19, 2006.
 (15) From Standard & Poor's Research: Summary: NICOR Gas Co., July 19, 2006.
 (16) From Standard & Poor's Research: Summary: Northwest Natural Gas Co., June 21, 2006.
 (17) From Standard & Poor's Research: Summary: Peoples Energy Corp., June 16, 2006.
 (18) From Standard & Poor's Research: Summary: North Shore Gas Co., June 15, 2006.
 (19) From Standard & Poor's Research: Summary: Peoples Gas Light & Coke Co. (The), June 16, 2006.
 (20) From Standard & Poor's Research: Summary: South Jersey Gas Co., March 3, 2006.
 (21) From Standard & Poor's Research: Summary: WGL Holdings, Inc., August 25, 2006.
 (22) From Standard & Poor's Research: Summary: Washington Gas Light Co., August 25, 2006.

National Fuel Gas Distribution Corporation
 Standard & Poor's Bond Ratings, Credit Ratings and Business Profiles for Holding Companies
 with Business Profiles of "7" and their Operating Subsidiary Companies

	August 2006 Standard & Poor's						Standard & Poor's Business Profile (2)	
	Bond Rating		Numerical Weighting (1)		Credit Rating		Numerical Weighting (1)	
<u>Allegheny Energy Inc.</u>	BB-		13.0		BB+		11.0	7.0
Monongahela Power	BBB-		10.0		BB+		11.0	5.0
Potomac Edison	BBB-		10.0		BB+		11.0	3.0
West Penn Power	BB+		11.0		BB+		11.0	3.0
Average	BBB-		10.0		BB+		11.0	4.0
<u>Constellation Energy Group</u>	BBB		9.0		BBB+		8.0	7.0
Baltimore Gas & Electric Co.	BBB+		8.0		BBB+		8.0	3.0
<u> Dominion Resources, Inc.</u>	BBB		9.0		BBB		9.0	7.0
Consolidated Natural Gas	BBB		9.0		BBB		9.0	6.0
Virginia Electric Power Co.	BBB		9.0		BBB		9.0	5.0
Average	BBB		9.0		BBB		9.0	5.5
<u>Energen Corporation</u>	BBB+		8.0		BBB+		8.0	7.0
Alabama Gas Corporation	BBB+		8.0		BBB+		8.0	2.0
<u>Exelon Corporation</u>	BBB+		8.0		BBB+		8.0	7.0
Commonwealth Edison Co.	BBB		9.0		BBB+		8.0	4.0
PECO Energy Co.	A-		7.0		BBB+		8.0	4.0
Average	BBB+		8.0		BBB+		8.0	4.0
<u>Great Plains Energy</u>	BBB-		10.0		BBB		9.0	7.0
Kansas City Power & Light	BBB		9.0		BBB		9.0	6.0
<u>Oneok, Inc.</u>	BBB+		8.0		BBB+		8.0	7.0
Kansas Gas Service	NR		--		NR		--	--
Oklahoma Natural Gas Co.	NR		--		NR		--	--
Texas Gas Service Co.	NR		--		NR		--	--
<u>Public Service Enterprise Group</u>	BBB-		10.0		BBB		9.0	7.0
Public Service Electric & Gas	A-		7.0		A-		7.0	3.0
<u>PPL Corporation</u>	NR		--		BBB		9.0	7.0
PPL Electric Utilities Corp.	A-		7.0		A-		7.0	3.0
<u>Sempra Energy</u>	BBB+		8.0		BBB+		8.0	7.0
San Diego Gas & Elec. Co.	A+		5.0		A		6.0	5.0
Southern Calif. Gas Co.	A+		5.0		A		6.0	1.0
Average	A+		5.0		A		6.0	3.0
<u>TXU Corporation</u>	BB+		11.0		BBB-		10.0	7.0
TXU Electric Delivery Co.	BBB-		10.0		BBB+		10.0	2.0
Holding Company Average	BBB		9.4		BBB		8.8	7.0
Subsidiary Average	BBB+		8.1		BBB+		8.3	3.8
Investment Grade (Bonds)								
Holding Company Average (4)	BBB		8.8		BBB		8.4 (4)	7.0 (4)
Investment Grade (Bonds of Holding Company) Subsidiary Average (3)	BBB+		7.7		BBB+		7.8	3.8

- Notes: (1) From page 2 of this Schedule.
 (2) Standard & Poor's Issuer Ranking: U.S. Utility And Power Companies, Strongest To Weakest, Sept. 8, 2006
 (3) Does not include Monongahela Power, Potomac Edison, and West Penn Power or TXU Electric Delivery Co. because Allegheny Energy Inc.'s and TXU Corp.'s bond ratings are below investment grade
 (4) Does not include PPL Corp. as the holding company does not have bonds which are rated by Standard & Poor's.

Source of Information: Standard & Poor's Ratings Direct website: www.ratingsdirect.com
 Standard & Poor's Issuer Ranking: U.S. Utility And Power Companies, Strongest To Weakest, Sept. 8, 2006

National Fuel Gas Distribution Corporation
Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

<u>Moody's Bond Rating</u>	<u>Numerical Bond Weighting</u>	<u>Standard & Poor's Bond Rating</u>
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-

National Fuel Gas Distribution Corporation
Authorized Returns on Common Equity and
Common Equity Ratios for Gas Distribution Companies
for the period January 2004 through June 2006

Company	Date	Jurisdiction	1	2	3	4	5	6
			Authorized Return on Common Equity	Authorized Common Equity Ratio			Moody's A Rated Public Utility Bond Yields (7)	Spread between Authorized Return on Common Equity and Moody's A Rated Public Utility Bond Yields (8)
Madison Gas and Electric	01/13/04	WI	12.00 %	55.91 %			6.27 %	5.73 %
Public Service Co. of New Mexico	01/13/04	NM	10.25 (1)	47.77			6.27	3.98
City Gas Co. of Florida	02/08/04	FL	11.25	36.77 (2, 3)			6.15	5.10
Southwest Gas Corporation	03/16/04	CA	10.90	42.00			6.15	4.75
Intertate Power & Light	04/05/04	MN	11.00	47.15			5.97	5.03
TXU-Gas	05/25/04	TX	10.00	49.80			6.35	3.95
Southern Indiana Gas & Electric	06/30/04	IN	10.50 (1)	44.00 (2)			6.62	3.88
South Jersey Gas	07/08/04	NJ	10.00 (1)	48.00			6.46	3.54
Cerespoint Energy Arks	07/22/04	LA	10.25 (1)	45.80 (4)			6.46	3.70
Southern Gas, Southern Division	08/28/04	NV	10.50	40.00			6.27	4.23
Southern Gas, Northern Division	08/28/04	NV	10.50	40.00			6.27	4.23
Avista Corporation	09/09/04	ID	10.40	42.59			6.14	4.26
Missouri Gas Energy	09/21/04	MO	10.50	29.99			6.14	4.36
Consolidated Edison of New York	09/27/04	NY	10.30 (1)	48.00			6.14	4.16
Washington Gas	09/27/04	VA	10.50 (1)	50.98			6.14	4.36
Chattanooga Gas	10/20/04	TN	10.20	35.50			5.98	4.22
Indiana Gas	11/30/04	IN	10.80 (1)	50.06			5.94	4.68
Yankee Gas Service	12/08/04	CT	9.90 (1)	47.90			5.97	3.93
Wisconsin Public Service	12/21/04	WI	11.50	57.35			5.97	5.53
Madison Gas and Electric	12/22/04	WI	11.50	57.84			5.97	5.53
Cerespoint Energy Arks	12/28/04	OK	10.25 (1)	49.88			5.97	4.28
Puget Sound Energy	02/18/05	WA	10.30	43.00			5.78	4.52
SCJCO Energy Gas	03/28/05	MI	11.00 (1)	--			5.61	5.39
Western Energy Delivery of Ohio	04/13/05	OH	10.80	48.10 (5)			5.83	4.77
Michigan Consolidated Gas	04/29/05	MI	11.00	39.31 (2, 3)			5.83	5.17
AmerenIP - Formerly Illinois Power	05/17/05	IL	10.00 (1)	53.09			5.84	4.36
Cerespoint Energy Minnegasco	06/08/05	MN	10.18	50.27			5.53	4.65
Atlanta Gas Light	08/10/05	GA	10.90 (1)	-- (6)			5.53	5.37
Exergy Gas Light	07/08/05	LA	10.50 (1)	47.52			5.40	5.10
Wisconsin Power and Light	07/19/05	WI	11.50	61.75			5.40	6.10
Northern States Power	08/11/05	MN	10.40 (1)	50.24 (3)			5.51	4.88
Cerespoint Energy Arkansas Gas	08/18/05	AR	9.45	31.80 (2)			5.50	3.95
Northern Illinois Gas - New Moor Gas	09/30/05	IL	10.51	56.37			5.50	5.01
Oklahoma Natural Gas	10/04/05	OK	9.90 (1)	48.78			5.52	4.38
Intertate Power & Light	10/14/05	IA	10.40 (1)	48.35 (3)			5.52	4.88
South Carolina Electric & Gas	10/31/05	SC	10.25 (1)	50.75			5.52	4.73
Arkansas Western Gas	11/02/05	AR	9.70	33.03 (2)			5.79	3.91
Bay State Gas	11/30/05	MA	10.00	53.95			5.79	4.21
Arkansas Oklahoma Gas	12/09/05	AR	9.70	41.04 (2, 5)			5.88	3.82
Madison Gas and Electric	12/12/05	WI	11.00	56.65			5.88	5.12
Pacific Gas and Electric	12/16/05	CA	11.35	52.00			5.88	5.47
San Diego Gas & Electric	12/16/05	CA	10.70	49.00			5.88	4.82
Baltimore Gas & Electric	12/21/05	MD	11.00	48.40			5.88	5.12
Avista Corporation	12/21/05	WA	10.40 (1)	40.00			5.88	4.52
Wisconsin Public Service	12/22/05	WI	11.00	59.73			5.88	5.12
Unicom Light, Heat & Power	12/22/05	KY	10.20	54.45			5.88	4.32
Southern Connecticut Gas	12/28/05	CT	10.00 (1)	51.29			5.88	4.12
Northern States Power	01/05/06	WI	11.00	53.68			5.80	5.20
Wisconsin Electric Power	01/25/06	WI	11.20	56.24			5.80	5.40
Wisconsin Gas	01/25/06	WI	11.20	50.20			5.80	5.40
Public Service of Colorado	02/03/06	CO	10.50 (1)	55.49			5.75	4.75
Southwest Gas	02/23/06	AZ	9.50	40.00 (4)			5.75	3.75
Aquila	03/01/06	IA	10.40 (1) (5)	51.39			5.82	4.58
Stan's Pacific Power	04/26/06	NV	10.60	40.78			5.98	4.62
LA Gas Service/Trans LA Gas	05/25/06	LA	10.40 (1)	48.00 (4)			6.29	4.11
Average			10.54 %	47.71 %			5.90 %	4.83 %
Average of Litigated Cases			10.88 %	47.10 %				
Prospective Yield on A Rated Public Utility Bonds (9)							6.40 %	
Average Spread between Authorized Returns on Common Equity and Moody's A Rated Public Utility Bond Yields							4.83	
Regisly Check Indicated Common Equity Cost Rate							11.03 %	

- Notes: (1) Order followed stipulation or settlement by the parties. Decision particulars not necessarily precedent-setting or specifically adopted by the regulatory body.
- (2) Capital structure includes cost-free items or tax credit balances at the overall rate of return.
- (3) Interim rates implemented prior to issuance of final order.
- (4) Hypothetical capital structure utilized.
- (5) Estimated
- (6) Revised
- (7) Average yield on Moody's A rate public utility bonds for the month prior to the decision date.
- (8) Column 3 - Column 5.
- (9) From page 1 of Schedule 12 of Exhibit No. 400.

Source of Information: Major Rate Case Decisions - January 2004 - December 2005
Regulatory Focus - Supplemental Studies, January 12, 2006
Regulatory Focus - Supplemental Studies, July 6, 2006
Published by Regulatory Research Associates, Inc., An SNL Energy Company
Margent Bond Record, June 2006, Vol. 73, No. 6

National Fuel Gas Distribution Corporation
Market-to-Book Ratios for
OCA Witness Parcell's Value Line Natural Gas Distribution Companies,
the Proxy Group of Four Gas Distribution Companies
and the Proxy Group of Nine Value Line Gas Distribution Companies

Company	1	2	3	4	5
Company	Common Stock Shares Outstanding at June 30, 2006 (1) (millions)	Book Value per Share at June 30, 2006 (2)	Total Common Equity at June 30, 2006 (1) (millions)	Closing Stock Market Price on August 14, 2006	Market-to-Book Ratio at August 14, 2006 (3)
<u>Witness Parcell's Proxy Group of Fifteen Value Line Gas Distribution Companies</u>					
AGL Resources, Inc.	77.483	\$ 20.301	\$ 1,573.000	\$ 35.610	175.4 %
Atmos Energy Corporation	81.538	20.414	1,664.556	28.240	138.3
Cascade Natural Gas Corporation	11.499	11.138	128.081	25.790	231.5
Energen Corporation	71.531	14.596	1,044.095	40.500	277.5
KeySpan Corporation	175.018	26.210	4,587.297	41.140	157.0
The Laclede Group, Inc.	21.172	19.218	406.886	32.770	170.5
New Jersey Resources Corporation	28.074	21.211	595.471	49.940	235.4
NICOR Inc.	44.440	18.630	827.900	43.120	231.5
Northwest Natural Gas Company	27.547	22.176	610.876	38.770	174.8
Peoples Energy Corporation	38.427	21.620	830.796	41.500	192.0
Piedmont Natural Gas Company, Inc.	75.348	11.971	902.021	25.930	216.6
South Jersey Industries, Inc.	29.177	14.524	423.774	29.290	201.7
Southwest Gas Corporation	40.698	20.142	819.742	33.540	166.5
UGI Corporation	105.414	10.831	1,141.700	24.270	224.1
WGL Holdings, Inc.	46.762	20.242	946.556	31.240	154.3
Average	<u>\$ 58.275</u>	<u>\$ 18.215</u>	<u>\$ 1,100.183</u>	<u>\$ 34.777</u>	<u>196.5 %</u>
<u>Average of the Proxy Group of Four Gas Distribution Companies</u>					
	<u>\$ 57.218</u>	<u>\$ 18.298</u>	<u>\$ 1,001.338</u>	<u>\$ 34.015</u>	<u>190.3 %</u>
<u>Average of the Proxy Group of Nine Value Line Gas Distribution Companies</u>					
	<u>\$ 41.645</u>	<u>\$ 18.513</u>	<u>\$ 768.127</u>	<u>\$ 35.256</u>	<u>193.9 %</u>
<u>Average of the Proxy Group of Four and Nine Value Line Gas Distribution Companies</u>					
	<u>\$ 49.432</u>	<u>\$ 18.406</u>	<u>\$ 884.733</u>	<u>\$ 34.636</u>	<u>192.1 %</u>
<u>Average - All Three Groups</u>					
	<u>\$ 52.379</u>	<u>\$ 18.342</u>	<u>\$ 956.549</u>	<u>\$ 34.683</u>	<u>193.6 %</u>

Notes: (1) As of June 2006, except Piedmont Natural Gas Co. which is at July 2006.
(2) Column 3 / Column 1.
(3) Column 4 / Column 2.

Source of Information: Standard & Poor's Compustat Services, Inc., PC Plus / Research Insight Data Base
Company Annual Forms 10-K

National Fuel Gas Distribution Corporation
Example of the Inadequacy of
DCF Return Rate Related to Book Value
When Market Value Exceeds Book Value

Line No.		Based on OTS Witness Deardorff's Proxy Groups of Nine Distribution Companies		Based on OCA Witness Parcell's Three Proxy Groups of Gas Distribution Companies	
		Market Value	Book Value	Market Value	Book Value
1.	Per Share	\$ 32.160 (1)	\$ 18.513 (2)	\$ 33.150 (3)	\$ 18.342 (4)
2.	DCF Cost Rate (1)	8.75% (5)	8.75% (5)	9.25% (6)	9.25% (6)
3.	Return in Dollars	\$ 2.814	\$ 1.620	\$ 3.066	\$ 1.697
4.	Dividends	\$ 1.373 (7)	\$ 1.373 (7)	\$ 1.369 (8)	\$ 1.369 (8)
5.	Growth in Dollars	\$ 1.441	\$ 0.247	\$ 1.697	\$ 0.328
6.	Return on Market Value	8.75%	5.04% (9)	9.25%	5.12% (10)
7.	Rate of Growth on Market Value	4.48% (11)	0.77% (12)	5.12% (13)	0.99% (14)

Notes:

- (1) Average market price of the proxy group of nine Value Line LDCS from page 2 of this Schedule.
- (2) Average book value of the proxy group of four gas distribution companies and the proxy group of nine Value Line gas distribution companies. From Schedule 7 of this Exhibit.
- (3) Average market price of the Value Line natural gas distribution group, the Hanley proxy group of four gas distribution companies and the Hanley proxy group of nine Value Line LDCS as derived from Exhibit ___(DCP-1), Schedule 6, page 1 of 4.
- (4) Average book value of Mr. Parcell's proxy group of Value Line natural gas distribution companies, the proxy group of four gas distribution companies and the proxy group of nine Value Line gas distribution companies. From Schedule 7 of this Exhibit.
- (5) Mr. Deardorff's DCF-based recommend common equity cost rate from OTS Statement No. 1, page 24, line 15.
- (6) Midpoint of Mr. Parcell's range of current DCF cost rates of equity for the proxy groups, from lines 9 and 10 on page 21 of Mr. Parcell's direct testimony. The 9.25% is comprised of the average adjusted dividend yield of the three groups of 4.13% ($4.13\% = (3.9\% \text{ (Value Line group)} + 4.1\% \text{ (Hanley group of 4 LDCs)} + 4.4\% \text{ (Hanley Value Line group)} / 3)$) and a growth rate of 5.12% ($5.12\% = 9.25\% - 4.13\%$).
- (7) Dividends per share based upon a 4.27% dividend yield. $\$1.373 = \$32.160 * 4.27\%$.
- (8) Dividends per share based upon a 4.13% dividend yield. $\$1.369 = \$33.150 * 4.13\%$.
- (9) $\$1.620 / \32.160
- (10) $\$1.697 / \33.150 .
- (11) Line 5 / Line 1
- (12) Actual rate of growth when DCF cost rate is applied to book value ($\$1.620$ possible earnings - $\$1.373$ dividends = $\$0.247$ for growth / $\$32.160$ market value = 0.77%).
- (13) Line 5 / Line 1
- (14) Actual rate of growth when DCF cost rate is applied to book value ($\$1.697$ possible earnings - $\$1.369$ dividends = $\$0.328$ for growth / $\$33.150$ market value = 0.99%).

National Fuel Gas Distribution Corporation
Average 52 Week Prices Ended August 18, 2006
for the Proxy Group of Nine Value Line Gas Distribution Companies

	1	2	3	4	5
	52-Week High Price ending August 18, 2006 (1)	52-Week Low Price ending August 18, 2006 (1)	Average of 52- Week High and Low Price ending August 18, 2006	Spot Price - August 18, 2006 (1)	Average Price (2)
<u>Proxy Group of Four Gas Distribution Companies</u>					
Cascade Natural Gas Corporation	\$ 26.300	\$ 18.950	\$ 22.625	\$ 25.690	\$ 24.158
NICOR Inc.	44.400	37.420	40.910	43.490	42.200
Northwest Natural Gas Company	38.430	32.830	35.630	38.060	36.845
Piedmont Natural Gas Co., Inc.	26.170	21.260	23.715	25.900	24.808
Average	<u>\$ 33.825</u>	<u>\$ 27.615</u>	<u>\$ 30.720</u>	<u>\$ 33.285</u>	<u>\$ 32.003</u>
<u>Proxy Group of Nine Value Line Gas Distribution Companies</u>					
Atmos Energy Corporation	\$ 29.740	\$ 25.000	\$ 27.370	\$ 28.940	\$ 28.155
Cascade Natural Gas Corporation	26.300	18.950	22.625	25.690	24.158
The Laclede Group, Inc.	35.650	28.600	32.125	32.640	32.383
New Jersey Resources Corp.	51.390	40.680	46.035	48.900	47.468
NICOR Inc.	4.400	37.420	20.910	43.490	32.200
Northwest Natural Gas Company	38.430	32.830	35.630	38.060	36.845
Peoples Energy Corporation	43.870	34.340	39.105	41.690	40.398
Piedmont Natural Gas Co., Inc.	26.170	21.260	23.715	25.900	24.808
WGL Holdings, Inc.	33.490	27.040	30.265	30.650	30.458
Average	<u>\$ 32.160</u>	<u>\$ 29.569</u>	<u>\$ 30.864</u>	<u>\$ 35.107</u>	<u>\$ 32.986</u>
Average of both proxy groups	<u>\$ 32.993</u>	<u>\$ 28.592</u>	<u>\$ 30.792</u>	<u>\$ 34.196</u>	<u>\$ 32.495</u>

Notes: (1) From OTS Witness Deardorffs workpapers to OTS Exhibit No. 1, Schedule 4, pages 1 and 2.

(2) Average of Column 3 and Column 4.

National Fuel Gas Distribution Corporation
Range of OCA Witness Parcel's DCF Estimates for
the Value Line Natural Gas Distribution Companies

Value Line Natural Gas Distribution Companies	Range of DCF Estimates (1)		Standard & Poor's	
			Bond Rating	Numerical Weighting (2)
AGL Resources, Inc. (3)	8.6 %	12.2 %	A-	7.0
Atmos Energy Corporation (4)	6.9	10.5	BBB	9.0
Cascade Natural Gas Corporation	3.0	10.8	BBB+	8.0
Energen Corporation (5)	8.2	21.1	BBB+	8.0
KeySpan Corporation (6)	6.6	14.6	A+	5.0
The Laclede Group, Inc. (7)	6.3	9.1	A	6.0
New Jersey Resources Corporation (8)	8.3	11.0	AA-	4.0
NICOR Inc. (9)	4.9	8.6	AA	3.0
Northwest Natural Gas Company	6.8	9.9	AA-	4.0
Peoples Energy Corporation (10)	6.4	9.7	A-	7.0
Piedmont Natural Gas Company, Inc.	7.0	9.5	A	6.0
South Jersey Industries, Inc. (11)	8.4	12.3	A	6.0
Southwest Gas Corporation	3.5	8.3	BBB-	10.0
UGI Corporation	9.8	19.1	NR	--
WGL Holdings, Inc. (12)	7.5	8.5	AA-	4.0
Average - Value Line Natural Gas Distribution Companies	6.8 %	11.7 %	A+	6.2
Range of all DCF Estimates	3.0 %	21.1 %		

- Notes: (1) Derived from data shown on pages 2 and 3 of this Schedule.
(2) From page 2 of Schedule 5 of this Exhibit.
(3) Ratings are a composite of those of Atlanta Gas Light Co. and Pivotal Utility Holdings.
(4) Ratings are a composite of those of Atmos Energy Corp. and United Cities Gas Co.
(5) Ratings are those of Alabama Gas Corp..
(6) Ratings are a composite of those of Boston Gas Co., Colonial Gas Co., and Keyspan Energy Delivery Long Island..
(7) Ratings are those of Laclede Gas Co.
(8) Ratings are those of New Jersey Natural Gas Co.
(9) Ratings are those of NICOR Gas Co.
(10) Ratings are a composite of those of North Shore Gas Co. and The Peoples Gas Light & Coke Co.
(11) Ratings are those of South Jersey Gas Co.
(12) Ratings are those of Washington Gas Light Co.

Source of Information: Standard & Poor's Global Utilities Rating Service

National Fuel Gas Distribution Corporation
 Calculation of DCF Cost Rates for
 the Value Line Natural Gas Distribution Companies
 Based Upon Mr. Parcell's Growth Rate Estimates

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
<u>Value Line Natural Gas Distribution Companies</u>	DCF Cost Rate Using Hist. Ret. Growth (1)	DCF Cost Rate Using Prosp. Ret. Growth (1)	DCF Cost Rate Using Hist. Per Sh. Growth (1)	DCF Cost Rate Using Prosp. Per Sh. Growth (1)	DCF Cost Rate Using First Call EPS Growth (1)	DCF Cost Rate Using Average Growth (1)
AGL Resources, Inc.	10.0 %	9.4 %	12.2 %	9.6 %	8.6 %	9.9 %
Atmos Energy Corporation	6.9	8.2	10.4	9.4	10.5	9.1
Cascade Natural Gas Corporation	5.9	6.4	3.0	10.8	7.3	6.7
Energen Corporation	12.8	21.1	13.5	10.0	8.2	13.1
KeySpan Corporation	7.4	6.6	14.6	7.4	8.5	8.9
The Laclede Group, Inc.	6.3	9.1	6.8	8.8	8.3	7.9
New Jersey Resources Corporation	10.7	11.0	9.5	8.3	8.3	9.5
NICOR Inc.	8.6	7.7	4.9	7.3	7.5	7.2
Northwest Natural Gas Company	6.8	7.6	7.1	8.7	9.9	8.0
Peoples Energy Corporation	8.2	6.4	6.4	6.6	9.7	7.5
Piedmont Natural Gas Company, Inc.	7.0	7.7	9.5	9.3	8.0	8.3
South Jersey Industries, Inc.	8.4	9.8	12.3	9.6	9.3	9.9
Southwest Gas Corporation	5.1	8.3	3.5	7.3	5.7	5.9
UGI Corporation	11.7	10.7	19.1	9.8	11.0	12.4
WGL Holdings, Inc.	8.5	8.1	8.3	7.5	8.3	8.1
Average - Value Line Natural Gas Distribution Companies	<u>8.3 %</u>	<u>9.2 %</u>	<u>9.4 %</u>	<u>8.7 %</u>	<u>8.6 %</u>	<u>8.8 %</u>

Notes: (1) Calculated as the sum of the adjusted dividend yield in Columns 2 through 7 on page 3 of this Schedule and the relevant growth rate in Columns 2 through 7 on page 4 of this Schedule. For example, for AGL Resources, Inc., the DCF cost rate of 10.0% in Column 1 equals an adjusted dividend yield of 4.1% (from Column 2 on page 3 of this Schedule) plus a growth rate of 5.9% (from Column 2 on page 4 of this Schedule).

Southwest Gas Corporation
 Calculation of DCF Cost Rates for the Companies in
 the Value Line Natural Gas Distribution Companies
 Based Upon Mr. Parcell's Growth Rate Estimates

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
	Dividend Yield (1)	Adjusted Div. Yld. Using Hist. Ret. Growth (2)	Adjusted Div. Yld. Using Prosp. Ret. Growth (2)	Adjusted Div. Yld. Using Hist. Per Sh. Growth (2)	Adjusted Div. Yld. Using Prosp. Per Sh. Growth (2)	Adjusted Div. Yld. Using First Call EPS Growth (2)	Adjusted Div. Yld. Using Average Growth (2)
<u>Value Line Natural Gas Distribution Companies</u>							
AGL Resources, Inc.	4.0 %	4.1 %	4.1 %	4.2 %	4.1 %	4.1 %	4.1 %
Atmos Energy Corporation	4.6	4.7	4.7	4.7	4.7	4.7	4.7
Cascade Natural Gas Corporation	4.2	4.2	4.2	4.2	4.3	4.3	4.3
Energen Corporation	1.2	1.3	1.3	1.3	1.3	1.2	1.3
KeySpan Corporation	4.6	4.7	4.6	4.8	4.7	4.7	4.7
The Laclede Group, Inc.	4.2	4.2	4.3	4.3	4.3	4.3	4.3
New Jersey Resources Corporation	3.2	3.3	3.3	3.3	3.3	3.3	3.3
NICOR Inc.	4.4	4.5	4.5	4.4	4.5	4.5	4.5
Northwest Natural Gas Company	3.8	3.9	3.9	3.9	3.9	3.9	3.9
Peoples Energy Corporation	5.6	5.7	5.6	5.6	5.6	5.7	5.7
Piedmont Natural Gas Company, Inc.	3.9	4.0	4.0	4.0	4.0	4.0	4.0
South Jersey Industries, Inc.	3.2	3.3	3.3	3.3	3.3	3.3	3.3
Southwest Gas Corporation	2.7	2.7	2.8	2.7	2.8	2.7	2.7
UGI Corporation	2.9	3.0	3.0	3.1	3.0	3.0	3.0
WGL Holdings, Inc.	4.7	4.8	4.8	4.8	4.8	4.8	4.8
Average - Value Line Natural Gas Distribution Companies	<u>3.8 %</u>	<u>3.9 %</u>	<u>3.9 %</u>	<u>3.9 %</u>	<u>3.9 %</u>	<u>3.9 %</u>	<u>3.9 %</u>

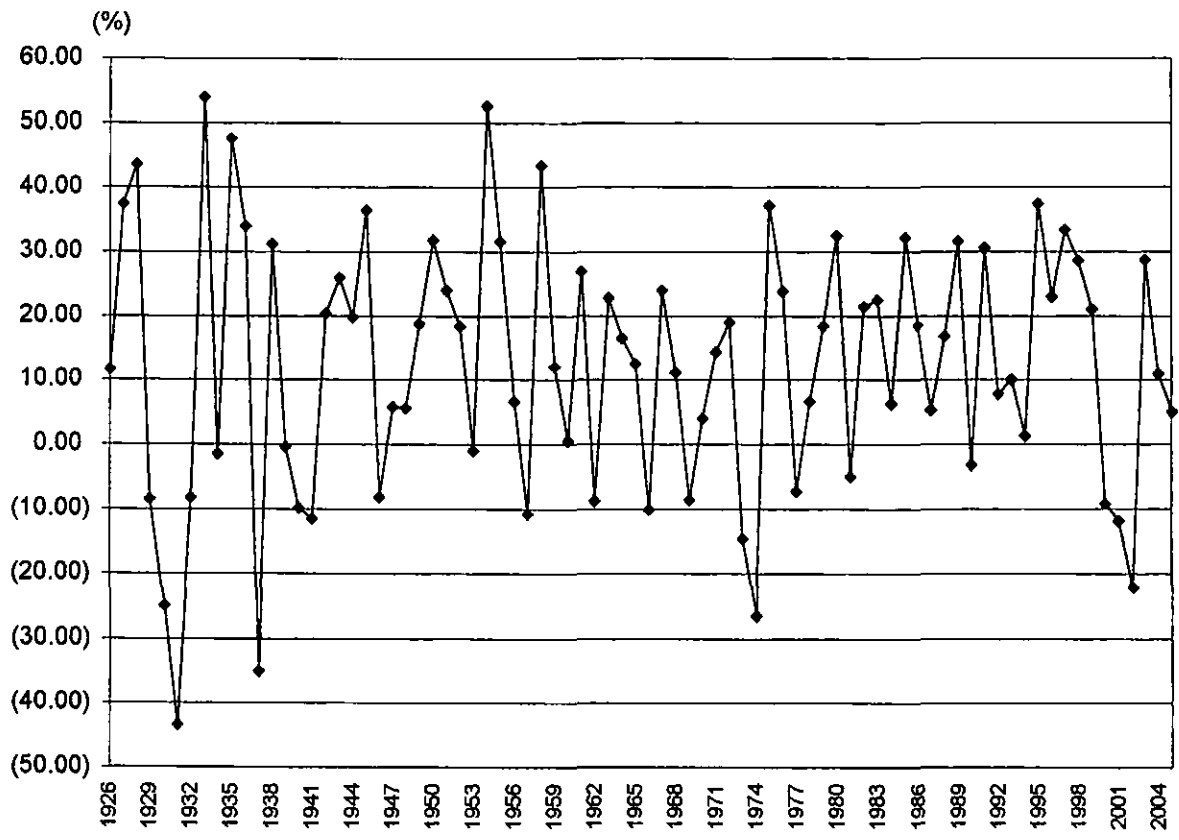
- Notes: (1) From Schedule DCP-6, page 1 of 4.
 (2) Calculated by multiplying the dividend yield in Column 1 by one plus one-half the relevant growth rate from page 4 of this Schedule. For example, the adjusted dividend yield in Column 2 for AGL Resources of 4.1% is equal to a dividend yield of 4.0% (Column 1) times one plus one-half the hist. ret. growth rate of 5.9% (4.1% = (4.0% * (1.0 + (0.5 % * 5.9%)))).

National Fuel Gas Distribution Corporation
Calculation of DCF Cost Rates for
the Value Line Natural Gas Distribution Companies
Based Upon Mr. Parcell's Growth Rate Estimates

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
<u>Value Line Natural Gas Distribution Companies</u>	<u>Dividend Yield</u> <u>(1)</u>	<u>Hist. Ret.</u> <u>Growth (2)</u>	<u>Prosp. Ret.</u> <u>Growth (2)</u>	<u>Hist. Per Sh.</u> <u>Growth (2)</u>	<u>Prosp. Per Sh.</u> <u>Growth (2)</u>	<u>First Call EPS</u> <u>Growth (2)</u>	<u>Average</u> <u>Growth (2)</u>
AGL Resources, Inc.	4.0 %	5.9 %	5.3 %	8.0 %	5.5 %	4.5 %	5.8 %
Atmos Energy Corporation	4.6	2.2	3.5	5.7	4.7	5.8	4.4
Cascade Natural Gas Corporation	4.2	1.7	2.2	(1.2)	6.5	3.0	2.4
Energen Corporation	1.2	11.5	19.8	12.2	8.7	7.0	11.8
KeySpan Corporation	4.6	2.7	2.0	9.8	2.7	3.8	4.2
The Laclede Group, Inc.	4.2	2.1	4.8	2.5	4.5	4.0	3.6
New Jersey Resources Corporation	3.2	7.4	7.7	6.2	5.0	5.0	6.2
NICOR Inc.	4.4	4.1	3.2	0.5	2.8	3.0	2.7
Northwest Natural Gas Company	3.8	2.9	3.7	3.2	4.8	6.0	4.1
Peoples Energy Corporation	5.6	2.5	0.8	0.8	1.0	4.0	1.8
Piedmont Natural Gas Company, Inc.	3.9	3.0	3.7	5.5	5.3	4.0	4.3
South Jersey Industries, Inc.	3.2	5.1	6.5	9.0	6.3	6.0	6.6
Southwest Gas Corporation	2.7	2.4	5.5	0.8	4.5	3.0	3.2
UGI Corporation	2.9	8.7	7.7	16.0	6.8	8.0	9.4
WGL Holdings, Inc.	4.7	3.7	3.3	3.5	2.7	3.5	3.3
<u>Average - Value Line Natural Gas Distribution Companies</u>	<u>3.8 %</u>	<u>4.4 %</u>	<u>5.3 %</u>	<u>5.5 %</u>	<u>4.8 %</u>	<u>4.7 %</u>	<u>4.9 %</u>

Notes: (1) From Schedule DCP-6, page 1 of 4.
(2) From Schedule DCP-6, page 4 of 4.

National Fuel Gas Distribution Corporation
 Large Company Stock Returns
 From 1926 to 2005

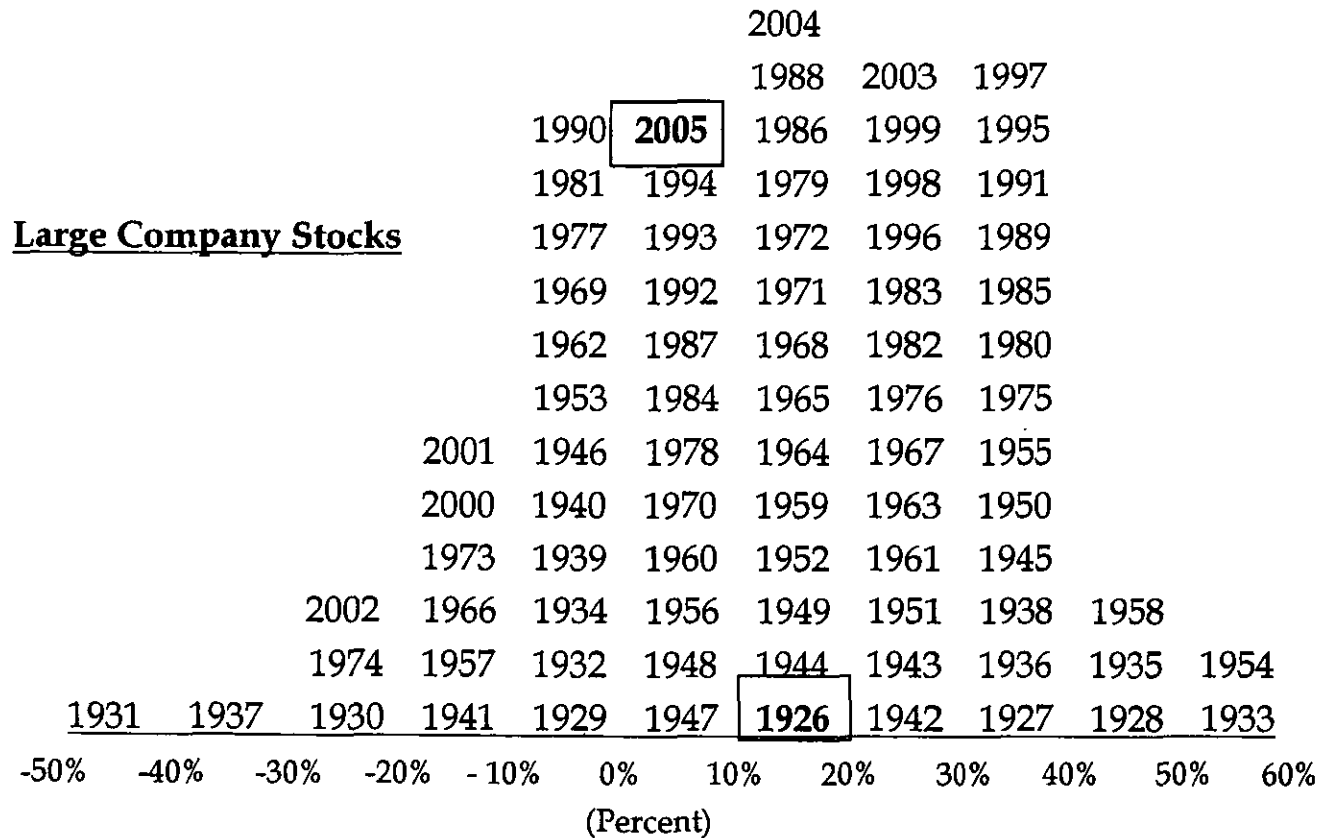


Source of Information:
Stocks, Bonds, Bills and Inflation Valuation Edition 2006 Yearbook,
 Ibbotson Associates, Chicago, IL

National Fuel Gas Distribution Corporation

Total Returns on Large Company Stocks

1926 to 2005



Arithmetic Mean:
$$r_A = \frac{\sum_{t=1}^n r_t}{n}$$

Source: Stocks, Bonds, Bills, and Inflation - Valuation Edition 2006 Yearbook, pp. 30-31, Ibbotson Associates, Chicago, IL

National Fuel Gas Distribution Corporation
 Market-to-Book Ratios, Earnings / Book Ratios and
 Inflation for Standard & Poor's Industrial Index and
 the Standard & Poor's 500 Composite Index
 from 1947 through 2005

Year	Market-to-Book Ratio (1)		Earnings/Book Ratio (2)		Inflation (4)	Earnings / Book Ratio - Net of Inflation	
	S&P Industrial Index (3)	S&P 500 Composite Index (3)	S&P Industrial Index (3)	S&P 500 Composite Index (3)			
1947	1.23 %	NA	13.0 %	NA	9.0 %	4.0 %	NA
1948	1.13	NA	17.3	NA	2.7	14.6	NA
1949	1.00	NA	16.3	NA	(1.8)	18.1	NA
1950	1.16	NA	18.3	NA	5.8	12.5	NA
1951	1.27	NA	14.4	NA	5.9	8.5	NA
1952	1.29	NA	12.7	NA	0.9	11.8	NA
1953	1.21	NA	12.7	NA	0.6	12.1	NA
1954	1.45	NA	13.5	NA	(0.5)	14.0	NA
1955	1.81	NA	16.0	NA	0.4	15.6	NA
1956	1.92	NA	13.7	NA	2.9	10.8	NA
1957	1.71	NA	12.5	NA	3.0	9.5	NA
1958	1.70	NA	9.8	NA	1.8	8.0	NA
1959	1.94	NA	11.2	NA	1.5	9.7	NA
1960	1.82	NA	10.3	NA	1.5	8.8	NA
1961	2.01	NA	9.8	NA	0.7	9.1	NA
1962	1.83	NA	10.9	NA	1.2	9.7	NA
1963	1.94	NA	11.4	NA	1.7	9.7	NA
1964	2.18	NA	12.3	NA	1.2	11.1	NA
1965	2.21	NA	13.2	NA	1.9	11.3	NA
1966	2.00	NA	13.2	NA	3.4	9.8	NA
1967	2.05	NA	12.1	NA	3.0	9.1	NA
1968	2.17	NA	12.6	NA	4.7	7.9	NA
1969	2.10	NA	12.1	NA	6.1	6.0	NA
1970	1.71	NA	10.4	NA	5.5	4.9	NA
1971	1.99	NA	11.2	NA	3.4	7.8	NA
1972	2.16	NA	12.0	NA	3.4	8.6	NA
1973	1.96	NA	14.6	NA	8.8	5.8	NA
1974	1.39	NA	14.8	NA	12.2	2.6	NA
1975	1.34	NA	12.3	NA	7.0	5.3	NA
1976	1.51	NA	14.5	NA	4.8	9.7	NA
1977	1.38	NA	14.6	NA	6.8	7.8	NA
1978	1.25	NA	15.3	NA	9.0	6.3	NA
1979	1.23	NA	17.2	NA	13.3	3.9	NA
1980	1.31	NA	15.6	NA	12.4	3.2	NA
1981	1.24	NA	14.9	NA	8.9	6.0	NA
1982	1.17	NA	11.3	NA	3.9	7.4	NA
1983	1.45	NA	12.2	NA	3.8	8.4	NA
1984	1.46	NA	14.6	NA	4.0	10.6	NA
1985	1.67	NA	12.2	NA	3.8	8.4	NA
1986	2.02	NA	11.5	NA	1.1	10.4	NA
1987	2.50	NA	15.7	NA	4.4	11.3	NA
1988	2.13	NA	18.0	NA	4.4	14.6	NA
1989	2.56	NA	18.5	NA	4.7	13.8	NA
1990	2.63	NA	16.3	NA	6.1	10.2	NA
1991	2.77	NA	10.8	NA	3.1	7.7	NA
1992	3.29	NA	13.0	NA	2.9	10.1	NA
1993	3.72	NA	15.7	NA	2.8	12.9	NA
1994	3.73	NA	23.0	NA	2.7	20.3	NA
1995	4.06	2.64	22.9	16.0 %	2.5	20.4	13.5 %
1996	4.79	2.99	24.8	16.8	3.3	21.5	13.5
1997	5.88	3.53	24.6	16.3	1.7	22.9	14.6
1998	7.13	4.16	21.3	14.5	1.6	19.7	12.9
1999	8.27	4.76	25.2	16.7	2.7	22.5	14.0
2000	7.51	4.51	23.9	15.6	3.4	20.5	12.2
2001	NA	3.50	NA	15.0	1.6	NA	13.4
2002	NA	2.93	NA	8.3	2.4	NA	5.9
2003	NA	2.78	NA	14.1	1.9	NA	12.2
2004	NA	3.12 (5)	NA	16.1	3.3	NA	12.8
2005	NA	3.35 (5)	NA	19.9	3.4	NA	16.5
Average	2.34 %	3.48 %	14.9 %	15.4 %	3.9 %	10.9 %	12.9 %

- Notes: (1) Market-to-Book Ratio equals average of the high and low market price for the year divided by the average book value.
 (2) Earnings/Book equals earnings per share for the year divided by the average book value.
 (3) On January 2, 2001 Standard & Poor's released Global Industry Classification Standard (GICS) price indexes for all Standard & Poor's U.S. indexes. As a result, all S&P indexes have been calculated with a common base of 100 at a start date of December 31, 1994. Also, the GICS industrial sector is not comparable to the former S&P Industrial Index and data for the former S&P Industrial Index has been discontinued.
 (4) As measured by the Consumer Price Index (CPI).
 (5) Ratios for 2004 are based upon estimated book values using the actual average price and the estimated book value calculated by adding the 2004 and 2005 earnings per share to the 2003 and 2004 book value per share and then subtracting the 2004 and 2005 dividends per share as provided by Standard & Poor's Security Price Index Record, 2006 Edition. Pp. 471 and 473 and 2005.

Source of Information: Standard & Poor's Security Price Index Record, 2000 Edition, p. 40
 Standard & Poor's Statistical Service, Current Statistics, August 2001, p. 29
 Standard & Poor's Statistical Service, Current Statistics, January 2001, p. 36
 Standard & Poor's Current Statistics, June 2006, p. 29.
 Standard & Poor's Security Price Index Record, 2006 Edition, pp. 1, 471 and 473
 Standard & Poor's Compustat Services, Inc. PC Plus Research Insight Data Base
 Ibbotson Associates, Stocks, Bonds, Bills and Inflation - Valuation Edition 2006 Yearbook, 2006

**REGULATORY FINANCE:
UTILITIES' COST OF CAPITAL**

Roger A. Morin, PhD

**in collaboration with
Lisa Todd Hillman**

**1994
PUBLIC UTILITIES REPORTS, INC.
Arlington, Virginia**

Regulatory Finance

where $E(K)$ = expected return, or cost of capital
 $E(R_F)$ = expected risk-free rate
 $E(\beta)$ = expected beta
 $E(R_M)$ = expected market return

The difficulty is that the CAPM model is a prospective model while most of the available capital market data required to match the three theoretical input variables (expected risk-free return, expected beta, and expected market return) are historical. None of the input variables exists as a separate identifiable entity. It is thus necessary in practice to employ different proxies, with different results obtained with each set of proxy variables. Each of the three required inputs to the CAPM is examined below.

Risk-free Rate

Theoretically, the yield on 90-day Treasury bills is virtually devoid of default risk and subject to a negligible amount of interest rate risk. But, as seen in the previous chapter, the T-bill rate fluctuates widely, leading to volatile and unreliable equity return estimates, and it does not match the equity investor's planning horizon. Equity investors generally have an investment horizon far in excess of 90 days. More importantly, short-term Treasury bill yields reflect the impact of factors different from those influencing long-term securities, such as common stock. For example, the premium for expected inflation absorbed into 90-day Treasury bills is likely to be far different than the inflationary premium absorbed into long-term securities yields. The yields on long-term Treasury bonds match more closely with common stock returns. For investors with a long time horizon, a long-term government bond is almost risk-free.

In their well-known corporate finance textbook, Brigham and Gapenski (1991) stated the following:³

Treasury bill rates are subject to more random disturbances than are Treasury bond rates. For example, bills are used by the Federal Reserve System to control the money supply, and bills are also used by foreign governments, firms, and individuals as a temporary safe-house for money. Thus, if the Fed decides to stimulate the economy, it drives down the bill rate, and the same thing happens if trouble erupts somewhere in the world and money flows into the United States seeking a temporary haven.

³ See Brigham and Gapenski (1991).

Chapter 12: Capital Asset Pricing Model

Harrington (1987) took an even more practical approach in estimating the risk-free rate. Unlike most theoretical textbooks, Harrington suggests looking at this from the point of view of a practitioner who has a real problem:

Because of the empirical evidence, the intercept is consistently higher than a Treasury security and the fact that a Treasury bill rate is heavily influenced by Federal Reserve activity and is thus not a free-market rate, many practitioners suggest the use of a long-term government rate or an AA industrial bond rate as a proxy for the risk-free rate Because U.S. Treasury bills are usually considered the closest available approximation to a risk-free investment, the discount rate on Treasury bills is often used as a risk-free rate. This creates some very serious problems, however, because the rate of Treasury bills like that on most short-term marketable instruments is quite volatile. One way to approach the problem of dealing with the risk premium factor is to use the long-term interest rate instead of the risk-free rate....The most widely used proxies, 30 or 90-day Treasury bill rates, are empirically inadequate and theoretically suspect.⁴

While the spot yield on long-term Treasury bonds provides a reasonable proxy for the risk-free rate, the CAPM specifically requires the expected spot yield. Market forecasts of rates on Treasury bonds are available in the form of interest rate futures contract yields, and can be employed as proxies for the expected yields on Treasury securities.

Over the last 50 years, the Treasury bill rate has approximately equaled the annual inflation rate, as demonstrated in Fama (1975) and Ibbotson Associates (1993). Refined techniques to forecast inflation based on the current shape of the yield curve could thus be employed to obtain the expected risk-free rate.⁵ Alternately, the consensus inflation forecast by economists over the requisite horizon could be employed to derive the risk-free rate estimate. However, none of these techniques is likely to provide superior estimates to that supplied by current yield data. The complexity and computational costs are likely to outweigh their marginal usefulness.

In practice, sensitivity analyses employing various input values for the risk-free rate can produce a reasonably good range of estimates of equity costs. For example, for a risk-free rate range of 7% to 8% and a market

⁴ See Harrington (1987).

⁵ See Ibbotson and Sinquefeld (1982) for a description of the methodology of forecasting future security yields based on yield curve analysis.

Frank Hanley

From: "Frank Hanley" <fhanley@ausinc.com>
To: <profmorin@msn.com>
Sent: Thursday, August 31, 2000 3:18 PM
Subject: ECAPM

Dr. Morin,

Quite some time ago I sent you e mail about the ECAPM. You replied that critics were wrong when they say that using the ECAPM with adjusted beta is a double counting. You said that you would provide me with some proof. Could you please send me something or point me to specific empirical support that use of adjusted beta in the ECAPM is not double counting ?

I know that you are a very busy man so I give you many thanks in advance for any time you take in responding to me.

Appreciatively,

Frank Hanley

Frank Hanley

From: "profmorin" <profmorin@email.msn.com>
To: <fhanley@ausinc.com>
Sent: Friday, September 01, 2000 11:51 AM
Attach: response to F.Hanley.doc
Subject: Re: ECAPM

Dear Frank:

I have attached a response to your concern. I also point out that the New York PSC has endorsed the Morin ECAPM following the massive generic cost of capital hearing of a few years ago. I have the exact cite if you need it.

— Original Message —

From: Frank Hanley
To: profmorin@msn.com
Sent: Thursday, August 31, 2000 4:18 PM
Subject: ECAPM

Dr. Morin,

Quite some time ago I sent you e mail about the ECAPM. You replied that critics were wrong when they say that using the ECAPM with adjusted beta is a double counting. You said that you would provide me with some proof. Could you please send me something or point me to specific empirical support that use of adjusted beta in the ECAPM is not double counting ?

I know that you are a very busy man so I give you many thanks in advance for any time you take in responding to me.

Appreciatively,

Frank Hanley

MORIN ECAPM

Some have argued that the Morin ECAPM constitutes a double beta adjustment. I do not share the view that the ECAPM is equivalent to a beta adjustment.

There are two distinct separate issues involved when implementing the CAPM. First, given the validity of the standard CAPM, what is the best proxy for expected beta? Second, and more fundamentally, does the standard form of the CAPM provide the best explanation of the risk-return relationship observed on capital markets?

i. Beta measurement

Unadjusted raw betas are inappropriate to use in a CAPM analysis. The raw unadjusted beta is not the appropriate measure of market risk to use. Current stock prices reflect expected risk, that is, expected beta, rather than historical risk or historical beta. Historical betas, whether raw or adjusted, are only surrogates for expected beta. The best of the two surrogates is adjusted beta a la Value Line, Merrill Lynch, and Bloomberg betas.

ii. Standard CAPM

There have been countless empirical tests of the CAPM to determine to what extent security returns and betas are related in the manner predicted by the CAPM. The results of the tests support the idea that beta is related to security returns, that the risk-return tradeoff is positive, and that the relationship is linear. The contradictory finding is that the risk-return tradeoff is not as steeply sloped as the predicted CAPM. That is, low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted. This is one of the most well-known results in finance. A CAPM-based estimate of cost of capital underestimates the return required from low-beta securities and overstates the return from high-beta securities, based on the empirical evidence. The empirical form of the CAPM refines the standard form of the CAPM to account for this phenomenon.

Thus, I do not share the view that the ECAPM is equivalent to a beta adjustment. For utility stocks with betas less than one, the CAPM understates the return. The ECAPM allows for the CAPM's inherent bias by ascribing a higher intercept and flatter slope to the CAPM. The ECAPM is a return (Y-axis, vertical axis) adjustment. It is not a beta risk (x-axis, horizontal) adjustment. The ECAPM is not an attempt to increase the beta estimate, which would be a horizontal x-axis adjustment. The ECAPM is a return adjustment rather than a risk adjustment.

There is a huge financial literature which supports both the use of the ECAPM and the use of adjusted betas. The empirical support for adjusted betas and for the ECAPM is summarized in Chapter 13 of my book, Regulatory Finance, Public Utility Reports Inc., Arlington, Va., 1994.

With few exceptions, the empirical studies support the finding that the implied intercept term exceeds the risk-free rate and the slope term is less than predicted by the CAPM.



U.S. Securities and Exchange Commission

Speech by SEC Staff: Analysts Conflicts of Interest: Taking Steps to Remove Bias

by

Lori Richards

*Director, Office of Compliance Inspections and Examinations
U.S. Securities and Exchange Commission*

Financial Women's Association

New York, New York
May 8, 2002

The SEC, as a matter of policy, disclaims responsibility for any private publication or statement by any of its employees. The views expressed herein are those of the author and do not necessarily reflect the views of the Commission or of the author's colleagues upon the staff of the Commission.

Good Evening. I'm so glad to be here with you tonight.

I'd like to thank all of you for coming today, especially those of you who heard I would be substituting for Chairman Pitt and who came anyway.

The bad news is that Chairman Pitt couldn't be here tonight. The good news is that we still have a lot of interesting things to talk about. I thought it would be worthwhile to talk to you about research analysts. At an Open Meeting this morning, the SEC approved rule changes proposed by the National Association of Securities Dealers, Inc. and the New York Stock Exchange, Inc. regarding analyst conflicts of interest. These rules reflect a dramatic change in the way analysts are regulated. I thought it would be timely and interesting to talk with you tonight about the issues affecting research analysts in our securities markets.

Over the last several years there has been increased concern regarding the changing role of research analysts. Certainly this issue has garnered national attention and Attorney General Spitzer has brought this issue into sharp focus. While sell-side analysts used to be perceived as objective forecasters of corporate prospects and providers of opinions, they have increasingly become involved in marketing the broker's investment banking services. As markets have declined and with the downfall of Enron, there is increased public concern about research analyst conflicts of interest. Some

of the key questions raised by Congress, regulators, the media, and the public surrounding the relationship between research and investment banking include:

- Do investment banking interests drive ratings?
- Do the personal financial positions of analysts and the securities ownership positions of their firms impair analysts' objectivity?
- Why are there so few sell ratings?
- Why don't analysts change recommendations when there are material financial problems affecting the issuer?

I. Conflicts of Interest for Research Analysts at Full Service Firms: Commission and Congressional Initiatives

Recent press articles make it sound as though the SEC has only just started examining analyst conflict of interest issues. In fact, the SEC began to examine this issue in 1999. We were concerned that analysts, who had become veritable media stars, appearing ubiquitously on television financial programs, did not disclose their own conflicts of interest so that investors could evaluate their recommendations against their possible biases. We were particularly concerned that many investors who rely on analysts' recommendations may not know, among other things, that: the issuer may be an investment banking client of the analyst's firm; the promise of favorable research can be an important component of the marketing of investment banking services; the analyst's compensation may significantly be based on generating investment banking business; the analyst may have personally purchased pre-IPO shares of the issuer; or the issuer may have reviewed and approved a draft of the research report before its publication.

In the summer of 1999, staff from the SEC's Division of Market Regulation began a review of industry practices regarding disclosure of research analyst's conflicts of interest. Then, staff from my office, the Office of Compliance Inspections and Examinations, conducted examinations of the largest full-service firms on the Street. We focused on analysts' financial interests in companies they covered, as well as analyst compensation arrangements and reporting structures, in particular whether analysts reported to investment banking personnel. The SEC reported our findings in Congressional testimony last summer, which were the following:

- Many research analysts were significantly involved with start-up companies well before the companies had established an investment banking relationship with a broker-dealer. This involvement typically included establishing an initial relationship with the company, reviewing the company's operations, and providing informal strategic advice. Many times, these analysts were invited to invest in these companies' private placements, which were not available to the public generally. The staff also found that if the company went public and the analyst's firm underwrote the IPO, the analyst always issued positive research on the company.
- It was commonplace for research analysts to provide research reports

on companies that the analysts' employer firm underwrote. Many firms paid their analysts largely based upon the profitability of their investment banking unit, and investment bankers at some firms were involved in evaluating the firm's research analysts to determine their compensation.

- Some research analysts owned securities in companies they covered. These analysts sometimes acquired their shares in private placements prior to the initial public offering for a fraction of the IPO price. Subsequently, the analysts' firms took the company public and the analyst initiated research coverage with a "buy" recommendation. Examiners found that some of these analysts executed trades for their personal accounts that were contrary to their recommendations in their research reports. In these instances, examination findings were referred to the SEC's enforcement staff.
- The regulations existing at the time did not prohibit analysts from owning stock in companies their employer firms took public or that the analysts covered, but some firms maintained policies prohibiting analysts from owning stock in companies they covered. Other firms permitted analysts to own stock in companies they covered but prohibited them to execute personal trades that were contrary to the analysts' outstanding recommendations.
- At the firms examined, compliance with SRO rules that require firms to monitor the private equity investments of employees (including analysts) was found to be poor. Nearly all firms examined were unable to identify accurately all private equity investments by their employees in companies the firms took public. Consequently, firms did not always know whether their research analysts owned stock in companies they underwrote and upon which their analysts then issued research reports.
- Disclosure of analysts' and firms' ownership in recommended securities varied widely, which may have been due to gaps and inconsistencies between SRO rules. As a result, some firms' analysts' reports affirmatively stated that they or their employees held positions in recommended securities, while other firms used boilerplate noting, "the firm or employees *may* have positions in the recommended issuer." We found some instances in which the analysts' ownership in stock of the covered company was not disclosed in the research report at all.
- Sell-side analysts routinely recommended securities during public appearances in the media (such as on financial television and radio programs), but rarely revealed any conflicts of interest to investors.
- The ratings terminology may have been unclear to investors. The variety of undefined terms to describe investment recommendations, included: "buy," "sell," "strong buy," "hold," "neutral," "accumulate," "near-term accumulate," "long-term buy," "outperform," "market perform," and "market under-perform," could confuse investors.

We were concerned that investors were simply not aware of these conflicts of interest. Last summer, the Commission issued an Investor Alert highlighting the numerous biases that may affect analyst recommendations.

The Alert, called "*Analyzing Analyst Recommendations*," is available on the SEC's website, www.sec.gov, and explains to investors the relationships between securities analysts and the investment banking and brokerage firms that employ them, and educates investors about potential conflicts of interest analysts may face.

Congress also has focused on the independence of research analysis. The House Subcommittee on Capital Markets, Chaired by Richard Baker, held hearings last summer entitled, "*Analyzing the Analysts: Are Investors Getting Unbiased Research from Wall Street?*" The SEC provided testimony at the hearing concerning the preliminary results of the OCIE exams. The Congressional landscape has also recently included proposals covering research analysts. House Financial Services Chairman Oxley's bill (HR 3763) would require the SEC to examine the implementation and effectiveness of any new rules adopted by the SROs and to report to Congress, including making recommendations as to what further action may be necessary. There have been other legislative proposals in Congress that would enact structural reforms in the securities industry and/or require SEC rulemaking.

Given the serious concerns about the conflicts of interest analysts face that may taint or bias their advice, last fall the NASD and NYSE, following a call from the SEC and Congress, began to work together to craft new rules that would aim to restore investor confidence in the analysts' work. These rules were designed to address the conflicts of interest identified by the SEC. They were first proposed and aired for public comment in February and after reviewing and addressing various commenters' concerns, they were adopted today. Before I describe the rules, it's important to note that the Commission was very clear in saying that these rules are a first step in addressing analysts' conflicts, and that additional rules may be appropriate.

II. New Rules Governing Research Analysts

The new rules include the following provisions, among others:

- **Limitations on Relationships and Communications Between Investment Banking and Research Analysts.** The rules prohibit research analysts from being supervised by the investment banking department. In addition, investment banking personnel will be prohibited from discussing research reports with analysts prior to distribution, unless staff from the firm's legal/compliance department monitor those communications. Analysts will also be prohibited from sharing draft research reports with the target companies, other than to check facts after approval from the firm's legal/compliance department. *This provision helps protect research analysts from influences that could impair their objectivity and independence.*
- **Analyst Compensation Prohibitions.** The rules bar securities firms from tying an analyst's compensation to specific investment banking transactions. Furthermore, if an analyst's compensation is based on the firm's general investment banking revenues, that fact will have to be disclosed in the firm's research reports. *Prohibiting compensation from specific investment banking transactions significantly curtails a potentially major influence on research analysts' objectivity.*

- **Firm Compensation.** The rules require a securities firm to disclose in a research report if it managed or co-managed a public offering of equity securities for the company, or if it received any compensation for investment banking services from the company in the past 12 months. A firm also will be required to disclose if it expects to receive or intends to seek compensation for investment banking services from the company during the next 3 months. *Requiring securities firms to disclose compensation from investment banking clients can alert investors to potential biases in their recommendations.*
- **Promises of Favorable Research are Prohibited.** The rules prohibit analysts from offering or threatening to withhold a favorable research rating or specific price target to induce investment banking business from companies. The rule changes also impose "quiet periods" that bar a firm that is acting as manager or co-manager of a securities offering from issuing a report on a company within 40 days after an initial public offering or within 10 days after a secondary offering for an inactively traded company. *Promising favorable research coverage to a company would not be as attractive if the research will follow research issued by other analysts.*
- **Restrictions on Personal Trading by Analysts.** The rules bar analysts and members of their households from investing in a company's securities prior to its initial public offering if the company is in the business sector that the analyst covers. In addition, the rules require "blackout periods" that prohibit analysts from trading securities of the companies they follow for 30 days before and 5 days after they issue a research report about the company. Analysts also will be prohibited from trading against their most recent recommendations. *Removing analysts' incentives to trade around the time they issue research reports should reduce conflicts arising from personal financial interests.*
- **Disclosures of Financial Interests in Covered Companies.** The rules require analysts to disclose if they own shares of recommended companies. Firms also will be required to disclose if they own 1% or more of a company's equity securities as of the previous month end. *Requiring analysts and securities firms to disclose financial interests can alert investors to potential biases in their recommendations.*
- **Disclosures in Research Reports Regarding the Firm's Ratings.** The rules require firms to clearly explain in research reports the meaning of all ratings terms they use, and this terminology must be consistent with its plain meaning. Additionally, firms will have to provide the percentage of all the ratings that they have assigned to buy / hold / sell categories and the percentage of investment banking clients in each category. Firms will also be required to provide a graph or chart that plots the historical price movements of the security and indicates those points at which the firm initiated and changed ratings and price targets for the company. *These disclosures will assist investors in deciding what value to place on a securities firm's ratings and provide them with better information to assess its research.*
- **Disclosures During Public Appearances by Analysts.** The rules require disclosures from analysts during public appearances, such as

television or radio interviews. Guest analysts will have to disclose if they or their firm have a position in the stock and also if the company is an investment banking client of the firm. *This disclosure will inform investors who learn of analyst opinions and ratings through the media, rather than in written research reports, of analyst conflicts.*

As you can see, these new rules are quite significant, and in my view, will certainly help to address the significant conflicts of interests that we saw in our examinations last summer. These new rules impose major changes in the way research is conducted. But the costs of implementation are minimal when compared to the need to restore integrity and investor confidence in research analysts' work.

III. Next Steps

What's next? The rules will be implemented by the firms, and provisions of the new rules have different kick-in dates to allow firms to make systems and other changes to become compliant. The SROs are committed to providing any interpretive guidance that is needed, and to ensure uniformity and consistency in interpretation. Both SROs will provide members with guidance notices to their members about the new rules, and they will work with smaller firms to ensure that the rules can be implemented in their environment. The SEC also requested that the NASD and NYSE report within a year of implementing the rules on their operation and effectiveness, and whether any changes or additions should be made to the rules.

Several weeks ago, the SEC announced that it had commenced a formal inquiry into market practices concerning analysts. We are conducting the inquiry jointly with the NYSE and NASDR, and with NASAA, and numerous state securities regulators. We are focusing in this review on several things — **First**, have analysts issued ratings that are fraudulent? The recent information revealed by the New York Attorney General's Office is very troubling. I note that existing anti-fraud rules prohibit making statements that the speaker knows not to be true — that would be fraud, plain and simple. **Second**, are the firms complying with the new rules? We'll be looking to see compliance with the new rules as they go effective. **Finally**, we'll be reviewing whether additional rules may be appropriate. I am very pleased that we will be partnering with all securities regulators in this effort.

IV. Conclusion

This is a time of change for research analysts. In some quarters, they have been villified. It's important to remember that they perform an important service — and they need to do their work in an environment free from conflicts and biases. Investor trust is too critical to their work to allow them to be compromised. The new SRO rules approved by the SEC today, and the other steps we are taking, go a long way to helping analysts regain their independence.

I have often said that, what's in investors' best interest is also in the best interest of firms doing business with investors. That's certainly true with respect to firms that have analysts who communicate with public investors. It's in these firms' interest to make sure that their analysts are in fact

independent. Literal compliance with the rules is one thing, but firms can take steps, above and beyond the rules, to ensure that they create a culture and an environment that enforces and holds analyst objectivity paramount. Today's news that one firm that helped underwrite an IPO, also issued an unfavorable recommendation on that very issue, is a good sign that objectivity is possible.

Thank you for your attention. If you enjoyed my talk this evening, please remember my name is Lori Richards. And if you didn't enjoy my talk, my name is Harvey Pitt.

<http://www.sec.gov/news/speech/spch559.htm>

[Home](#) | [Previous Page](#)

Modified: 05/09/2002



Home | Previous Page

U.S. Securities and Exchange Commission

Statement Regarding Global Settlement Related to Analyst Conflicts of Interest

U.S. Securities and Exchange Commission

Washington, D.C.
April 28, 2003

Today the Commission announced enforcement actions against ten broker-dealers for failing to ensure that the research they provided their customers was independent and unbiased by investment banking interests. The settlements of these actions, which were brought in conjunction with proceedings by the NASD, the New York Stock Exchange (NYSE), the New York Attorney General (NYAG) and other states, impose significant monetary relief on the firms, including penalties that rank among the highest - and in the case of one firm, *the* single highest penalty - ever paid in civil securities enforcement actions. These landmark penalties reflect the serious nature of the misconduct, as well as the Commission's belief that securities firms must hold the interests of their customers paramount. Moreover, the settlement agreements make clear that the firms may not treat these penalties as tax deductible or seek reimbursement for them from an insurance carrier or other third party. Investigations of the roles played by individual securities analysts and their supervisors are ongoing.¹

The federal portions of the penalties, and of the disgorgement the firms also are required to pay, will be deposited into distribution funds to help compensate customers of the firms who invested in equity securities identified in the Commission's complaints. The Commission has invited the states to contribute their portions of the civil penalties and disgorgement to the funds for investors as well.

These settlements mark an important milestone in the Commission's investigation, and in its regulatory initiatives to help ensure that research provided to investors is objective. The settlements include important structural requirements designed to insulate research analysts from pressures by investment banking, including:

- Separate reporting structures for analysts and investment bankers;
- A requirement that a significant portion of each analyst's compensation be based on the quality and accuracy of the analyst's research;
- A prohibition on the solicitation of investment banking business by analysts;
- A prohibition on analyst participation in investment banking road

shows;

- Limitations on analysts' contacts with investment bankers designed to maintain the analyst's role as gatekeeper in the offering process but to prevent the analyst from serving as marketer or cheerleader for investment banking transactions; and
- The implementation of policies and procedures designed to prevent anyone from seeking to influence the contents of a research report for the purpose of obtaining or retaining investment-banking business.

The settlements also require the firms to pay to provide investors independent, third-party research whenever they solicit investors to purchase securities. Under the settlements, certain firms also are required to provide funding for investor education initiatives designed to arm investors with the knowledge and skills they need to make informed investment decisions.

In an effort to restore investor confidence in the underwriting process, each firm will voluntarily agree to cease allocating shares in "hot" IPOs to corporate executives who could direct investment banking business to a firm, a practice known as "spinning." The Commission intends to determine the need for specific rulemaking in this area, in light of these and other recent Commission enforcement actions that indicate abuses in the IPO allocation process. In addition, the Commission intends to review the implementation of the settlements, along with reforms adopted by the Commission and the NASD and NYSE over the last two years, to evaluate whether additional, harmonizing, or superceding rules are appropriate.

The Commission wishes to thank other regulators who participated in the investigations and in the settlements.

Endnote

¹ Also today, the Commission announced settled enforcement actions against two individual research analysts - Jack Grubman (formerly associated with Salomon Smith Barney Inc.) and Henry Blodget (formerly associated with Merrill Lynch, Pierce, Fenner & Smith Incorporated). The settlements of these actions include significant penalties (which the defendants may not treat as tax deductible or seek to recover from insurance carrier or other third party), disgorgement, injunctions, as well as lifetime bars from association with broker-dealers and investment advisers. The action against Jack Grubman was brought in conjunction with the NASD, NYSE and NYAG. The action against Henry Blodget was brought in conjunction with the NASD and NYSE.

<http://www.sec.gov/news/speech/spch042803com.htm>

[Home](#) | [Previous Page](#)

Modified: 04/28/2003

FINANCIAL **Q**UARTERLY

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Comparable Earnings: New Life for an Old Precept

by
Frank J. Hanley
Pauline M. Ahern

Comparable Earnings: New Life for an Old Precept

Accelerating deregulation has greatly increased the investment risk of natural gas utilities. As a result, the authors believe it more appropriate than ever to employ the comparable earnings model. We believe our application of the model overcomes the greatest traditional objection to it — lack of comparability of the selected non-utility proxy firms. Our illustration focuses on a target gas pipeline company with a beta of 0.96 — almost equal to the market's beta of 1.00.

Introduction

The comparable earnings model used to determine a common equity cost rate deeply rooted in the standard of "corresponding risk" enunciated in the landmark *Bluefield* and *Hope* decisions of the U.S. Supreme Court.¹ With such solid grounding in the foundations of rate of return regulation, comparable earnings should be accepted as a principal model, along with the currently popular market-based models, provided that its most common criticism, non-comparability of the proxy companies, is overcome.

Our comparable earnings model overcomes the non-comparability issue of the non-utility firms selected as a proxy for the target utility, in this example, a gas pipeline company. We should note that in the absence of common stock prices for the target utility (as with a wholly-owned subsidiary), it is appropriate to use the average of a proxy group of similar risk gas pipeline companies whose common stocks are actively traded. As we will demonstrate, our selection process results in a group of domestic, non-utility firms that is comparable in total risk, the sum of business and financial risk, which reflects both non-diversifiable systematic, or market, risk as well as diversifiable unsystematic, or firm-specific, risk.



Frank J. Hanley is president of AUS Consultants — Utility Services Group. He has testified in several hundred rate proceedings on the subject of cost of capital before the Federal Energy Regulatory Commission and 27 state regulatory commissions. Before joining AUS in 1971, he was an assistant treasurer of a number of operating companies in the American Water Works System, as well as a financial planning officer with the Philadelphia National Bank. He is a Certified Rate of Return Analyst.

Pauline M. Ahern is a senior financial analyst with AUS Consultants — Utility Services Group. She has participated in many cost-of-capital studies. A former employee of the U.S. Department of the Treasury and the Federal Reserve Bank of Boston, she holds an MBA degree from Rutgers University and is a Certified Rate of Return Analyst.

Embedded in the Landmark Decisions

As stated in *Bluefield* in 1922: "A public utility is entitled to such rates as will permit it to earn a return ... on investments in other business undertakings which are attended by corresponding risks and uncertainties ..."

In addition, the court stated in *Hope* in 1944: "By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks."

Thus, the "corresponding risk" pre-

cept of *Bluefield* and *Hope* predates the use of such market-based cost-of-equity models as the Discounted Cash Flow (DCF) and Capital Asset Pricing (CAPM), which were developed later and are currently popular in rate-base/rate-of-return regulation. Consequently, the comparable earnings model has a longer regulatory and judicial history. However, it has far greater relevance now than ever before in its history because significant deregulation has substantially increased natural gas utilities' investment risk to a level similar to that of non-utility firms. As a result, it is

Comparable Earnings from page 4

more important than ever to look to similar-risk non-utility firms for insight into common equity cost rate, especially in view of the deficiencies inherent in the currently popular market-based cost of common equity models, particularly the DCF model.

Despite the fact that the landmark decisions are still regarded as having set the standards for determining a fair rate of return, the comparable earnings model has experienced decreased usage by expert witnesses, as well as less regulatory acceptance over the years. We believe the decline in the popularity of the comparable earnings model, in large measure, is attributable to the difficulty of selecting non-utility proxy firms that regulators will accept as comparable to the target utility. Regulatory acceptance is difficult to gain when the selection process is arbitrary. Our application of the model is objective and consistent with fundamental financial tenets.

Principles of Comparable Earnings

Regulation is a substitute for the competition of the marketplace. Moreover, regulated public utilities compete in the capital markets with all firms, including unregulated non-utilities. The comparable earnings model is based upon the opportunity cost principle: i.e., that the true cost of an investment is the return that could have been earned on the next best available alternative investment of similar risk. Consequently, the comparable earnings model is consistent with regulatory and financial principles, as it is a surrogate for the competition of the marketplace, and investors seek the greatest available rate of return for bearing similar risk.

The selection of comparable firms is the most difficult step in applying the comparable earnings model, as noted by Phillips² as well as by Bonbright, Danielsen and Kamerschen.³ The selection of non-utility proxy firms should result in a sufficiently broad-based group in order to minimize the effect of company-specific aberrations. How-

ever, if the selection process is arbitrary, it likely would result in a proxy group that is too broad-based, such as the Standard & Poor's 500 Composite Index or the Value Line Industrial Composite. The use of such groups would require subjective adjustments to the comparable earnings results to reflect risk differences between the group(s) and the target utility, a gas pipeline company in this example.

Authors' Selection Criteria

We base the selection of comparable non-utility firms on market-based, objective, quantitative measures of risk resulting from market prices that subsume investors' assessments of all elements of risk. Thus, our approach is based upon the principle of risk and return; namely, that firms of comparable risk should be expected to earn comparable returns. It is also consistent with the "corresponding risk" standard established in *Bluefield* and *Hope*. We measure total investment risk as the sum of non-diversifiable systematic and diversifiable unsystematic risk. We use the unadjusted beta as a measure of systematic risk and the standard error of the estimate (residual standard error) as a measure of unsystematic risk. Both the unadjusted beta and the residual standard error are derived from a regression of the target utility's security returns relative to the market's returns, which takes the general form:

$$r_{it} = a_i + b_i r_{mt} + e_{it}$$

where:

r_{it} = t th observation of the i th utility's rate of return

r_{mt} = t th observation of the market's rate of return

e_{it} = t th random error term

a_i = constant least-squares regression coefficient

b_i = least-squares regression slope coefficient, the unadjusted beta.

As shown by Francis,⁴ the total variation or risk of a firm's return, $\text{Var}(r_i)$, comes from two sources:

$\text{Var}(r_i)$ = total risk of i th asset

$$\begin{aligned} &= \text{var}(a_i + b_i r_m + e) \\ &\quad \text{substituting } (a_i + b_i r_m + e) \\ &\quad \text{for } r_i \\ &= \text{var}(b_i r_m) + \text{var}(e) \text{ since} \\ &\quad \text{var}(a_i) = 0 \\ &= b_i^2 \text{var}(r_m) + \text{var}(e) \\ &\quad \text{since } \text{var}(b_i r_m) = b_i^2 \\ &\quad \text{var}(r_m) \\ &= \text{systematic} + \\ &\quad \text{unsystematic risk} \end{aligned}$$

Francis⁵ also notes: "The term $\sigma^2(r_i|r_m)$ is called the residual variance around the regression line in statistical terms or unsystematic risk in capital market theory language. $\sigma^2(r_i|r_m) = \dots = \text{var}(e)$. The residual variance is the squared standard error in regression language, a measure of unsystematic risk." Application of these criteria results in a group of non-utility firms whose average total investment risk is indeed comparable to that of the target gas pipeline.

As a measure of systematic risk, we use the Value Line unadjusted beta. Beta measures the extent to which market-wide or macro-economic events affect a firm's stock price. We use the unadjusted beta of the target utility as a starting point because it results from the regression of the target utility's security returns relative to the market's returns. Thus, the resulting standard deviation of beta relates to the unadjusted beta. We use the standard deviation of the unadjusted beta to determine the range around it as the selection criterion based on systematic risk.

We use the residual standard error of the regression as a measure of unsystematic risk. The residual standard error reflects the extent to which events specific to the firm's operations affect a firm's stock price. Thus, it is a measure of diversifiable, unsystematic, firm-specific risk.

An Illustration of Authors' Approach

Step One: We begin our approach by establishing the selection criteria as a range of both unadjusted beta and residual standard error of the target gas
continued on page 6

Comparable Earnings *from page 5*

pipeline company.

As shown in table 1, our target gas pipeline company has a Value Line unadjusted beta of 0.90, whose standard deviation is 0.1250. The selection criterion range of unadjusted beta is the unadjusted beta plus (+) and minus (-) three of its standard deviations. By using three standard deviations, 99.73 percent of the comparable unadjusted betas is captured.

Three standard deviations of the target utility's unadjusted beta equals 0.38 ($0.1250 \times 3 = 0.3750$, rounded to 0.38). Consequently, the range of unadjusted betas to be used as a selection criteria is $0.52 - 1.28$ ($0.52 = 0.90 - 0.38$) and $1.28 = 0.90 + 0.38$.

Likewise, the selection criterion range of residual standard error equals the residual standard error plus (+) and

minus (-) three of its standard deviations. The standard deviation of the residual standard error is defined as: $\sigma/\sqrt{2N}$.

As also shown in table 1, the target gas pipeline company has a residual standard error of 3.7867. According to the above formula, the standard deviation of the residual standard error would be 0.1664 ($0.1664 = 3.7867/\sqrt{2(259)} = 3.7867/22.7596$, where $259 = N$, the number of weekly price change observations over a period of five years). Three standard deviations of the target utility's residual standard error would be 0.4992 ($0.1664 \times 3 = .4992$). Consequently, the range of residual standard errors to be used as a selection criterion is $3.2875 - 4.2859$ ($3.2875 = 3.7867 - 0.4992$) and $(4.2859 = 3.7867 + 0.4992)$.

Step Two: The step one criteria are applied to Value Line's data base of nearly 4,000 firms for which Value Line derives unadjusted betas and residual standard errors on a weekly basis. All firms with unadjusted betas and residual standard errors within the criteria ranges are then selected.

Step Three: In the regulatory ratemaking environment, authorized common equity return rates are applied to a book-value rate base. Thus, the earnings rates on book common equity, or net worth, of competitive, non-utility firms are highly relevant provided those firms are indeed comparable in total risk to the target gas pipeline. The use of the return rates of other utilities has no relevance because their allowed, and hence subsequently achieved, earnings rates are dependent upon the regulatory

table 1

Summary of the Comparable Earnings Analysis for the Proxy Group of 248 Non-Utility Companies Comparable in Total Risk to the Target Gas Pipeline Company¹

	1	2	3	4	5	6	7	8
	adj. beta	unadj. beta	residual standard error	rate of return on net worth				
				3-year average ²	4-year average ²	5-year average ²	5-year projected ³	
average for the proxy group of 248 non-utility companies comparable in total risk to the target gas pipeline company	0.97	0.92	3.7705					
target gas pipeline company	0.96	0.90 ⁴	3.7867					
median				11.7%	12.0%	12.6%	15.5%	
average of the median historical returns					12.1%			
conclusion ⁵								13.8%

¹The criteria for selection of the non-utility group was that the non-utility companies be domestic and included in Value Line Investment Survey. The non-utility group was selected based on an unadjusted beta range of 0.52 to 1.28 and a residual standard error range of 3.2875 to 4.2859.

²Ending 1992.

³1996-1998/1997-1999.

⁴The average standard deviation of the target gas pipeline company's unadjusted beta is 0.1250.

⁵Equal weight given to both the average of the 3-, 4- and 5-year historical medians (12.1%) and 5-year projected median rate of return on net worth (15.5%). Thus, $13.8\% = (12.1\% + 15.5\% / 2)$.

Source: Value Line Inc., March 15, 1994
 Value Line Investment Survey

Comparable Earnings *from page 6*

process. Consequently, we believe all utilities must be eliminated to avoid circularity. Moreover, we believe non-domestic firms must be eliminated because their reporting methods differ significantly from U.S. firms.

Step Four: We then eliminated those firms for which Value Line does not publish a "Ratings & Report" in *Value Line Investment Survey* so that the historical and projected returns on net worth⁶ are from a consistent source. We use historical returns on net worth for the most recent five years, as well as those projected three to five years into the future. We believe it is logical to evaluate both historical and projected return rates because it is reasonable to assume that investors avail themselves of both when they are available from widely disseminated information ser-

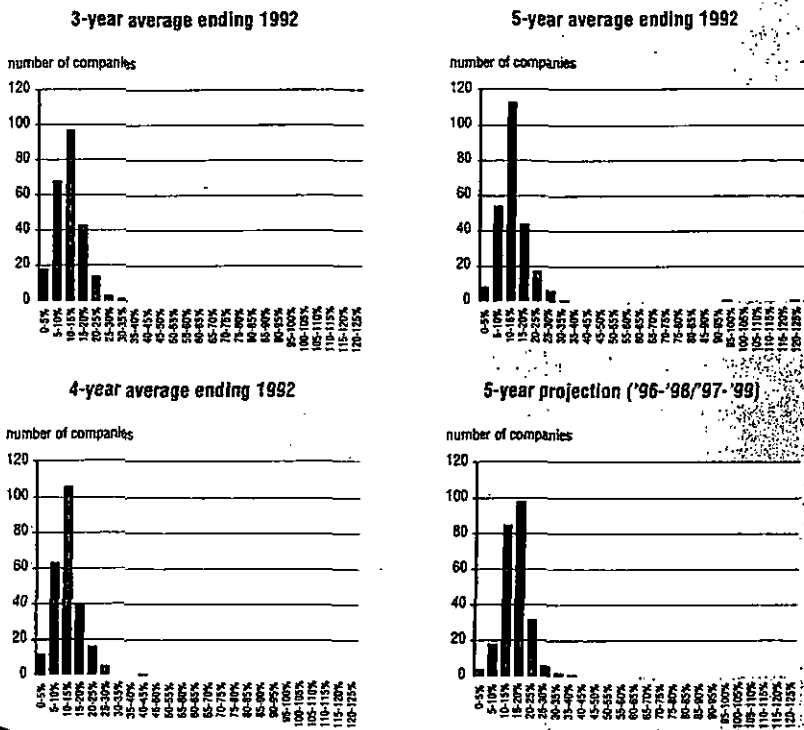
VICES, such as Value Line Inc. The use of Value Line's return rates on net worth understates the common equity return rates for two reasons. First, preferred stock is included in net worth. Second, the net worth return rates are as of the end of each period. Thus, the use of average common equity return rates would yield higher results.

Step Five: Median returns based on the historical average three, four and five years ending 1992 and projected 1996-1998 or 1997-1999 rates of return on net worth are then determined as shown in columns 4 through 7 of table 1. The median is used due to the wide variations and skewness in rates of return on net worth for the non-utility firms as evidenced by the frequency distributions of those returns as shown in illustration 1.

However, we show the average unadjusted beta, 0.92, and residual standard error, 3.7705, for the proxy group in columns 2 and 3 of table 1 because their frequency distributions are not significantly skewed, as shown in illustration 2.

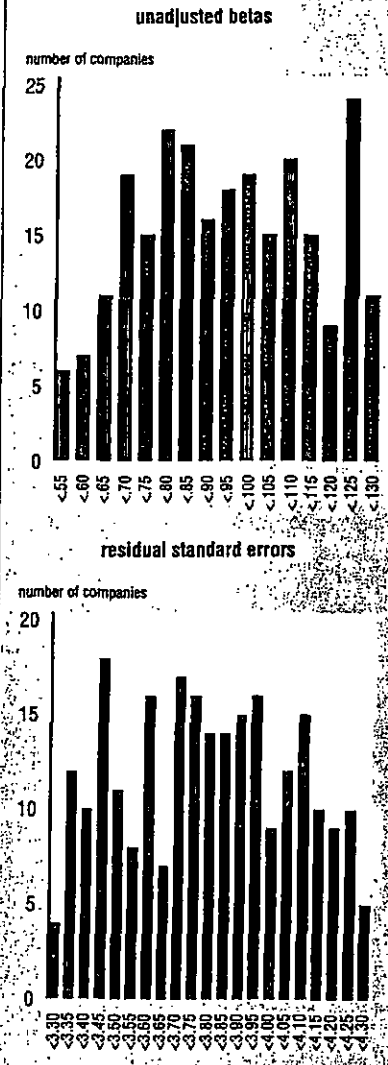
Step Six: Our conclusion of a com-
continued on page 8

Illustration 1
**Rates of Return on Net Worth
 for the Proxy Group of 248 Non-Utility Companies¹**



¹Comparable to target gas pipeline

Illustration 2
**Unadjusted Betas
 and Residual Standard Errors
 for the Proxy Group of 248
 Non-Utility Companies¹**



¹Comparable to target gas pipeline

Comparable Earnings *from page 7*

comparable earnings cost rate is based upon the mid-point of the average of the median three-, four- and five-year historical rates of return on net worth of 12.1 percent as shown in column 5 and the median projected 1996-1998/1997-1999 rate of return on net worth of 15.5 percent as shown in column 7 of table 1. As shown in column 8, it is 13.8 percent.

Summary

Our comparable earnings approach demonstrates that it is possible to select a proxy group of non-utility firms that is comparable in total risk to a target utility. In our example, the 13.8 percent comparable earnings cost rate is very conservative as it is an expected achieved rate on book common equity (a regulatory allowed rate should be

greater) and because it is based on end-of-period net worth. A similar rate on average net worth would be about 20 to 40 basis points higher (i.e., 14.0 to 14.2 percent) and still understate the appropriate regulatory allowed rate of return on book common equity.

Our selection criteria are based upon measures of systematic and unsystematic risk, specifically unadjusted beta and residual standard error. They provide the basis for the objective selection of comparable non-utility firms. Our selection criteria rely on changes in market prices over approximately five years. We compare the aggregate total risk, or the sum of systematic and unsystematic risk, which reflects investors' aggregate assessment of both business and financial risk. Thus, no adjustments are necessary to the proxy group results to

compensate for the differences in business risk and financial risk, such as accounting practices and debt/equity ratios. Moreover, it is inappropriate to attempt a comparison of the target utility with any individual firm, or subset of firms, in the proxy group because only the average firm of the group is relevant.

Because the comparable earnings model is firmly anchored in the "corresponding risk" precept established in the landmark court decisions, it is worthy of consideration as a principal model for use in estimating the cost rate of common equity capital of a regulated utility. Our approach to the comparable earnings model produces a proxy group that is indeed comparable in total risk because the selection process is objective and quantitative. It therefore overcomes criticism linked to arbitrary selection processes.

All cost-of-common-equity models, including the DCF and CAPM, are fraught with deficiencies, usually stemming from the many necessary but unrealistic assumptions that underlie them. The effects of the deficiencies of individual models can be mitigated by using more than one model when estimating a utility's common equity cost rate. Therefore, when the non-comparability issue is overcome, the comparable earnings model deserves to receive the same consideration as a primary model, as do the currently popular market-based models. ■

Report Lists Pipeline, Storage Projects

More than \$9 billion worth of projects to expand the nation's natural gas pipeline network are in various stages of development, according to an A.G.A. report. These projects involve nearly 8,000 miles of new pipelines and capacity additions to existing lines and represent 15.3 billion cubic feet (Bcf) per day of new pipeline capacity.

During 1993 and early 1994, construction on 3,100 miles of pipeline was completed or under way, at a cost of nearly \$4 billion, says A.G.A. These projects are adding 5.4 Bcf in daily delivery capacity nationwide.

Among the projects completed in 1993 were Pacific Gas Transmission Co.'s 805 miles of looping that allows increased deliveries of Canadian gas to the West Coast; Northwest Pipeline Corp.'s addition of 433 million cubic feet of daily capacity for customers in the Pacific Northwest and Rocky Mountain areas; and the 156-mile Empire State Pipeline in New York.

In addition, major construction projects were started on the systems of Texas Eastern Transmission Corp. and Algonquin Gas Transmission Co. — both subsidiaries of Panhandle Eastern Corp. — and along Florida Gas Transmission Co.'s pipeline.

The report goes on to discuss another \$5 billion in proposed projects, which, if completed, will add nearly 5,000 miles of pipeline and 9.8 Bcf per day in capacity, much of it serving Florida and West Coast markets.

A.G.A. also identifies 47 storage projects and says that if all of them are built, existing storage capacity will increase by more than 500 Bcf, or 15 percent.

For a copy of *New Pipeline Construction: Status Report 1993-94* (#F00103), call A.G.A. at (703) 841-8490. Price per copy is \$6 for employees of member companies and associates and \$12 for other customers.

¹*Bluefield Water Works Improvement Co. v. Public Service Commission*, 262 U.S. 679 (1922) and *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 519 (1944).

²Charles F. Phillips Jr., *The Regulation of Public Utilities: Theory and Practice*, Public Utilities Reports Inc., 1988, p. 379.

³James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, *Principles of Public Utilities Rates*, 2nd edition, Public Utilities Reports Inc. 1988, p. 329.

⁴Jack Clark Francis, *Investments: Analysis and Management*, 3rd edition, McGraw-Hill Book Co., 1980, p. 363.

⁵*Id.*, p. 548.

⁶Returns on net worth must be used when relying on Value Line data because returns on book common equity for non-utility firms are not available from Value Line.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meinl

1 Q. State your name and business address.

2 A. My name is Eric H. Meinl. My business address is 6363 Main St,
3 Williamsville, New York 14221.

4 Q. By whom are you employed and in what capacity?

5 A. I am employed by National Fuel Gas Distribution Corporation ("Distribution"
6 or "Company") as General Manager in Distribution's Rates and Regulatory
7 Affairs Department.

8 Q. Have you previously submitted testimony in this proceeding?

9 A. Yes, I have sponsored Statement Nos. 11 and 11-S, and the associated
10 Exhibits.

11 Q. What is the subject of your rebuttal testimony?

12 A. I will be responding to the direct testimony of the parties in this case relating
13 to the following issues: (1) the proposed Enhanced Energy Efficiency ("EEE")
14 program, (2) the proposed seasonal rates associated with the recovery of
15 purchased gas demand costs and the associated rate redesign that recovers
16 more of the Company's fixed non-gas costs from the first block of rates, (3)
17 the proposed initiatives to further competition for Natural Gas Supply
18 ("NGS") service including the proposed Merchant Function Charge ("MFC")
19 and the purchase of receivables ("POR") program, and (4) the appropriate
20 return on equity ("ROE") to select from the reasonable range of ROEs
21 presented in this case by the Company's expert rate of return witness, Mr.
22 Frank J. Hanley.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 Specifically, I will address the direct testimony presented by the following
2 witnesses as it relates to the aforementioned issues: Office of Trial Staff
3 (“OTS”) witnesses Mr. Joseph Kubas, Ms. Janet M. Markovich, Mr. Kevin
4 Deardorff, and Mr. James Farley; Office of Consumer Advocate (“OCA”)
5 witnesses Mr. Richard A. Galligan and Ms. Barbara R. Alexander; Office of
6 Small Business Advocate (“OSBA”) witness Mr. Robert D. Knecht; and
7 Community Action Association of Pennsylvania (“CAAP”) witness Mr. John
8 A. Wilson.

9 Q. Please summarize the position of the intervening parties regarding the EEE
10 Rider.

11 A. The EEE Rider is opposed by OTS witness Kubas, OCA witness Galligan,
12 OSBA witness Knecht, and CAAP witness Wilson.

13 Q. Do reasons for opposing the EEE Rider presented by these witnesses have
14 merit?

15 A. No. The reasons presented by these witnesses for opposing the EEE Rider do
16 not have merit. The reasons presented by these witnesses ignore the
17 fundamental issue related to Company sponsored energy efficiency efforts
18 which the EEE Rider is designed to resolve. That fundamental issue is the
19 disincentive for utility promotion of customer conservation that is currently in
20 place under existing rate designs that recover a significant portion of a gas
21 utility’s fixed costs through variable usage rates. There is a growing

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 consensus from a wide variety of diverse industry participants that recognize
2 the problems with this disincentive.

3 The arguments in opposition to the Company's proposed EEE program
4 also list a number of issues related with the proposed program that could
5 easily be resolved through minor modifications to the Company's proposed
6 EEE program.

7 Q. Could you summarize the arguments against the proposed EEE program
8 presented by the parties in this case?

9 A. Yes. There were a number of arguments presented by the witnesses in
10 opposition to the Company's EEE proposal. At times the observations and
11 conclusions espoused by one witness was contrary to those recommended by
12 another.

13 The Company's proposal was criticized as a single issue rate making
14 proposal that guarantees the Company's rate of return which later would be
15 criticized because it did not mitigate future base rate increases. One party
16 even professed an affection for base rate filings, which the proposed EEE
17 Rider would unfortunately mitigate.

18 The program was deemed to be unfair to existing customers that use the
19 same or more gas from the previous year and it penalizes small volume
20 customers that do not use gas for heating and it also penalizes low income
21 customers that use more gas than the average customer uses because of
22 inefficient furnaces in low income households.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meinel

1 One witness believes the Company should not be primarily involved in
2 promoting conservation while others believe the Company's conservation
3 efforts should be more focused and expanded.

4 None of these witnesses however address the fundamental issue as to how
5 to remove the disincentive for the promotion of conservation by utilities
6 caused by the recovery of fixed costs through volumetric rates.

7 All parties in opposition to the EEE Rider have largely ignored this
8 disincentive as well as other facts that support implementation of the EEE
9 Rider.

10 Q. Doesn't the OSBA's recommendation that the utility not be involved in
11 conservation outreach address the disincentive?

12 A. Not entirely. The OSBA witness merely suggests that he does not believe that
13 an NGDC should be the "primary" instrument for energy conservation (OSBA
14 witness Knecht pg .49). The OSBA witness believes that circumstances have
15 changed such that regulatory requirements that the utility serve as the primary
16 motivating force for encouraging customer conservation have been reduced.

17 It should be recognized while the OSBA is suggesting that the utility's
18 role in promoting conservation should begin to be reduced, the OSBA is not
19 saying that the utility should have no role in promoting conservation.

20 Therefore, the utility would continue to be faced with the dilemma of
21 promoting customer activity that is contrary to the utility's financial interest.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 Further, OSBA witness Knecht's belief that a utility does not have a
2 primary role in conservation is contrary to most of the positions of the various
3 organizations which promote energy efficiency. Indeed, there is a consensus
4 among a broad base of governmental, industry, consumer, and environmental
5 groups interested in energy efficiency issues, that utilities play an important
6 role in providing energy efficiency information to their customers. This is
7 clearly demonstrated in Exhibit 211, Schedule 1 which is a Statement of
8 Agreement issued by a number of organizations in support of, among other
9 things, revenue decoupling in New York State. There is clear agreement from
10 this broad based group that linking utility financial benefits to the amount of
11 gas that a customer moves through the utility's pipe provides a disincentive to
12 promote energy efficiency and that this disincentive is contrary to the
13 provision of reliable, clean, and affordable energy in the state.

14 The recent National Action Plan for Energy Efficiency, facilitated by the
15 US Department of Energy and the US Environmental Protection Agency
16 recognizes the important role that utilities can play in promoting the efficient
17 use of natural gas. Exhibit 211, Schedule 2 provides an excerpt from the
18 National Action Plan for Energy Efficiency. As can be seen from this exhibit
19 the Leadership Group responsible for assembling the plan recognize that
20 utilities as well as regulators "have critical roles in creating and delivering
21 energy efficiency programs to their communities". The Leadership Group
22 also recommends that policies be modified to align utility incentives with

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 energy efficiency and that revenue decoupling can be used to properly align
2 incentives.

3 Q. OTS witness Kubas states that the proposed EEE Rider will guarantee
4 revenues (Direct Testimony of OTS Witness Kubas pg. 57) for the Company.
5 OTS witness Kubas and OCA witness Galligan also believe that little of the
6 Company's revenues are subject to variance (Direct Testimony of OCA
7 witness Galligan pg. 37 and Direct Testimony of OTS witness Kubas pg. 57).
8 Please comment.

9 A. The OCA and OTS completely ignore my testimony where the negative
10 impacts on the Company's financial performance from declining usage per
11 account was clearly outlined. As explained on page 13, lines 12-14 of my
12 direct testimony (Statement No. 11), for each one percent of usage that a small
13 customer conserves the Company loses approximately \$600,000 towards the
14 recovery of fixed costs. This \$600,000 towards the recovery of fixed costs
15 translates into approximately 25 basis points on return on equity.

16 The financial community is aware of the impact of declining usage per
17 account on NGDCs. Exhibit 211, Schedule 3 is an analysis of RDMs by
18 Moody's Investor Service. The financial community is quickly drawing a
19 distinction between LDCs with RDMs and LDCs that do not have RDMs.

20 As Moody's Report states:

21 "LDCs that have or soon expect to have, [RDMs] stand
22 a better chance than others in being able to maintain their
23 credit ratings or stabilize their credit outlook in face of
24 adversity. This difference between those companies that

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 have [RDMS] and those that do not will tend to be further
2 accentuated as the credit demarcation reflected through
3 rating actions becomes more evident". (Exhibit 211,
4 Schedule 3, page 1)
5

6 "While [RDMS] may have originally begun as a
7 regional concept in certain jurisdictions, it has quickly
8 become a nationwide phenomenon that will challenge
9 regulators and gas utilities alike, as they seek to correct a
10 structural imbalance in their rate design that has become
11 increasingly difficult to ignore". (Exhibit 211, Schedule 3,
12 page 6).

13 A 25 basis point reduction per 1% decline in usage per account has a
14 significant impact on the Company's overall earnings. Indeed, for the 12
15 months ended June 2006 the decline in normalized usage per account for the
16 residential class in the Company's Pennsylvania division has been
17 approximately 5%. Given the significant negative earnings impact from
18 declining usage per account, it is only fair for investors to ask why the
19 Company would continue to promote conservation efforts on its system
20 especially when it appears that these efforts are totally discounted by
21 regulators as contributing to efficient use of natural gas by customers.

22 It is abundantly clear, contrary to the OCA and OTS witness's assertions,
23 that conservation can have a significant negative impact on the Company's
24 overall financial performance. It is also clear; that while the OCA, OSBA,
25 OTS, and CAAP witnesses may prefer to ignore this fact, the financial
26 community is keenly aware of the negative consequences that customer
27 conservation can have on Company earnings. Further, given the recognition

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 that the financial community gives to NGDCs that have RDMs, and the
2 negative outlook that they are likely to have for NGDCs that do not have an
3 RDM, it becomes increasingly difficult for an NGDC without an RDM to
4 promote conservation efforts of its customers since it is so clearly against their
5 financial interest.

6 There is a growing recognition of the need to eliminate a utility's
7 disincentive to promote energy efficiency. The question is will the
8 Commonwealth of Pennsylvania provide regulatory changes that will
9 contribute to the removal of utility disincentives to promote energy efficiency
10 so that the benefits of energy efficiency can be achieved or will they stand on
11 the sidelines and hope to free ride on the efforts of other jurisdictions.

12 Substantial efforts are being made by other regulatory agencies to address
13 these issues. In addition to the New York State proceeding and the National
14 Action Plan for Energy Efficiency directly referenced in my direct testimony
15 and rebuttal testimony actions to address energy efficiency issues (including
16 the disincentive currently in utility rates) include: the Midwest Natural Gas
17 Initiative,¹ California, Maryland, Oregon, and North Carolina.

18 Q. Please comment on the assertion of the OTS witness Kubas and OCA witness
19 Galligan that the Company's EEE proposal is unfair to certain categories of
20 customers.

21 A. The OCA and OTS witnesses assert for numerous reasons that the EEE Rider
22 is unfair to customers. Their basic complaint is that customers that do not

¹ www.mwnaturalgas.org

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 conserve will unfairly have their bills increase because of the EEE Rider. The
2 impact of the EEE Rider on customers that do not change their usage when the
3 average decline in consumption of the customers in their rate classification
4 was 5% was provided in my supplemental testimony. Exhibit 19-S, Schedule
5 1, page 4 provided this summary for the residential rate schedule. As can be
6 seen from Exhibit 19-S, Schedule 1, page 4 under this scenario the average
7 customer that does not change their consumption would see an additional EEE
8 charge of \$4.34 as part of an annual total bill of \$1,839.56. This represented a
9 total annual percentage bill increase of 0.23%.

10 Of course, the EEE charge would only apply if the average usage per
11 account for the customer class declined by 5%. As also stated in my direct
12 and supplemental direct testimony, while there will be a bill increase for
13 customers that do not conserve under this scenario, to the extent that
14 conservation has a downward impact on the overall demand for natural gas,
15 the customer that does not reduce their usage will benefit from the reduced
16 market price of natural gas achieved through conservation efforts of other
17 customers.

18 Q. OCA witness Galligan, OSBA witness Knecht, and OTS witness Kubas all
19 claim that the Company's proposed EEE Rider is "single issue" rate making
20 and, therefore, the Company's EEE proposal should be rejected. Do their
21 claims of single issue rate making have merit?

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meini

1 A. No, their claims of single issue ratemaking do not have merit. They claim that
2 the declining usage per account is similar to the other cost elements utilized to
3 establish rates. The decline in usage per account is not, however, like any
4 other cost element. The decline in usage per account is not like other cost
5 elements such as labor costs, office supply expenses, and materials expenses
6 where the Company's actions to more efficiently manage its system where
7 appropriate and consistent with the safe operation of the system could result in
8 cost savings that would accrue to the benefit of the Company. The
9 Company's conservation promotion efforts would lead to declining usage per
10 account and would harm the Company's financial position. In other words the
11 usage per account issue is different from other cost elements in a rate case
12 because the incentive to promote conservation is contrary to the financial
13 interest of the Company. For other cost elements the interest of the Company
14 and ratepayers is aligned, efficiencies in operations will accrue to the financial
15 benefit of the Company between rate cases and forgo the need for future rate
16 increases, which accrues to the benefit of customers. This is not the case for
17 the promotion of customer conservation by the Company, where the Company
18 is harmed from promoting conservation and energy efficiency on the part of
19 customers and customers gain through the lower bills relating to reduced
20 consumption and the benefit of lower commodity prices due to overall
21 decreased market demand.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 Q. OCA witness Galligan and OSBA witness Knecht claim that there is a
2 potential mismatch of the timing of the weather effects due to the timing of
3 the effective date of a potential EEE Rider charge (Direct Testimony of OCA
4 witness Galligan page 35 and Direct Testimony of OSBA witness Knecht
5 page 53). Should this be a reason to reject the proposal?

6 A. No. Their concern over the timing of effective dates of potential EEE charges
7 is overblown. Both the OCA and OSBA witness are concerned that a
8 surcharge under the proposed EEE Rider due to warmer than normal
9 temperatures during the previous year's winter could be in effect during a
10 winter that turns out to be colder than normal, thus increasing the customers
11 winter bills.

12 While this could occur under the Company's proposed EEE Rider, the
13 impact on a customer's bill of any EEE Rider rate, as demonstrated on Exhibit
14 19-S Schedule 1, page 4 will be minimal under proposed rates. If the
15 Commission is concerned over this potential timing issue, there is an easy
16 remedy. The Company could, based on forecasted weather, suspend the EEE
17 Rider charge for months that are forecasted to be colder than normal. The
18 Company would defer the revenues it would have collected during this colder
19 than normal period and off-set any required refund due to the increased
20 consumption associated with the colder than normal weather with the
21 unrecovered surcharge that would have otherwise been in effect. This is a

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meinel

1 simple solution to their concern that would also have the potential of
2 stabilizing any EEE charge from year to year.

3 Q. OTS witness Kubas proposes that if the EEE Rider is approved that: (1) it be
4 based on normalized weather, (2) the Commission should impose a three year-
5 stayout presumably for filing a rate case, and (3) the ROE allowed in this case
6 be reduced to reflect reduced risks (Direct Testimony of OTS witness Kubas
7 pg. 61). Please comment on this proposal.

8 A. The first and third of these three proposals were addressed in my direct
9 testimony. The reason that the Company proposed that the EEE charge be
10 based on actual weather continues to have merit and nothing provided in the
11 OTS's testimony addresses the significant mitigation effects of having the
12 EEE Rider based on actual weather. However, as stated in my direct
13 testimony, the Company would not oppose implementing a EEE Rider based
14 on weather normalized volumes if the Commission so determined.

15 Staff's second proposal that the Commission impose a three-year stay-out
16 has no merit. The Company cannot be precluded from filing a base rate case
17 if its rates are anticipated to be too low for it to have a reasonable opportunity
18 to achieve a just and reasonable return for its investment. There are many cost
19 elements that could change from year to year including costs of capital and
20 other system costs needed to maintain safe and adequate service.

21 Regarding the third proposal, the ROE in this case need not be reduced to
22 reflect reduced risks since a number of Companies in the barometer group do

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 have RDM mechanisms and the impact of RDMs would be reflected in the
2 Company's analysis of a fair rate of return.

3 Q. OTS witness Kubas, OCA witness Galligan, and OSBA witness Knecht
4 oppose the Company's proposed seasonalization of PGDC rates. Please
5 summarize the reason for this opposition.

6 A. There are a number of reasons that the witnesses for the OCA, OTS, and
7 OSBA oppose the Company's proposed seasonal recovery of purchased gas
8 demand charges ("PGDC"), including:

- 9 (1) PGDCs are used and charged throughout the year (Direct
10 Testimony of OTS witness Kubas pgs. 52 & 53, Direct Testimony
11 of OCA witness Galligan pg. 52, Direct testimony of OSBA
12 witness Knecht pg. 57)
- 13 (2) Recovering PGDCs in the winter period exclusively is detrimental
14 to heating customers (Direct Testimony of OTS witness Kubas
15 pgs. 52 & 53)
- 16 (3) The proposal would shift costs within classes and between classes
17 (Direct Testimony of OTS witness Kubas pgs. 52 & 53), and
- 18 (4) The proposal could cause high load factor customers to return to
19 sales service (Direct Testimony of OSBA witness Knecht pg. 57).

20 As will be explained none of these reasons has merit.

21 While it is true that pipelines will bill its LDC customers for contracted
22 pipeline capacity on a monthly basis, an LDC must contract for sufficient

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 pipeline and storage delivery capacity to meet the peak daily demand
2 requirements of its system and that peak daily demand that needs to be
3 planned for will indisputably occur during a winter month on the NFGDC
4 system. Since the peak demand will occur in the winter, sufficient pipeline
5 capacity must be reserved to meet this demand. How a pipeline is required to
6 bill its NGDC customers for such pipeline reservation costs by the FERC has
7 no bearing on the need for the LDC to contract for sufficient firm (non-
8 interruptible) pipeline capacity to meet this demand.

9 An LDC contracts for storage capacity in part to take advantage of the fact
10 that due to the peak winter requirements on its system it is efficient and more
11 cost effective to utilize the portion of contracted capacity not used during the
12 non-winter season to fill storage for the winter. The OSBA recognized this
13 fact when it saw the merit in recovering storage/load balancing costs from
14 winter volumes (Direct Testimony of OSBA witness Knecht, pg. 58). There
15 is no reason, however, to reject the Company's proposal to recover its PGDC
16 charges on a seasonal basis as the OCA, OTS, and OSBA witnesses request
17 because the Company happens to meet a portion of its non-winter
18 requirements through the capacity that it must contract for to meet its peak
19 winter requirements.

20 Clearly all pipeline capacity and storage capacity is utilized to meet peak
21 winter demands that can be placed on the system. Just because a portion of
22 this pipeline capacity can also be used to meet the non-winter demands placed

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 on the system is no reason to reject the Company's seasonal PGDC rate
2 proposal.

3 Q. Have you addressed the concerns of OTS witness Kubas relating to the effect
4 of the seasonal PGDC proposal on heating customers?

5 A. Yes. As explained in my Direct Testimony (Statement No. 11, Pg. 27, Line 7)
6 the proposal to redesign the non-gas cost rates charged through the natural gas
7 distribution rates largely mitigates the impact of recovering PGDC costs on a
8 seasonal basis. As explained further in my Direct Testimony (Statement No.
9 11, Pgs. 26 & 27), the seasonal PGDC proposal as well as the redesign of the
10 non-gas cost rates is more consistent with cost causation and properly
11 recovers fixed costs through a more stable cost recovery rate and recovers
12 avoidable purchase gas cost rates through a rate that customers that conserve
13 gas during the winter will achieve the greatest benefit from that conservation.
14 This more appropriate cost recovery dynamic also addresses the concerns of
15 the OTS regarding cost impacts within and between classes.

16 Q. What about OSBA witness Knecht's concern that high load factor customers
17 will have an incentive to shift back to sales service because of the proposed
18 seasonal PGDC rates?

19 A. This concern is baseless for a number of reasons. First, large volume high
20 load factor transportation customers, under the Company's transportation
21 service tariff have revoked their right to return to firm sales service if
22 sufficient pipeline capacity is unavailable to serve them. Since the Company

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 has contracted for pipeline capacity sufficient to meet the current requirements
2 of its sales customers and balancing needs only of monthly metered
3 transportation customers, large volume high load factor customers could only
4 be served if the Company was able to contract for additional pipeline capacity.
5 There is no guarantee that the Company could obtain such additional pipeline
6 capacity to meet the needs of high load factor large volume customers.

7 Also, it is likely that high load factor transportation customers are
8 purchasing Appalachian production connected directly to NFGDC or NFGSC
9 thereby already avoiding the majority of upstream pipeline demand costs. If
10 this is the case the large volume high load factor customer would likely see no
11 benefit to switching back to Company sales service as OSBA witness Knecht
12 claims.

13 Q. OTS witness Kubas, OCA witness Galligan, and OSBA witness Knecht also
14 oppose the Company's proposed rate redesign that recovers most of the
15 Company's non-gas costs from the first block rate of residential and
16 commercial and public authority customers and reduces the tailblock rate for
17 these rate classifications. Please comment on their proposals.

18 A. The OCA and OTS witnesses focus their arguments against the proposed rate
19 redesign on residential services while the OSBA witness's testimony focuses
20 on the commercial and public authority rates.

21 OTS witness Kubas's primary concern is on the impact on lower usage
22 customers and the belief that tailblock rates should not be decreased when

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 others are being increased (Direct Testimony of OTS witness Kubas, pg. 25).
2 OTS witness Kubas at least implicitly agrees with the concept that first block
3 rates should be increased relative to the tailblock rate since he proposes to
4 recover a portion of the revenue increase allocated to the residential class from
5 the first block rate while holding the tailblock rate constant (Direct Testimony
6 of OTS witness Kubas, pg. 27).

7 The OCA is concerned that there is no cost basis for the Company's
8 proposal and that the winter recovery of non-gas costs would be reduced.
9 (Direct Testimony of OCA witness Galligan, pgs. 29 & 30)

10 Contrary to the OCA's assertion, the Company provided ample cost basis
11 for its proposed rate redesign. The Company's proposal is the only proposal
12 that recognized that the non-gas costs are predominately fixed costs and that
13 the Company's rate redesign appropriately recovers such non-gas costs on a
14 more consistent fixed cost basis.

15 It is interesting that the OTS and OCA witnesses completely ignore the
16 evidence presented in this case that the higher usage residential customers
17 tend to come from lower income zip codes in the Company's service territory
18 and the Company's proposed rate design changes would benefit these
19 customers. By recovering more costs from the tailblock rates of residential
20 service, higher usage low income customers would be recovering more costs
21 than lower usage higher income customers.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meinel

1 As the OTS witness Kubas recognizes customers are concerned about their
2 overall bill and not the components of that bill. (Direct Testimony of OTS
3 witness Kubas pg 66). The impact on the customers' bill from both the
4 seasonal PGDC cost recovery and the proposed non-gas cost rate redesign
5 were provided on Exhibit No. 19, Schedule 7. As was explained in my direct
6 testimony the proposed non-gas cost rate redesign mitigates to a large degree
7 the impact of the seasonal PGDC cost recovery on customer rate. Since both
8 the non-gas cost rate redesign and seasonal PGDC rate proposal are more
9 consistent with cost causation and applying the two proposed charges in
10 tandem will tend to negate any disproportionate impact on a customer's
11 monthly bill the Company's proposal should be accepted. The proposal is
12 also consistent with promoting conservation efforts since it properly reflects
13 the higher price of natural gas during the winter period thereby giving
14 customers pricing signals to conserve natural gas.

15 Q. What are the positions of the parties in this proceeding regarding the
16 Company's MFC and POR proposals?

17 A. OTS witness Markovich, OSBA witness Knecht and OCA witness Alexander
18 present a number of concerns regarding the Company's proposal for an MFC
19 and POR program (Direct Testimony of OTS witness Markovich pgs. 31-38,
20 Direct Testimony of OSBA witness Knecht pgs. 53-57, and Direct Testimony
21 of OCA witness Alexander pgs. 2-15).

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 These witnesses provide a number of concerns regarding the Company's
2 proposal both on a practical implementation as well as legal issues.

3 As stated in my Direct Testimony (Statement No. 11 pgs 34-35) the
4 Company proposed the MFC and POR to test certain initiatives to enhance the
5 potential for NGS competition on its system. I also recognized that the
6 Commission has instituted a generic investigation reviewing the state of
7 competition in the NGS market.² It is clear from the position of the parties in
8 this case that there is not any consensus on the Company's proposed MFC and
9 POR program. Further, the parties have brought up issues that are best to be
10 addressed, at least initially, through a thorough generic Commission
11 proceeding. Since these issues are currently under review generically, and
12 these issues would likely receive a more focused review in the generic
13 proceeding, the Company is withdrawing its proposal to implement an MFC
14 and POR program in this rate proceeding.

15 Q. OTS witness Farley attempts to compare the complaints received in the PPL
16 and PG Energy rate filings with those received in the Company's current rate
17 proceeding. Is it reasonable to compare the PPL and PG Energy customer
18 interest in the rate proceedings with the Company's rate proceeding?

19 A. No it is not for the simple reason that the service territories are significantly
20 different as it relates to the household heating fuel used by homes in the
21 counties that these three LDCs serve. Table 1, provides this summary.

² *Investigation into the Natural Gas Supply Market: Report to the General Assembly On Competition In Pennsylvania's Retail Natural Gas Supply Market*, Investigatory Order and Report to the General Assembly, Order entered October 6, 2005 at Docket No. I-00040103.

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meinl

	NFGDC Counties	PPL Counties	PG Energy Counties
Utility Gas	69.3	28.7	34.0
Propane	5.1	4.0	4.9
Electricity	7.8	23.2	18.1
Heating Oil	13.1	37.9	36.3
Other	4.7	6.1	6.7

1 As can be seen from this table the PPL and PG Energy counties have a
2 significantly lower percentage of homes heated with utility provided natural
3 gas supplies. Therefore, it is unlikely that overall household interest in the
4 media markets that serve either PPL or PG Energy would be as intense as in
5 the Company's service territory. In other words household interest, and
6 associated media attention, are much more likely to be focused equally
7 between natural gas pricing, heating oil, and electricity in the PPL and PG
8 Energy service territory. Since most households in NFGDCs service territory
9 use utility provided natural gas to heat their homes, customer interest and
10 correspondingly media attention on the rate filings of the Company are likely
11 to be more intense than in other utility service territories in the
12 Commonwealth.

13 Finally, the Company proposed innovative and timely concepts that
14 naturally attracted the attention of customers and the media within its service
15 territory. One would expect that whenever new and innovative rate proposals

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 are being proposed customer and media interest would be increased. For
2 example, this occurred in the Company's Mercer County service territory in
3 the late 1990's when the Company tested whether it could exit the merchant
4 function.

5 Q. OTS Witness Deardorff claims that your recommendation that the Company
6 receive the high end of the range recommended by Mr. Hanley is
7 inappropriate since you did not demonstrate the Company's management is
8 more efficiently and economically operated than the companies in Mr.
9 Hanley's barometer group (Direct Testimony of OTS witness Deardorff, pg
10 35). Is this a valid reason to reject your recommendation?

11 A. No, OTS witness Deardorff's recommendation is not valid. It is appropriate
12 that the Company be provided the higher level of Mr.' Hanley's suggested
13 ROE range for the reasons that I stated in my direct testimony. It is
14 interesting to note that no witness has challenged the validity of the
15 information provided as support for that conclusion. Instead, OTS witness
16 Deardorff criticizes the Company for not demonstrating superior performance
17 to the proxy group. OTS witness Deardorff misses the mark with his
18 recommendation. The range developed by Mr. Hanley was based in part on
19 the average of the proxy group results. It is in effect the range for a
20 reasonable return for the average natural gas distribution company. It is not
21 the range for a superior performing natural gas distribution company. If the
22 Company could demonstrate that its performance was superior to the

National Fuel Gas Distribution Corporation
Rebuttal Testimony of Eric H. Meisl

1 performance of all of the proxy group companies, the Company would be
2 entitled to an ROE above the maximum range for the average natural gas
3 distribution company recommended by Mr. Hanley.

4 Q. Does this complete your rebuttal testimony?

5 A. Yes, at this time.

STATEMENT OF AGREEMENT

NYPSC Case 03-E-0640 and Case 06-G-0746

Electric and Natural Gas Distribution Cost Recovery -- Aligning
Interests of Shareholders and Customers

September 8, 2006

We the undersigned signatories wish to emphasize our agreement on a crucial challenge facing electric and natural gas distribution utilities, their customers, and the regulators with regards to provision of reliable, clean and affordable energy needed for a growing New York economy.

Current regulatory policy distorts distribution utility decision-making by linking their financial health to the amount of natural gas and electricity distributed over the pipes and wires. This results in revenues and profits being reduced when customers or distribution utilities invest in energy efficiency or clean on-site generation. Under the current regulatory system, there is little incentive for distribution utilities to encourage energy efficiency as a method of minimizing long-term cost of providing reliable distribution service.

The right regulatory response to this challenge should include two key elements. First, in order to eliminate financial disincentive utilities have towards distributed resources (such as energy efficiency policies and programs, combined heat and power, micro-turbines, fuel cells, photovoltaics, wind, anaerobic digesters, and thermal storage fuel switching to steam or natural gas chillers), regulators should ensure that distribution utilities' cost recovery is independent of total electricity or natural gas delivered and accomplished through modest, regular adjustments in rates (kWh rates for electricity). Second, distribution companies should be financially rewarded for lowering their long-term costs through an incentive mechanism that equitably shares gains with shareholders.

With these changes, and continuation of the successful System Benefits Charge programs, distribution utilities will be free to invest in resources that provide the best possible long-term results for their systems, in both economic and environmental respects; and regulators can align the interest of distribution utility shareholders and the state's interest in promoting energy efficiency and other clean distributed resources to minimize costs of delivering electricity and natural gas to customers.

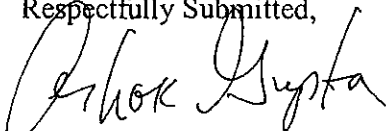
SIGNATORIES IN SUPPORT *(after 8/28/06 in italics)*

1. Aircogen CHP Solutions, Inc. (Jim Tuller)
2. Albanese Organization (Russell Albanese)
3. Alliance for Clean Energy New York (Carol Murphy)
4. Alternative Energy Task Force of Wayne County (Terry Van Stean)
5. altPOWER (Anthony Pereira)
6. *American Council for an Energy Efficient Economy (Steve Nadel)*
7. *American Lung Association of New York State (Peter Iwanowicz)*
8. *American Wind Energy Association (Randy Swisher)*
9. *Appliance Standards Awareness Project (Andrew deLaski)*

10. *Assemblyman Michael Gianaris*
11. Association for Energy Affordability (David Hepinstall)
12. The Association of Energy Engineers-New York (John Nettleton)
13. Attorney General Eliot Spitzer*
14. Battery Park City Authority (James Cavanaugh)
15. Bergey Windpower Co. (Mike Bergey)
16. Building Owners and Managers Assn. of Greater NY, Inc. (Roberta McGowan)**
17. CALMAC Mfg. Corp. (Mark M. MacCracken)
18. *Carrier (John Mandyck)*
19. Community Energy (Brent Beerly)
20. Conservation Services Group (Steve Cowell)
21. Consumer Powerline (Michael Gordon)
22. Cook+Fox Architects (Bob Fox)
23. Delaney Construction Corporation (Kimberly Sabey)
24. The Durst Organization (Douglas Durst)
25. Earth Pledge (Leslie Hoffman)
26. Ecogen Wind (Thomas Hagner)
27. *Emerald Power Corporation (Robert Mahony)*
28. *Energy Innovations (Steve Chadima)*
29. Energy Management and Research Associates (Fred Goldner)
30. Energy Now! Inc. (Tom Thompson)
31. EnergySolve Companies (Don Liebowitz)
32. Energy Spectrum, Inc. (David Ahrens)
33. Environmental Advocates of New York (David Gahl)
34. *Evergreen Solar (Mark Farber)*
35. *EverPower Renewables (Jim Spencer)*
36. FuelCell Energy, Inc. (John A. Franceschina)
37. Hudson Riverkeeper (Alex Matthiessen)
38. *Janno Lieber – Silverstein Properties****
39. Komanoff Energy Associates (Charles Komanoff)
40. *Long Island Power Authority (Richard Kessel)*
41. Metro Energy Solutions (Joe Santaiti)
42. *National Association of Energy Service Companies (Terry Singer)*
43. Natural Resources Defense Council (Ashok Gupta and Katherine Kennedy)*
44. New Civic Works (Hillary Brown)
45. New York City Apollo Alliance (Joanne Derwin)
46. *New York City Council Speaker Christine C. Quinn*
47. *NYC Councilmember and Environment Committee Chair James F. Gennaro*
48. NYC Economic Development Corporation (Gil Quiniones)*
49. New York Energy Consumers Council, Inc. (David Bomke)*
50. New York Industrial Retention Network (Adam Friedman)
51. New York League of Conservation Voters (Marcia Bystryn)
52. New York Power Authority (Timothy Carey)*
53. New York Public Interest Research Group (Jason Babbie)
54. New York State Apollo Alliance (Chris Ballantyne)
55. *New York State Consumer Protection Board (Doug Elfner)**

56. New York Solar Energy Industries Association (Christine Donovan)
57. New York State Energy Research and Development Authority (Peter Smith)*
58. Northeast Energy Efficiency Partnerships (Sue Coakley and Jim O'Reilly)
59. Office Power LLC (Robert Jannino)
60. Optimal Energy (Eric Belliveau)
61. Pace Energy Project (Fred Zalcman)*
62. *Partnership for New York City (Kathryn Wylde and Patty Noonan)*
63. Plug Power (Rudy Stegmoeller)
64. PowerHouse Energy, LLC (James Pfeiffer)
65. *PowerLight (Kari Smith)*
66. PPM Energy (Kevin Lynch)
67. PV Now (David Hochschild)
68. Real Estate Board of New York (Marolyn Davenport)**
69. Renewable Energy Long Island (Gordian Raacke)
70. Rose and Companies (Jonathan Rose)
71. *Schott Solar (Mark Roper)*
72. Self-Gen Inc. (John Kerry)
73. Sharp Solar Energy Solutions Group (Chris O'Brien and Ed Smeloff)
74. Sierra Club – Atlantic Chapter (John Stouffer)
75. *SolarWorld (David Wallerstein)*
76. *SunEdison (Chris Cook)*
77. *SunPower (Julie Blunden)*
78. Sustainable Energy Solutions (Cameron Carey)
79. Symbiotic Strategies, LLC (Kenneth A. Colburn)
80. Tishman Construction Corporation (Dan Tishman)
81. *Trane NY/NJ (Rich Halley)*
82. Turbosteam Corporation (Sean Casten)
83. TVC Systems (Nels Tyring)
84. U.S. Green Building Council – New York (Sally Siddiqi)
85. U.S. Power Generating Company (Liam Baker)
86. UTC Power (Jan Van Dokkum and Michael Brown)
87. Verdant Power (Ron Smith)
88. Winergy Power LLC (Chris Wissemann)
89. *W&M Properties (Tony Malkin and Tom Durels)*

Respectfully Submitted,



Ashok Gupta

Natural Resources Defense Council
(on behalf of the signatories listed above)

* separate comments also being filed

** will follow closely the implementation details as proceeding progresses

***affiliation provided for identification purposes only



National Action Plan for Energy Efficiency

A PLAN DEVELOPED BY MORE THAN 50 LEADING
ORGANIZATIONS IN PURSUIT OF ENERGY SAVINGS
AND ENVIRONMENTAL BENEFITS THROUGH
ELECTRIC AND NATURAL GAS ENERGY EFFICIENCY

JULY 2006

The National Action Plan for Energy Efficiency

To drive a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities, utility regulators, and partner organizations, more than 50 leading organizations joined together to develop this National Action Plan for Energy Efficiency. The Leadership Group members (Table 1-2) have developed this National Action Plan for Energy Efficiency Report, which:

- Reviews the barriers limiting greater investment in energy efficiency by gas and electric utilities and partner organizations.
- Presents sound business strategies that are available to overcome these barriers.
- Documents a set of business cases showing the impacts on key stakeholders as utilities under different circumstances increase energy efficiency programs.
- Presents best practices for energy efficiency program design and operation.
- Presents policy recommendations and options for spurring greater investment in energy efficiency by utilities and energy consumers.

The report chapters address four main policy and program areas (see Figure 1-3):

- *Utility Ratemaking and Revenue Requirements.* Lost sales from the expanded use of energy efficiency have a negative effect on the financial performance of electric and natural gas utilities, particularly those that are investor-owned under conventional regulation. Cost-recovery strategies have been designed and implemented to successfully "decouple" utility financial health from electricity sales volumes to remove financial disincentives to energy efficiency, and incentives have been developed and implemented to make energy efficiency investments as financially rewarding as capital investments.

The goal of the National Action Plan for Energy Efficiency is to create a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities, utility regulators, and partner organizations.

The Leadership Group:

- Recognizes that utilities and regulators have critical roles in creating and delivering energy efficiency programs to their communities.
- Recognizes that success requires the joint efforts of the customer, utility, regulator, and partner organizations.
- Will work across their spheres of influence to remove barriers to energy efficiency.
- Commits to take action within their own organization to increase attention and investment in energy efficiency.

Leadership Group Recommendations:

- Recognize energy efficiency as a high-priority energy resource.
- Make a strong, long-term commitment to implement cost-effective energy efficiency as a resource.
- Broadly communicate the benefits of and opportunities for energy efficiency.
- Promote sufficient, timely, and stable program funding to deliver energy efficiency where cost-effective.
- Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments.

June 2006

Contact Phone

New YorkEdward Tan
Mihoko Manabe
John Diaz

1.212.553.1653

Local Gas Distribution Companies: Update on Revenue Decoupling And Implications for Credit Ratings

Summary Opinion

- With natural gas prices expected to remain at high levels, local gas distribution companies (LDCs) face earnings and cash flow pressures as their customers increase conservation efforts. In addition, bad debt expense has increased as more customers face increasing difficulties in paying their bills. Furthermore, LDC volumes remain subject to weather conditions.
- Moody's analyzed its gas LDCs (local distribution companies) and notes that weather normalized winter gas consumption in per customer usage has declined at an increased pace since 2003. This decline coincides with a period of steadily rising natural gas prices for the LDCs and steadily falling heating degree days.
- Had gross margins (gas revenues less cost of gas and associated gas taxes) been fully protected against gas consumption declines on account of customer conservation during the past five winters, they would have been higher by an average of \$5.2 million in 2004 and \$4.6 million in 2005. One company would have increased its profits by \$18.3 and \$11.6 million in those two years (3% and 2% of gas margins, respectively).
- Bad debt expense has shown a steady average increase in each of the past four winters, tracking the increase in natural gas prices during the same period.
- Despite the general increase in working capital and natural gas prices, LDC short-term debt has remained relatively flat from 2003-2005.
- Except for a handful of jurisdictions that employ full revenue decoupling (RD) through a mechanism akin to "balancing accounts" (California, Maryland and North Carolina), most companies prefer to keep the weather normalization clause (WNC) rate design separate from the conservation margin tracker.
- While some jurisdictions permit the application for RD to be requested outside the procedural norms of a full rate case, most would prefer a full rate case or rate review.
- LDCs pursuing a full or partial RD feel that it is an important aspect of their rate design requirements and most companies indicated that they would continue filing for it until their regulators gave final approval.
- Moody's observes that in the face of volatile natural gas prices, volatile weather patterns and other exogenous forces that would prompt gas customers to curtail gas consumption volumes from their utilities, LDC earnings and credit metrics will come under pressure.
- LDCs that have, or soon expect to have, RD stand a better chance than others in being able to maintain their credit ratings or stabilize their credit outlook in face of adversity. This difference between those companies that have RD and those that do not will tend to be further accentuated as the credit demarcation reflected through rating actions becomes more evident.



Introduction

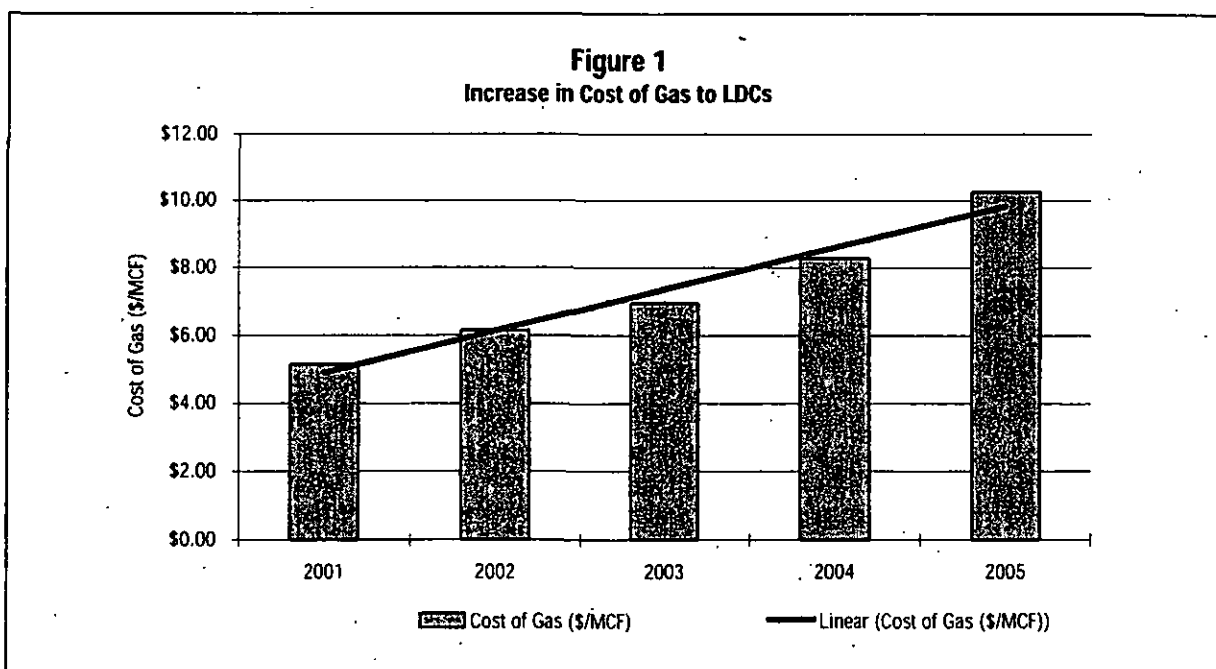
At this time last year, Moody's published its first study dedicated to the question of gas conservation and its impact on gas LDC earnings and credit ratings (see Moody's June 2005 Special Comment titled *Impact of Conservation on Gas Margins and Financial Stability in The Gas LDC Sector*). We found that while many companies were aware of the conservation factor and 18 of the 34 gas LDCs followed by Moody's could quantify the loss in their per customer volume consumption, only a handful of companies had taken the step to incorporate it into their rate design so that their gross margins would be unaffected. Last year we also discussed how three companies were approaching this rate design feature through slightly different decoupling mechanisms. While the approach may be different, the concept and end result are not. Companies in the gas utility business are increasingly interested in not only protecting themselves against gross margin variations caused by customer conservation (partial decoupling), but also by weather variations (full decoupling).

In keeping with the evolving convention, we will refer to these mechanisms as revenue decoupling (RD) in general terms and to "partial decoupling" to mean rate design protection for conservation or "full decoupling" to mean rate design protection for both conservation and weather variations. When a company only has weather normalization clause protection, we refer to the rate design as WNC. Fewer companies have conservation rate design protection without also having WNC as permanent features of their ratemaking.

As with our previous study, we define "conservation" as any technical advancement that improves home heating or gas appliance efficiencies as well as the curtailment of consumption on account of high gas commodity prices. Twenty three of the 34 gas LDCs followed by Moody's responded to various questions posed by Moody's and their results have been tabulated and presented in this paper in aggregate form in order to protect the confidentiality of information submitted.

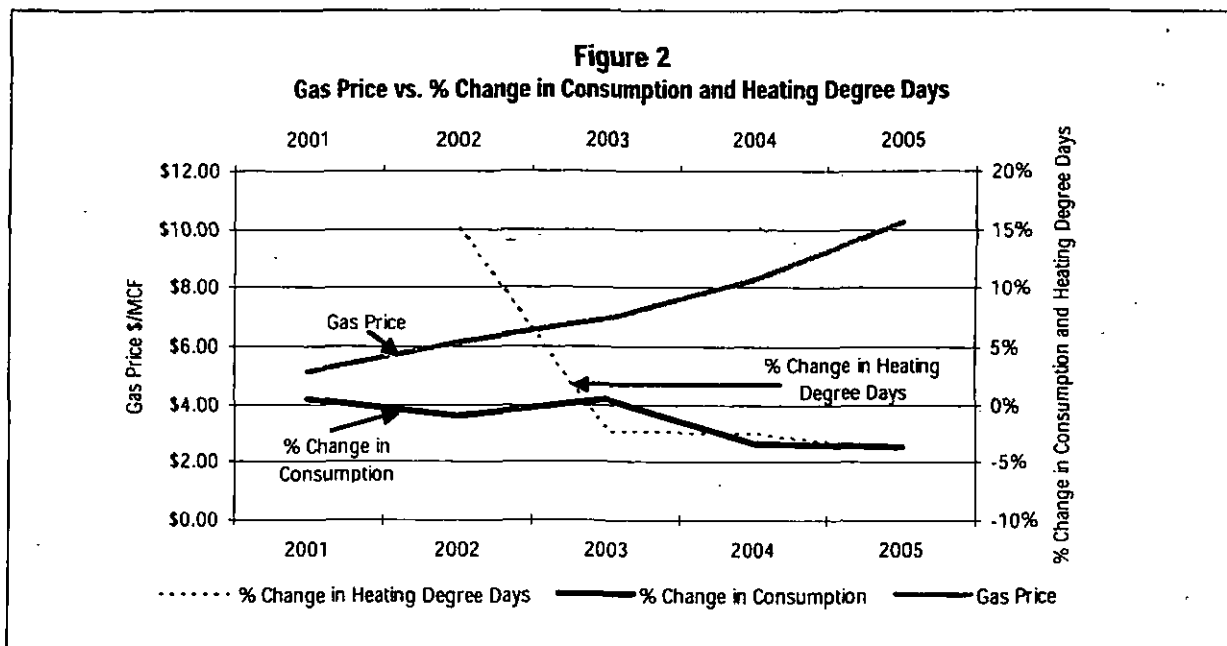
Nationwide Trend of Rising Gas Prices and Falling Heating Degree Days

Companies overall responded that they were experiencing rising natural gas prices during the past five winter heating seasons, with their average gas purchase prices depicted in the graph below and labeled Increase in Cost of Gas (Fig.1). Natural gas prices rose by a compounded average growth rate of 17% during this period, with the sharpest rise occurring in the winter of 2005 (most recent winter heating season) where it registered an average price increase of 24% over 2004. The highest price recorded by an LDC during this past winter was \$13.31/mcf and lowest \$6.73/mcf with \$10.70 being the median. While only half the respondents provided natural gas price estimates for 2006, those that did resulted in an average price of \$10.71/mcf with \$13.87/mcf being the highest, \$8.61/mcf being the lowest and \$10.59/mcf being the median. Most LDCs expect future natural gas prices to moderate, but the trend is still in an upwards direction and this has been found to be the prime driver for the conservation factor on the part of customers.



The other noticeable trend is that of falling heating degree days since the winter of 2002 among the responding LDCs. On average, the winter of 2002 appears to have been a fairly cold winter, but the number of heating degree days has since fallen by an average of 3-5% in each of the winter heating seasons since that year. LDCs lacking a WNC or full decoupling mechanism would have suffered in their gas consumption and gross margins when faced with the strong combination of warmer than normal winters and declining gas consumption on account of customer conservation.

Finally, except for a period in 2003 when the average customer consumption increased by .5%, the per customer consumption for residential and commercial users has fallen by 3-4% in each of the last two winter heating seasons on a weather normalized basis, representing that portion of loss in gas consumption resulting from conservation. Changes in gas prices are plotted against percentage changes in per customer consumption and heating degree days in Fig. 2. We note that while the change in per customer consumption on account of conservation has been declining since the 2003 winter heating season at a rate of 3-4% p.a., gas prices have continued to rise much more rapidly.



The winter of 2005 saw the most dramatic rise in both natural gas prices and also per customer gas consumption decline on account of conservation (4% average decline). The weather normalized consumption decline for the last winter ranges from 9.1% in the case of one LDC to a gain of 3.1% in another, as it had colder winter weather in 2005 compared with 2004. With the exception of another LDC that had no loss in consumption, all the other respondents had declines in gas consumption. Similarly, except for one LDC which experienced an increase in per customer consumption in 2004 of 1.2%, all others saw declines in per customer consumption from 2003 which ranged from -0.2% to -9.6%.

Impact of Conservation on Losses in Gross Margin

When LDCs were asked how much higher would their gross margins (gas revenues less cost of gas purchased and associated gas taxes) have been had they been fully protected against declines in gas consumption resulting from conservation, all indicated higher gross margins for the last two winter heating seasons. The average gross margins would have increased from a low of \$2.4 million in 2003 to a high of \$5.2 million in 2004, with one company indicating that they would have gained \$18.3 million in 2004 alone and \$11.6 million in 2005, where the average company stood to gain an additional \$4.6 million in gross margin.

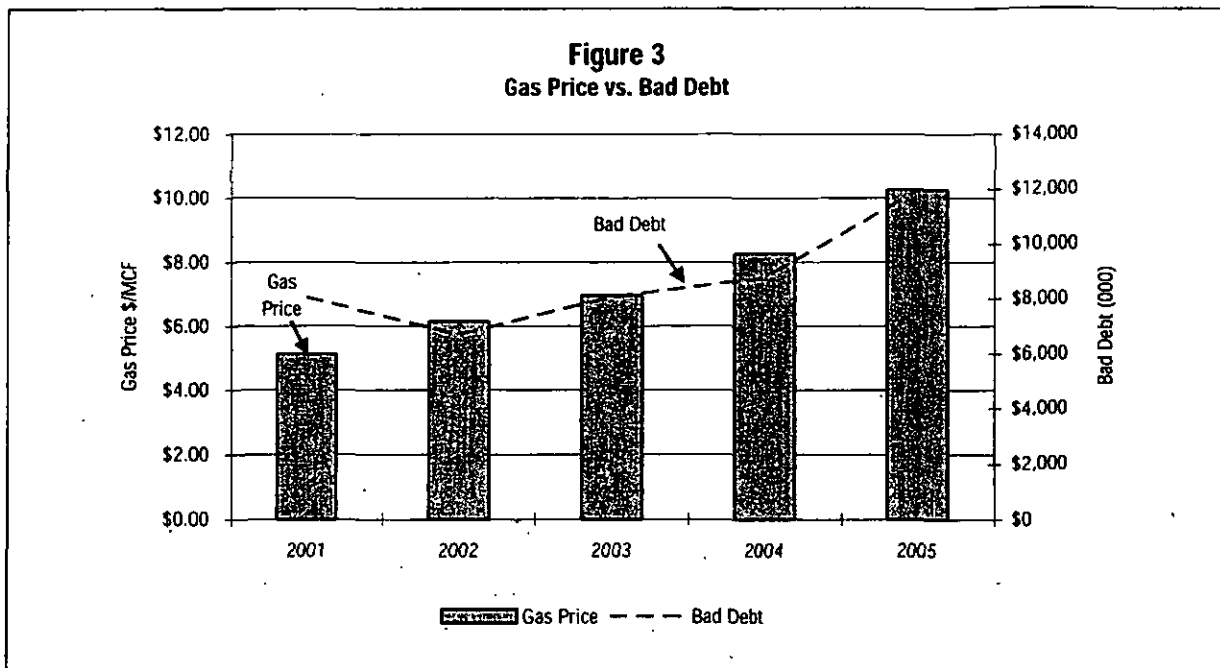
The problem of declining gross margins on account of per customer conservation is explained by the various rate filings and testimonies being offered by consultants on the subject. Symptomatic of the LDC conservation problem is

the argument for incorporating a conservation protection design. For example, Questar Gas Company believes that earning its authorized return has been very difficult due to the combination of declining average consumption over time, the use of a historical test year in general rate cases, and the fact that most of its fixed-non-fuel costs are recovered through a volumetric charge. The upshot has been revenues that in normal weather years have fallen short of their own non-gas costs---because average-customer sales in the rate-effective years fell short of the (historical) test-year figures that were used to set rates. Questar would like to decouple its non-gas revenues from year-to-year movements in the per-customer average consumption levels. The mechanics of the decoupling would employ a balancing account to recover non-gas related revenues lost/gained when average consumption drops/rises above the projected average.¹

In attempting to grapple with the conservation issue, LDCs are in fact, having to dispel the notion that their fixed charges should be recovered from volumetric sales of gas. As the fixed charges appear year in and year out regardless of gas usage, the volumetric approach to cost recovery for operating a gas distribution system is a faulty equation which needs to be rectified in ratemaking. It would appear therefore, that unless and until this anomaly is corrected, the LDC would lack the necessary tools with which to earn its allowed rate of return.

Bad Debt Expense and Increases in Working Capital

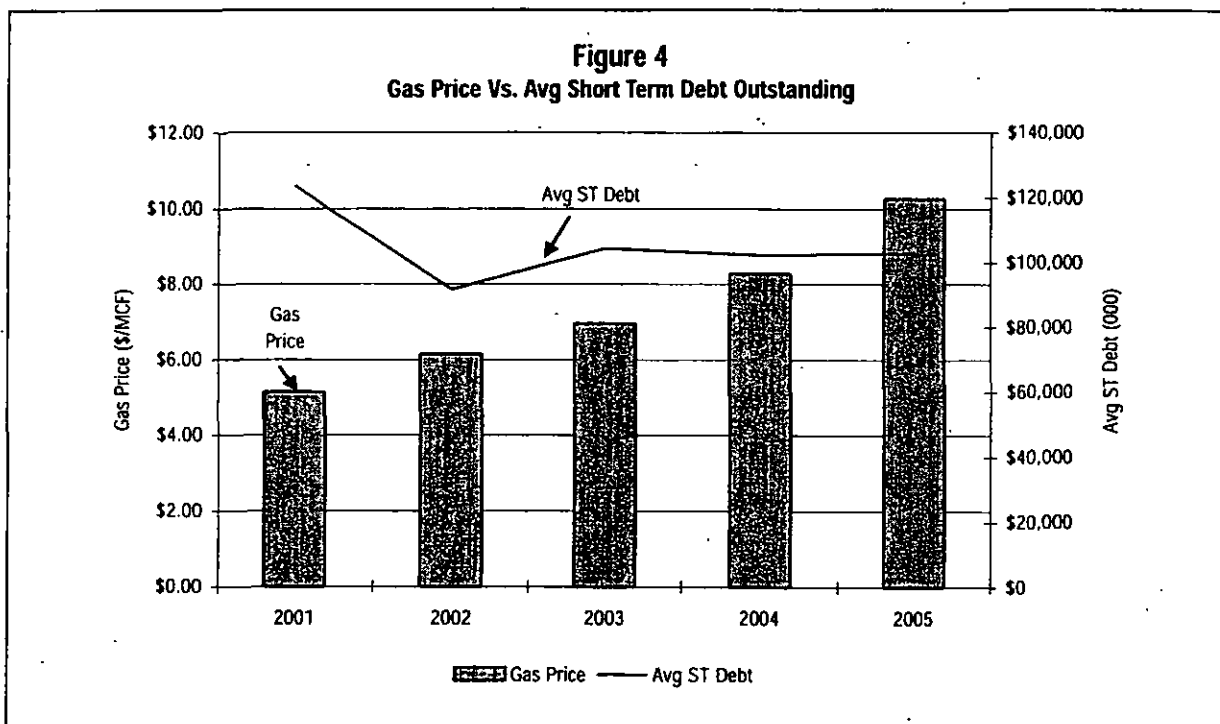
One consequence of rising natural gas prices purchased by LDCs and passed onto their customers is the higher level of bad debt expense and increases in working capital that these companies must now contend with. In the winter of 2005 for example, one LDC reported a doubling of their bad debt expense which increased by an average of 17% for all respondents. LDCs in some states such as those located in North Carolina, had the good fortune of being able to recover the gas component of bad debt expense through their purchase gas adjustment (PGA) mechanism, thereby reducing the level of bad debt expense that the company had to absorb on their own. Fig. 3 depicts the close correlation between rising average bad debt expenses and rising gas prices.



1. *Prefiled Direct Testimony of George R. Compton, Ph.D., for the Division of Public Utilities of the Utah Department of Commerce, Before the Public Service Commission of Utah, January 23, 2006, Docket No. 05-057-701*

As one would expect, with the higher level of gas commodity prices that customers had to pay and the rise in bad debt expense experienced during the past three winter heating seasons, most LDCs incurred higher levels of working capital. The winter of 2005 witnessed one of the sharpest increases in seasonal working capital on account of accounts receivables and inventory build-ups related to higher natural gas prices, rising 136% over 2004 levels among those LDCs responding to affirmative increases in working capital levels. One large LDC reported a 185% increase in their 2005 working capital level over the prior year. Some companies however, were able to match their increases in accounts receivables and inventory with accounts payable by structuring their gas purchase transactions to more closely match their gas payments for inventory and timing these closer to the anticipated cash receipts from customers, so that they had less working capital to finance.

It is also interesting to note, as depicted in Fig. 4, that on average, LDC short term debt remained relatively flat after 2003 despite the continuing rise in the cost of natural gas prices. Some companies indicated that they were deliberately refinancing short-term debt through medium term notes or through other means of long-term debt by locking in the cost of financing under favorable interest rates, while others were able to contain the increases in their 2005 working capital levels and did not need to borrow as much for their seasonal needs. In fact, approximately half the LDCs indicating having higher levels of working capital in 2005 compared with prior years were able to reduce their short-term debt levels by refinancing via long-term debt or issuance of new equity.



LDCs Take Varied Approaches in Integrating WNC with RD

It appears that LDCs that already have full RD similar to the “balancing accounts” including revenue normalization adjustments or customer utilization trackers being employed in certain jurisdictions such as California, Maryland and North Carolina, prefer to keep their rate designs intact as they are easily administered and allow for full recovery of their authorized margins. Most other companies that currently have WNC in some of their jurisdictions however, prefer to keep the conservation margin tracker or tariff separate, for the reason that their current WNC provide real time cash flow and earnings adjustments whereas the conservation trackers typically provide after-the-fact cash flow adjustments through deferral accounts that are collected over a subsequent 12-month period.

While some public utility commissions would permit the filing of RD outside the procedural norm of a full rate case, most would clearly prefer a full rate case to be filed in connection with a rate design alteration or at least to review a general rate case after-the-fact in short order. It also appears that the great majority of respondents experiencing customer gas consumption declines on account of conservation would be inclined to file and re-file for some form of RD if denied the first time by their regulators. For many, this is a long but necessary trek to take as a means of curing a rate design deficiency that appears to be increasingly untenable.

Conclusion

In our comment last year, we mentioned several LDCs that had the ability to correct for margin losses on account of conservation or weather variables through their rate design mechanisms, or had RD filing plans or extension plans. Among these, Alabama Gas Corporation (Alagasco) advises that their "rate stabilization and equalization" mechanism will continue through at least 2008 and Southern California Gas Company (SoCal Gas) appears to be satisfied with how their "balancing accounts" have been implemented previously and have requested that the regulatory commission continue with them going forward. Following the completion of an independent study to measure the effectiveness of its conservation mechanism, Northwest Natural Gas Company was able to obtain approval of the Oregon Public Utility Commission in 2005 to continue its conservation tariff for an additional four years through September 30, 2009, and increase the mechanism's coverage from a partial decoupling of 90% of residential and commercial gas usage to a full decoupling of 100%. It also maintains a separate weather normalization mechanism that was extended through September 2008.

In April of 2006, Cascade Natural Gas Corporation in Washington State obtained approval from the Oregon Public Utility Commission to implement a decoupling mechanism to track changes in margin due to conservation (variations in weather-normalized usage) and to track changes in margin due to weather variations from normal for residential and commercial customers. Cascade's RD application for Washington State is still pending.

Piedmont Natural Gas in North Carolina obtained approval for a full RD mechanism for a three-year trial period, with the state's Attorney General appealing the decision in the courts. The appeal has been initiated and the court has taken no action. In the meantime, the company has implemented the mechanism effective November 1 of 2005.

Washington Gas Light Company obtained a full RD (Revenue Normalization Adjustment) in its Maryland jurisdiction which went into effect on October 1, 2005. It has previously attempted to introduce at least partial RD in its Virginia and Washington D.C. jurisdictions.

Southwest Gas Corporation did not fare as well in its Arizona RD application where it generates 54% of its gross margin. The company's credit metrics were already weaker than its Baa utility peers and it badly needed an effective RD mechanism across all its jurisdictions to protect its gross margins. While the Arizona Corporation Commission finally granted it a partial rate increase after over one-year in the application process and brought current recent cost and customer usage factors in Arizona, it denied the company its request for RD through "balancing accounts" as it has in California. The company also lacks RD in its Nevada jurisdiction (37% of gross margins) and the company lost gross margins in 2005 when it experienced one of the 10 warmest years on record, which followed a warm 2003, one of the warmest years in over 100 years. The cumulative effects of this warmer than normal weather continued into the company's quarter ending March 31, 2006 which was mostly responsible for the company's loss of \$9 million in operating margin. Moody's took action in May 2006 to downgrade the company's senior unsecured debt to Baa3 from Baa2 where it is currently under stable outlook.

In the meantime, the list of LDCs applying for RD continues to expand with Atmos Energy Corporation attempting to add conservation riders in key jurisdictions where it already has WNC, Indiana Gas Company and Southern Indiana Gas and Electric Company (utility subsidiaries of Vectren Utility Holdings) both applying for conservation margin protection in Indiana to supplement their recently approved WNC, and Questar Gas Corporation seeking a conservation tariff in Utah. New Jersey Natural Gas and South Jersey Gas Company filed for a joint RD application in New Jersey, requesting a full decoupling mechanism. Both of these New Jersey utilities already have WNC.

Moody's believes that the LDCs successful in their RD initiatives will stand a better chance than others in protecting their gross margins and overall credit metrics from the negative impacts of increasing volatility of natural gas prices and climatic changes. Stronger margins and earnings would also serve to cushion the blows inflicted by increases in bad debt expense that tend to accompany rising gas prices. As gas customers step up their conservation efforts in response to these rising commodity prices, it will become increasingly important for LDCs to switch from a gas volumetric cost recovery methodology to one of RD. While RD may have originally begun as a regional concept in certain jurisdictions, it has quickly become a nationwide phenomenon that will challenge regulators and gas utilities alike, as they seek to correct a structural imbalance in their rate design that has become increasingly difficult to ignore.

Related Research

Special Comments:

Impact of Conservation on Gas Margins and Financial Stability in the Gas LDC Sector, June 2005 (92798)

Comparative ROE Attributes of US Local Gas Distribution Companies, July 2004 (87301)

Negative Rating Trend for Local Gas Distribution Companies: Impact of Diversifications and Warm Weather, October 2002 (76344)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

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Report Number: 98022

<u>Author</u>	<u>Editor</u>	<u>Associate Analysts</u>	<u>Senior Production Associate</u>
Edward Tan		Sharon Roberts Jacquelyn Ward	Charles Ornegri

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