

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

ORIGINAL  
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In Re: Petition of Gulf Power Company for an increase in its rates and charges. )  
 )  
 )  
 )

Docket No. 891345-EI  
Filed: April 27, 1990

DIRECT TESTIMONY OF  
JAMES A. ROTHSCHILD

- ACK \_\_\_\_\_
- AFA 3/1 *(on 14 for 15 (CPB Decided))*
- APP \_\_\_\_\_
- CABY \_\_\_\_\_
- CHM \_\_\_\_\_
- CTA 1 w/ note
- E \_\_\_\_\_
- LEA 1
- LIF 6
- OPC \_\_\_\_\_
- RCH \_\_\_\_\_
- SEC 1
- WAS \_\_\_\_\_
- OTH \_\_\_\_\_

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FPSC-RECORDS/REPORTING

1  
2 TESTIMONY OF JAMES A. ROTHSCHILD  
3 REGARDING THE COST OF CAPITAL OF  
4 GULF POWER COMPANY

5 DOCKET NO. 891345-EI

6 TABLE OF CONTENTS

	Page
I. Statement of Qualifications	1
II. Purpose of Testimony	4
III. Summary of Conclusions	5
IV. Capital Structure	8
V. Cost of Fixed Capital	9
VI. Cost of Common Equity	
A. Summary of Conclusions on Cost of Equity	10
B. Definition of Cost of Equity	10
C. Cost of Equity Computation	
1. Introduction	16
2. Description of DCF Method	18
3. Implementation of DCF Method	31
4. Comparable Earnings Observations	47
D. Financing Costs and Market Pressure	49
VII. Cost of Capital by Customer Class	52
VIII. Testimony Evaluation	60
Schedules & Appendix	

1

2 I. STATEMENT OF QUALIFICATIONS OF JAMES A. ROTHSCHILD

3

4 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

5 A. My name is James A. Rothschild and my address is 115  
6 Scarlet Oak Drive, Wilton, Connecticut 06897.

7

8 Q. WHAT IS YOUR OCCUPATION?

9 A. I am a financial consultant specializing in utility  
10 regulation. I have experience in the regulation of  
11 electric, gas, telephone, sewer, and water utilities  
12 throughout the United States.

13

14 Q. PLEASE SUMMARIZE YOUR UTILITY REGULATORY EXPERIENCE.

15 A. I am president of Rothschild Financial Consulting and  
16 have been a consultant since 1972. From 1979 through  
17 January, 1985 I was a Principal of Georgetown Consulting  
18 Group, Inc. Prior to that, from 1976 to 1979 I was the  
19 President of J. Rothschild Associates. Both of these firms  
20 specialized in utility regulation. From 1972 through 1976  
21 I was employed as a consultant at Touche Ross & Co., a "big  
22 eight" accounting firm. Much of my consulting work done  
23 while at Touche Ross related to utility regulation. While  
24 associated with all of the above firms, I have worked for  
25 various state Utility Commissions, Attorneys General, and

1 Public Advocates on matters relating to regulatory and  
2 financial issues. These included rate of return, financial  
3 issues, and accounting issues. (See Appendix.)  
4

5 Q. PLEASE DESCRIBE CONSULTING WORK YOU HAVE DONE ON NON-  
6 UTILITY MATTERS.

7 A. I consulted in the preparation of bond prospectuses for  
8 five hospitals, assisted a major European chemical company  
9 in deciding whether to acquire an American owned chemical  
10 plant, served as a consultant to a major corporation that  
11 went into a Chapter XI bankruptcy, and advised the City of  
12 New York about procedures and attendant savings related to  
13 its payroll disbursement systems.  
14

15 Q. WHAT DID YOU DO PRIOR TO BECOMING A MANAGEMENT CONSULT-  
16 ANT?

17 A. I worked for five years at Olin Corporation. During  
18 the first four years with Olin, I was a process engineer at  
19 one of their chemical plants. My last year at Olin was  
20 spent as an economic analyst in its Chemicals Group.  
21

22 Q. PLEASE DESCRIBE SOME OF YOUR OTHER RELEVANT EXPERIENCE.

23 A. I was the chairman of a one week seminar given by the  
24 American Management Association entitled "Accounting and  
25 Finance for Non-Financial Executives". Also, I have lec-

1 tured to the managements of Union Carbide Corporation,  
2 Celanese Corporation, and Olin Corporation. My topic was  
3 current value accounting applications in the chemical in-  
4 dustry.

5

6 Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

7 A. I received an M.B.A. in Banking and Finance from Case  
8 Western University (1971) and a B.S. in Chemical Engineer-  
9 ing from the University of Pittsburgh (1967).

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1 II. PURPOSE OF TESTIMONY

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3 Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

4 A. This testimony addresses the cost of capital that Gulf  
5 Power should be allowed to earn on its utility rate base.

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1     III.   SUMMARY OF CONCLUSIONS

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3           A.   Recommended Cost of Capital

4     Q.   PLEASE SUMMARIZE YOUR CONCLUSIONS ON THE COST OF CAPI-  
5     TAL TO GULF POWER COMPANY.

6     A.   The overall cost of capital that should be allowed to  
7     Gulf Power Company is 7.95% (see Schedule 1, Page 1).  
8     This is based upon an investor supplied capital structure  
9     with 42.98% common equity, 8.10% preferred equity, and  
10    48.92% debt. The cost of capital is based upon a cost of  
11    equity of 11.75%.

12           I also explain in this testimony that the cost of  
13    equity to service industrial customers is is estimated to  
14    be about 0.4% higher than to service residential or commer-  
15    cial customers. This means that the cost to service  
16    residential and commercial customers is probably somewhat  
17    below 11.75%, and the cost to service industrial customers  
18    is probably slightly higher than 11.75%.

19

20    Q.   HAVE THE PROBLEMS WITH THE INTERNAL REVENUE SERVICE AND  
21    OTHER ALLEGED MANAGEMENT INDISCRETIONS INCREASED THE COST  
22    OF EQUITY OF GULF POWER?

23    A.   Theoretically, yes. However, I do not believe it is  
24    proper for ratepayers to be charged for whatever extra  
25    costs might exist as a result of these problems. While I

1 have not made any downward adjustment, to the extent possible  
2 this higher equity cost should not be included in the  
3 return on equity allowed to Gulf Power.

4  
5 Q. YOUR RECOMMENDATION FOR THE COST OF EQUITY IS 1.25%  
6 LOWER THAN THE 13.0% RECOMMENDED BY DR. MORIN. PLEASE SUM-  
7 MARIZE WHY THIS DIFFERENCE EXISTS.

8 A. Dr. Morin presented a wide array of DCF analyses, most  
9 of which have a theoretical basis that is inconsistent with  
10 the requirements of the D/P + g version of the DCF model.  
11 Specifically, he used non-constant growth rates as an input  
12 to this version of the DCF model which requires that constant  
13 growth rates be assumed. The one version of the DCF  
14 model he presented which does have some validity, because  
15 it at least does depend upon a constant growth rate, was  
16 applied in a much more limited way than he applied his  
17 other, invalid DCF techniques. In addition to the problems  
18 with his DCF method, he improperly increased his equity  
19 cost determination as a result of his view of the impact of  
20 the payment of quarterly dividends. In reality, the fact  
21 that dividends are paid quarterly instead of annually  
22 causes the annual DCF model to overstate, not understate  
23 the indicated cost of equity. The problems with Dr.  
24 Morin's DCF analysis are explained in detail in the Testimony  
25 Evaluation section of this testimony.

1           In addition to the DCF method, Dr. Morin says that he  
2 presented a risk premium analysis. As also explained in  
3 the Testimony Evaluation section of this testimony, the  
4 Risk Premium approach as he presented it is really his DCF  
5 method all over again, but with the additional problems  
6 that it is dependent upon the incorrect assumption that in-  
7 come tax laws and investors expectations for inflation  
8 have remained constant over the years.

9

10 Q. YOU SAID THAT THE USE OF AN ANNUAL DIVIDEND DCF MODEL  
11 FOR A COMPANY THAT PAYS DIVIDENDS QUARTERLY RESULTS IN THE  
12 MODEL OVERSTATING THE COST OF EQUITY. DID YOU CONSIDER  
13 THIS IN YOUR 11.75% COST OF EQUITY RECOMMENDATION?

14 A. I did not lower my cost of equity recommendation as a  
15 result of the quarterly payment of dividends. For this  
16 reason, and others explained later in this testimony, my  
17 11.75% cost of equity recommendation is conservatively  
18 high.

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1 IV. CAPITAL STRUCTURE

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3 Q. WHAT DO YOU RECOMMEND FOR THE CAPITAL STRUCTURE OF GULF  
4 POWER COMPANY?

5 A. As explained in the summary of conclusions of this tes-  
6 timony, the capital structure I have used to formulate my  
7 overall cost of capital recommendation is shown on Schedule  
8 1, Page 1. This capital structure is the same one that has  
9 been proposed by the company. If the Commission should  
10 determine that any adjustments to the capital structure are  
11 appropriate, then my cost of capital recommendation should  
12 be adjusted accordingly.

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1 V. COST OF FIXED CAPITAL

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3 Q. HOW DID DEFINE THE TERM COST OF FIXED CAPITAL THAT  
4 SHOULD BE ALLOWED TO GULF POWER?

5 A. I adopted the embedded costs as presented by the com-  
6 pany.

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1 VI. COST OF COMMON EQUITY

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3 A. Summary of Conclusions on Cost of Equity

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5 Q. WHAT IS THE COST OF EQUITY TO GULF POWER COMPANY?

6 A. The return on common equity this Commission should al-  
7 low Gulf Power Company is 11.75%.

8 My recommended return on equity is based primarily  
9 upon the application of the DCF method to the electric com-  
10 panies in the Moody's Electric Utility Common Stocks  
11 (Moody's 24) which are not in the midst of nuclear con-  
12 struction uncertainties, and to the Southern Company which  
13 is the parent of Gulf Power.

14 The equity cost recommendation has been checked for  
15 reasonableness by making a review of the relationship be-  
16 tween market-to-book ratios and the earned return on equity  
17 and by comparable earnings observations of the the actual  
18 return on book equity that has been achieved by the Dow  
19 Jones 30 industrials.

20 B. Definition of Cost of Equity

21

22 Q. HOW DO YOU DEFINE THE TERM COST OF COMMON EQUITY?

23

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25

1 A. The cost of common equity is the profit opportunity rate  
2 investors require in order to be willing to exchange cur-  
3 rent cash for the right to future dividends and future  
4 capital appreciation.

5

6 Q. WHAT DETERMINES THE MARKET PRICE OF A UTILITY'S STOCK?

7 A. The perceived success of management in earning profits  
8 on assets, not the cost of the assets, determines the  
9 market price for essentially any stock. If profit expecta-  
10 tions grow to where they exceed investors' requirements,  
11 market price will exceed the net original cost (book value)  
12 and if profit expectations fall below investor require-  
13 ments, market price will be less than book value. The  
14 market price can properly be compared to book value per  
15 share to determine the adequacy of the earnings prospects  
16 that investors expect management to achieve on the  
17 company's assets. The commonly used statistic to compare  
18 these factors is the market-to-book ratio.

19

20 Q. FOR A COMPANY WITH A MARKET PRICE IN EXCESS OF BOOK  
21 VALUE, HOW LONG WILL THE STOCK PRICE STAY ABOVE BOOK VALUE?

22 The stock price will remain above book value as long as in-  
23 vestors continue to expect the return on book equity to be  
24 higher than they demand on their market price investment.  
25 If, in the future business conditions change such that in-

1 investors no longer expect the company to be able to earn a  
2 return on book equity in excess of the return demanded on  
3 market, the market price will decline.

4  
5  
6 Q. HOW DOES THIS APPLY TO A REGULATED UTILITY COMPANY?

7 For a utility, if all assets are included in the rate  
8 base, and if all expenses are deemed to be appropriate,  
9 regulators should strive to set authorized earnings at the  
10 level required to result in a market-to-book ratio averag-  
11 ing approximately 1.0 in the long run. If regulators were  
12 to set earnings at a level which would cause investors to  
13 set the market price below book value, the earnings power  
14 of the assets would be perceived to be worth less than the  
15 net original cost. Conversely, if regulators were to set  
16 earnings at a level which would cause investors to set the  
17 market price above book value, this would mean investors  
18 would be perceiving that the profits on the assets would be  
19 high enough to make them worth more than the original cost  
20 of the assets.

21

22 Q. WHAT IF A UTILITY COMPANY'S COMMON STOCK PRICE IS AL-  
23 READY SIGNIFICANTLY ABOVE BOOK VALUE?

24

25

1 A. This is a clear sign that the company is expected by  
2 investors to be able to earn more than its cost of equity.  
3 To the extent that this high rate of earnings is the result  
4 of the expectations from the regulated utility operations,  
5 the regulating authority should take the appropriate ac-  
6 tion, such as lowering the authorized return on equity.  
7 Once investors change their expectations accordingly, the  
8 stock price will decline to the proper level.

9  
10

11 Q. ARE THERE ANY UNDESIRABLE RESULTS ASSOCIATED WITH SET-  
12 TING A RETURN AT SOME LEVEL OTHER THAN THAT WHICH WOULD  
13 RESULT IN A MARKET PRICE EQUAL TO THE BOOK VALUE OF USED  
14 AND USEFUL UTILITY INVESTMENT?

15 A. Yes. If the market-to-book ratio target were less than  
16 1.0, management might resist making new capital investments  
17 in order to minimize dilution. Conversely, a market-to-book  
18 ratio above 1.0 derived from the authorized return would  
19 also be an undesirable target for a regulated company. Not  
20 only would it result in higher profits than necessary, it  
21 also would give management an incentive to invest in un-  
22 needed new assets. Equity raised to finance the new assets  
23 would cause the book value to inflate. Therefore, if  
24 regulation permits a utility to increase its book value  
25 per share merely by purchasing new assets, a potential risk

1 exists that more assets would be purchased than needed to  
2 provide safe and adequate service. It is possible that the  
3 high market-to-book ratios in the 1960's and early 1970's  
4 contributed to the extra capacity that exists today in many  
5 parts of the country.

6 The DCF method is specifically designed to measure the  
7 return on equity investors expect to earn on their market  
8 price investment.

9

10 Q. CAN THE COST OF EQUITY BE DETERMINED PRECISELY?

11 A. A certain degree of imprecision exists in the deter-  
12 mination of equity cost because a company's market price is  
13 dependent upon investors' expectations of future average  
14 earnings levels. Future expectations are not subject to  
15 precise computation. However, the greatest source of im-  
16 precision in arriving at the cost of equity in utility rate  
17 proceedings comes from the improper selection of tech-  
18 niques, or the misapplication of the selected techniques  
19 rather than for a difficulty in quantifying investors' ex-  
20 pectations. For example, if in the DCF method, one ap-  
21 proaches the quantification of investor growth expecta-  
22 tions by merely observing historic growth in earnings per  
23 share or dividends per share without basing future expecta-  
24 tions on an understanding of what it is in the historic  
25 data that causes growth, it is possible to reach a growth

1 conclusion which is substantially different from that ex-  
2 pected by investors. Alternatively, if growth is quantified  
3 by recognizing that it occurs because earnings have been  
4 and will be retained in the business and used to purchase  
5 used and useful assets, a much more accurate estimate of  
6 growth is possible.

7

8 Q. DOES THE USE OF AN ARRAY OF IMPRECISE METHODS HELP TO  
9 IMPROVE PRECISION?

10 A. No. Using a collection of inaccurate methods can only  
11 serve to dilute the accuracy of the answer obtained from  
12 the accurate methods. Quantity is not a substitute for  
13 quality. For example, as explained in the Testimony  
14 Evaluation section of this testimony, considering the  
15 results of a risk premium analysis only serve to reduce the  
16 accuracy of the computed cost of equity.

17

18 Q. IS HISTORIC DATA HELPFUL?

19 A. Yes. Investors and analysts examine historic data to  
20 help understand what is probable for the future. However,  
21 sophisticated investors do not compute historic five or ten  
22 year growth rates and use that result to determine what  
23 growth rates are probable to occur in the future.

24

25

1 C. Cost of Equity Computation

2 1. Introduction

3 Q. HOW HAVE YOU COMPUTED THE COST OF COMMON EQUITY?

4 A. I have computed the cost of equity by using a properly  
5 applied DCF method. By properly applied, I mean a method  
6 that is consistent with the basic assumptions referenced  
7 later in my testimony are required to implement the DCF  
8 method. This essentially means that my estimate of growth  
9 is based upon a future sustainable growth rate, not a  
10 growth rate that might have by chance happened over any  
11 particular historic period.

12 As will be explained in this section of my testimony,  
13 to properly apply the simplified, or D/P + "g" version of  
14 the DCF method it is necessary to make the four following  
15 determinations:

16

- 17 1) the dividend yield  
18 2) the return on equity rate which investors an-  
19 ticipate for the future  
20 3) the dividend payout ratio (or retention rate) that  
21 is consistent with the dividend yield and return on  
22 equity expectation  
23 4) the impact of any sales of new common equity at  
24 other than book value.

25

1 Q. DID YOU RELY ON ANY TECHNIQUES OTHER THAN THE DCF  
2 METHOD?

3 A. Properly applied, the DCF method is far superior to  
4 other equity costing methods. Therefore, it should be  
5 given primary weight.

6 I have checked the results from my DCF method by ob-  
7 serving the relationship between the earned return on  
8 equity and the market-to-book ratios, and have presented a  
9 comparable earnings study. The comparable earnings study is  
10 helpful to show that my equity cost recommendation is suf-  
11 ficient to provide a return on equity commensurate with the  
12 returns being earned by unregulated firms.

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1                   2. Description of DCF Method

2   Q. PLEASE EXPLAIN THE DCF METHOD.

3   A. The Discounted Cash Flow, or DCF method, is based upon  
4 the principle that there is a time value associated with  
5 money. That is, \$1,000 received next year is worth less  
6 than \$1,000 received today. This is true, if for no other  
7 reason, because one person could take the \$1,000 received  
8 today, put it in a bank account guaranteed by the federal  
9 government, then, one year later withdraw those funds from  
10 that account. Assuming an interest rate of 6% compounded  
11 annually, at the time of withdrawal, one would receive ap-  
12 proximately \$1,060 from the bank. In this way, \$1,000 today  
13 is worth the same as \$1,060 received in one year. Because  
14 of this time value associated with money, the relative  
15 value difference of the \$1,000 received next year versus  
16 the \$1,000 received today is dependent upon the interest  
17 rate, or cost of capital.

18       The concept of time value as explained above is  
19 directly applicable to a decision to purchase common stock.  
20 The essential difference between an investment in common  
21 stock and an investment in the bank account is that, unlike  
22 with a bank account, the exact total yield from an invest-  
23 ment in common stock is not specified and there is no  
24 federal guarantee that either the principal will be

25

1 returned or that any dividends will ever be paid. While  
2 the stock investment is more risky, the basic principle of  
3 the time value of money remains the same.

4 When an investor either buys stock in a company, or  
5 deposits money in a bank account, he or she gives up cash  
6 today in exchange for the right to potential future gains.  
7 The investor in the bank account gets the specified inter-  
8 est income, whereas the investor in common stock gets any  
9 dividends the company may declare plus the right to sell  
10 the stock at prevailing market prices. Today's stock price  
11 is the present value equivalent of the expected dividends  
12 and the proceeds from eventually selling the stock. The  
13 interest rate, or, discount rate, that makes the future an-  
14 ticipated dividends and future anticipated selling price  
15 equal to the present market price is the cost of equity.

16 Conceptually, it is possible to use a "full" DCF method  
17 by making a separate year-by-year estimate of what the  
18 dividend for any given company will be. Then, each year's  
19 dividend could be separately discounted back to arrive at  
20 its net present value. Through a series of repeated com-  
21 putations, eventually the discount rate can be determined  
22 that is sufficient for the stream of future cash flows to  
23 have the same net present value as the current market  
24 price. This procedure is moderately cumbersome. When cer-  
25 tain specific conditions exist, it is possible to greatly

1 simplify the process. If it is reasonable to expect that  
2 earnings, dividends, book value, and stock price will all  
3 grow at a constant rate in the future, it is mathematically  
4 acceptable to use the simplified version of the DCF for-  
5 mula.

6 The simplified formula is  $k = D/P + g$  where  $k$  equals the  
7 cost of equity,  $D$  equals the dividend,  $P$  equals market  
8 price and  $g$  equals the future anticipated rate of growth in  
9 dividends, earnings, book value, and stock price.

10 For reasons that will be explained later, if a decision  
11 to use this simplified version of the DCF formula is made,  
12 as I have done in my testimony) it is critical that the  
13 retention rate times return on equity, which is commonly  
14 referred to as the "b x r" approach, be used to compute  
15 growth. This is because the "b x r" approach arrives at a  
16 future sustainable constant growth rate. Other techniques,  
17 such as the historic rate of change in dividends, are  
18 derived from environments in which earnings, dividends, and  
19 book value all grew at varying rates. Therefore, they are  
20 not the type of growth rates that can be used in the  
21 simplified, or  $D/P + g$  version of the DCF formula.

22 The simplified version of the DCF method is applied by  
23 computing  $D/P$  (dividend yield), determining  $g$  and then ad-  
24 ding these two results together.

25

1 Q. IS IT GENERALLY APPROPRIATE TO USE THE  $D/P + g$   
2 SIMPLIFIED VERSION OF THE DCF METHOD FOR PUBLIC UTILITIES?

3 A. Yes. For most utilities, future business conditions are  
4 generally expected to be relatively stable. Earnings fluctuate  
5 to a certain degree based upon local weather and  
6 economic cycles, extraordinary events and the timing of  
7 rate cases. However, results generally tend to cycle back  
8 to a normal profit allowances as a result of rate increase  
9 awards. This is in contrast to some non-utility companies  
10 that might have a fad product with a profit expectation for  
11 only a few years or a developing company which might be expected  
12 to have several years of poor earnings before its  
13 product becomes successful.

14

15 Q. IS THE DCF METHOD ALWAYS APPLIED PROPERLY?

16 A. No, not always. A common mistake that must be avoided  
17 in the implementation of the DCF method for public  
18 utilities is to simply compute a compound annual growth  
19 rate from an historic period as a starting point and to  
20 apply that "g" to the simplified  $D/P + g$  formulation. As  
21 will be described in detail later in this testimony, this  
22 is one of the critical mistakes made by by Gulf Powers'  
23 witness Dr. Morin.

24

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1           Because analysts published five-year growth rates are  
2 measured from an historic year to a forecasted future year,  
3 these growth rates should only be used in the complex ver-  
4 sion of the DCF method and should not be used in the  
5 simplified version of the method. Relying upon growth from  
6 an historic period for use in the DCF method, even if the  
7 historic period is the most recently completed year, is in-  
8 correct. As a general rule such growth is not sustainable  
9 and is not reflected in stock price movement. Unless the  
10 historic base period contained a return on equity and  
11 payout ratio that is exactly equal to the future an-  
12 ticipated return on equity and payout ratio.

13           For example, if a utility company earned 10.0% on its  
14 equity in 1988, but investors believed the company was  
15 capable of earning 12.0% on equity in the future, the in-  
16 crease in earnings per share necessary to bring the 10.0%  
17 to 12.0% would show up as a very high increment to growth  
18 in analysts estimates for growth over the next few years.  
19 An increase from a 10% return on equity to a 12% return on  
20 equity is a one-time growth in earnings per share of 20%!  
21 A non-recurring source of growth such as this, even spread  
22 out over five years would still have a very large distor-  
23 tive effect on the growth rate the analyst would publish.  
24 This growth rate is not sustainable because the earned  
25 return on equity cannot realistically be expected to in-

1 crease to 14%, then 16%, then 18%, etc. The analysts growth  
2 forecast may be correct, but it is still inappropriate to  
3 use that type of a growth in the D/P +g simplified formula-  
4 tion of the DCF model.

5

6 Q. CAN YOU PROVIDE A CALCULATION THAT DEMONSTRATES THE EF-  
7 FECT YOU ARE DESCRIBING?

8 A. Yes. Assume that a company in 1988 had a book value of  
9 \$10.00 per share, earned \$1.00 per share, and paid a  
10 dividend of \$ .50 per share. Based upon these assumptions,  
11 it would have earned a return on equity of approximately  
12 10%. Assume for purposes of this discussion that the  
13 company's regulators approve a rate increase resulting in  
14 an earned return on equity of 12%. Increasing the return on  
15 equity from 10% to 12% would result in an immediate in-  
16 crease in the company's ability to earn by 20%! A return on  
17 equity of 12% on a \$10.00 book value produces earnings of  
18 \$1.20, or 20% higher than the \$1.00 earned when the earned  
19 return was only 10%. If the company kept the payout ratio  
20 constant, it could also increase dividends, in this case  
21 from \$.50 to \$.60. Therefore, dividends would also see a  
22 one-time growth spurt of 20%. In this example, if the  
23 analyst expected the return on equity to be increased from  
24 10% to 12%, the one-time growth spurt of 20% that is re-  
25 quired merely to bring the return on equity up to current

1 cost rates would increase the annual average growth by  
2 20%/5years, or about 4% (actually, 3.7% higher on a com-  
3 pound annual computation). While on the one hand, the as-  
4 tute analyst would recognize that this one time extraordi-  
5 nary growth would occur in the first future five year  
6 period, the same analyst could not expect this extraordi-  
7 nary growth to reoccur in all periods subsequent to the  
8 first five years. Use of the  $D/P + g$  version of the DCF  
9 method, however, requires the assumption that the growth  
10 rate, or "g" used will continue far beyond the first five  
11 years. Since in the above example, any rational analyst  
12 would recognize that the growth rate predicted for the  
13 first five years would not continue into the subsequent  
14 time periods, such an analyst would not use the  $D/P + g$   
15 formulation in conjunction with that five year growth rate

16

17 Q. HOW SHOULD THE GROWTH RATES FOR USE IN THE SIMPLIFIED  
18 VERSION OF THE DCF MODEL BE ESTIMATED?

19 A. The future growth rate is dependent upon the future  
20 earnings a utility will achieve. The future growth rate, or  
21 "g" portion of the  $D/P + g$  formula, is properly determined  
22 by multiplying the future expected earned return on equity  
23 by the portion of these future earnings that are expected  
24 to be retained in the business rather than paid out as a  
25 dividend (retention rate). This results in the ongoing,

1 sustainable growth rate which is appropriate for use in the  
2 simplified version of the DCF method. Earnings retained in  
3 the business are what is available for reinvestment in  
4 utility assets. Ultimately, the earnings of a utility com-  
5 pany are dependent upon the value of the assets included in  
6 rate base.

7

8 Q. COULD YOU GIVE AN EXAMPLE THAT SHOWS HOW THE RETENTION  
9 OF EARNINGS PRODUCES GROWTH?

10 A. Yes. Exactly how retained earnings and earned return on  
11 equity combine to produce growth can be seen in the follow-  
12 ing example:

13

14 Assume a company with a book value of \$20.00 per  
15 share at the beginning of a year earns 10% on equity  
16 and pays a dividend of \$1.50 per share. Its earnings  
17 in that year would be \$2.00 (the \$20.00 book value  
18 multiplied by 10%). Retained earnings would be \$2.00  
19 less \$1.50 of dividends, or \$0.50. Since the \$0.50  
20 represents a permanent increase in equity capital, the  
21 book value of the company at the end of the year would  
22 be \$20.50 per share. In this way, by foregoing the  
23 additional potential \$.50 dividend, the common equity  
24 holder has, in fact, invested an additional \$.50 in  
25 the business.

1           If the company is anticipated to continue to earn  
2           10%, then earnings in the next year will be an-  
3           ticipated to be \$2.05 (\$20.50 multiplied by 10%). In  
4           this example the growth in earnings is  $\$2.05/\$2.00 =$   
5           1.025 or 2.5% growth. Mathematically, it is possible  
6           to express the growth caused by retained earnings as b  
7           times r where b equals the retention rate and r equals  
8           the future anticipated return on equity. I note, once  
9           again, that the cause of growth in earnings per share  
10          for a utility may properly be compared to the cause of  
11          growth of earnings in a savings account. If an inves-  
12          tor has \$1,000 in a savings account paying 6% inter-  
13          est, in the first year earnings will be \$60. At the  
14          end of one year the account will contain \$1,060. If  
15          the investor decides to leave the \$60 in the account  
16          (or "retain" all earnings), then earnings in the next  
17          year will grow from \$60 to \$63.60 ( $1,060 \times 6\%$ ). Con-  
18          versely, if the investor decides to withdraw the \$60  
19          of first-year earnings, earnings in the second year  
20          will not grow to \$63.60, but will remain at \$60. Ex-  
21          actly the same principle holds for a common stock in-  
22          vestment. If earnings are retained, they will be  
23          reinvested in the business and become available for  
24  
25

1 future earnings growth, but if they are paid out as  
2 dividends, they will not be available for reinvest-  
3 ment.

4  
5 Q. TO WHAT DOES THE GROWTH COMPONENT OF THE DCF FORMULA  
6 REFER?

7 A. The formula refers to the determination of the dis-  
8 counted value of future cash flows. Cash flows include  
9 dividends plus the eventual proceeds from the sale of the  
10 stock. Some analysts incorrectly oversimplify the DCF  
11 model by saying that it is only dividends being discounted.  
12 Earnings either go to pay dividends or to increase the  
13 market price of a stock. Therefore, if the DCF model were  
14 to examine only one factor, earnings would be preferable to  
15 dividends as the indicator of total future cash flow.

16  
17 Q. IS THERE ANYTHING OTHER THAN EARNINGS AND DIVIDENDS  
18 WHICH CAN INFLUENCE THE BOOK VALUE GROWTH OF A COMPANY?

19 A. Yes. If a company sells new common stock equity, the  
20 amount received per share is equal to market price (less  
21 financing costs), not book value. The proceeds from the  
22 sale of new stock are added to the total common stock  
23 equity at the same time the number of shares outstanding is  
24 increased. Book value per share is equal to total common  
25 equity divided by total shares outstanding. Therefore, if

1 a new common equity sale is accomplished at a price above  
2 the book value, the book value per share will increase and  
3 if that sale is made below book value, the book value per  
4 share will decrease.

5

6 Q. HOW DOES A CHANGE IN BOOK VALUE PER SHARE IMPACT EARN-  
7 INGS?

8 A. Earnings per share is equal to the book value per share  
9 times earned return on equity. Therefore, anything that  
10 causes the book value per share of a utility company to  
11 decrease will tend to cause the earnings per share to  
12 decrease and anything that causes the book value per share  
13 to increase will tend to cause the earnings per share to  
14 increase.

15

16 Q. PLEASE SUMMARIZE WHAT HAS TO BE DETERMINED IN ORDER TO  
17 BE ABLE TO CORRECTLY APPLY THE D/P + g VERSION OF THE DCF  
18 METHOD TO ARRIVE AT AN INDICATED COST OF EQUITY.

19 A. As explained previously, to properly apply the D/P + g  
20 formulation of the DCF Method, four determinations need to  
21 be made:

22

- 23 1. Dividend Yield
- 24 2. The return on equity rate which investors an-  
25 ticipate a Company will earn in the future

1           3. The dividend payout ratio (or retention rate)  
2 that will be maintained in the future

3           4. The impact of any sales of new equity at other  
4 than book value.

5

6           Whether using the D/P +g simplified version of the DCF  
7 method, or using the full DCF method, it is essential that  
8 the above determinations be internally consistent. For  
9 example, assume:

10

11	Market Price	=	\$14.00/share
12	Book Value	=	10.00/share
13	Dividend	=	1.00/share

14

15

16           Then Dividend Yield = \$ 1.00/14.00 = 7.14%

17

18           If an analyst concluded that investors anticipated this  
19 hypothetical company to be able to earn 12.0% on its equity  
20 in the future, the only consistent payout ratio that can be  
21 correctly used with the above assumptions is determined as  
22 follows:

23

24           Anticipated Return on Equity of 12.0% x  
25 Book Value of \$10.00 = \$1.20 earnings per share

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$$\text{Ratio} \frac{\text{Dividend of \$1.00}}{\text{Earnings per Share of \$1.20}} = 0.833 \text{ Payout}$$

The point here is that the dividend yield computation and the growth rate computation are interdependent, not independent determinations. This is because each dollar of earnings available to a company may be either allocated to dividends and sent directly to investors or reinvested in the business to provide a growth in earnings for the future cash flow benefit of investors.

1           3. Implementation of DCF Method

2

3       Q. TO WHAT COMPANY OR COMPANIES DID YOU APPLY THE DCF  
4       METHOD IN THIS CASE?

5       A. In order to determine the cost of equity component of  
6       the overall rate of return to be applied to the Company's  
7       rate base, a DCF analysis was performed on both The  
8       Southern Company and on Moody's 24 electric utilities. The  
9       Moody's 24 was analyzed in two groups, one group made up of  
10      electric utilities not engaged in nuclear construction, and  
11      the other with electric companies that are engaged in  
12      nuclear construction. My use of the Southern Company as a  
13      proxy for Gulf Power is conservative because while Gulf  
14      Power does not have any nuclear risk exposure, the Southern  
15      Company does.

16

17      Q. WHY DID YOU SEPARATE THE MOODY'S 24 INTO GROUPS BASED  
18      UPON THEIR NUCLEAR CONSTRUCTION INVOLVEMENT?

19      A. In the current environment, investors are aware of the  
20      greater potential for future earnings problems caused by  
21      nuclear construction activities. Many electric companies  
22      engaged in nuclear construction have found it necessary to  
23      cut or eliminate the common dividend. This fact has had a  
24      material, negative impact on the stock price of electric  
25      utilities engaged in nuclear construction.

1

2 Q. HOW DID YOU SELECT MOODY'S 24 ELECTRIC UTILITIES TO  
3 COMPARE TO GULF POWER?

4 A. This is a list of electric utilities that was selected  
5 by Moody's to be representative of the electric utility in-  
6 dustry in the United States. Furthermore, Moody's has com-  
7 piled considerable historic data regarding these companies  
8 which greatly simplifies the analysis process.

9

10 Q. IS IT YOUR CONTENTION THAT EACH OF THESE COMPANIES IS  
11 THE SAME AS GULF POWER?

12 A. No. No two companies are identical in all respects. All  
13 companies have certain unique characteristics that make  
14 them in one way or another different from Gulf Power.  
15 However, the primary factors which influence the cost of  
16 equity are the same, -- they are regulated public utilities  
17 that obtain the majority of their income by selling  
18 electricity under the protection of a territorial monopoly.

19 Gulf Power has more financial risk than the average  
20 non-nuclear construction electric utility. However, it also  
21 has a lower business risk than both the Moody's 24 and The  
22 Southern Company because it has no nuclear capacity what-  
23 soever. The greater financial risk exists because it has a  
24 lower than average level of common equity in the capital  
25 structure. As is shown on Schedule 1, Page 2, I have made

1 an adjustment to increase the cost of equity as indicated  
2 from the analysis of the Moody's 24 to account for the  
3 higher financial risk. Based upon a Paine Webber report  
4 entitled Electric Utilities Industry, March 6, 1990 con-  
5 cludes that electric companies with no nuclear involvement  
6 have a 0.5% lower cost of equity than those with a nuclear  
7 involvement. However, to be conservative, I did not make  
8 the downward adjustment recommended by Paine Webber to ac-  
9 count for the lower business risk enjoyed by Gulf Power  
10 than either the Southern Company or the Moody's 24 electric  
11 utilities.

12

13 Q. HOW SHOULD THE DIVIDEND YIELD USED WITH THE DCF METHOD  
14 BE OBTAINED?

15 A. Ideally, the dividend yield that is typical of the near  
16 term future should be used in implementing the DCF analysis  
17 for regulatory purposes. Some experts feel that a spot  
18 dividend yield is the best possible estimate because that  
19 yield reflects the most current aggregate estimate of in-  
20 vestors. Others feel that a current dividend yield might  
21 contain market irregularities which temporarily distort the  
22 computed dividend yield. The DCF analysis I present is  
23 based upon both current spot dividend yield data and his-  
24 toric data. The recommended result is based upon both ob-  
25 serving historic and the current spot dividend yields. In

1 the current environment there is a relatively small dif-  
2 ference between the current yields and the average yields  
3 over the last year.

4

5 Q. THE DCF THEORY REQUIRES THAT THE D IN THE  $D/P + g$  FOR-  
6 MULA USE NEXT YEAR'S DIVIDEND RATE RATHER THAN THE CURRENT  
7 DIVIDEND RATE. HAVE YOU ALLOWED FOR THIS REQUIREMENT?

8 A. Yes. In my DCF computations, I increased the current  
9 dividend rate by an amount equal to one-half of a year's  
10 growth in dividends. In this way, the DCF computations  
11 presented herein are based upon the average dividend rate  
12 expected for the next year.

13

14 Q. HOW HAVE YOU COMPUTED THE GROWTH RATE FOR USE IN THE  
15 DCF MODEL?

16 A. As mentioned previously, the critical number to the  
17 proper determination of the growth rate to use in the DCF  
18 analysis is the future return on equity level anticipated  
19 by investors. For purposes of applying the DCF method,  
20 factors such as allowed returns on equity, historic actual  
21 returns on equity and returns on equity as anticipated by  
22 Value Line, and as computed from the consensus growth rate  
23 developed by Zack's Investors Service were reviewed. A  
24 review of other analysts' reports, and general observations  
25 concerning financial conditions contributed to my analysis.

1

2 Q. WHY DID YOU USE VALUE LINE AND ZACK'S AS SOURCES TO  
3 PROVIDE THE FUTURE EARNED RETURN ON EQUITY?

4 A. These are the two sources available to me that provide  
5 long-term estimates of earned return on equity for a broad  
6 range of utility companies. Although many of the details  
7 of the method relied upon by these sources to produce the  
8 estimates are not disclosed, I am presenting these future  
9 return on equity estimates in this case because they  
10 provide a helpful balance to the other observable facts  
11 used to formulate an estimate as to what investors expect  
12 will be the future earned return on equity.

13 Nevertheless, one must view the Value Line projections  
14 with caution because they tend to base their future ex-  
15 pected returns on equity on the historic allowed returns on  
16 equity. In the current environment, for those companies  
17 that have not had a rate case since 1985, it is probable  
18 that the future allowed return on equity will be less than  
19 in the past.

20

21 Q. ISN'T IT TRUE THAT IN ADDITION TO PROVIDING AN ESTIMATE  
22 OF FUTURE RETURN ON EQUITY, VALUE LINE ALSO PUBLISHES A FU-  
23 TURE GROWTH RATE?

24

25

1 A. No, not exactly. Value Line publishes a growth rate  
2 that it calls growth from 1986-88 to 1992-94. This growth  
3 rate is part historical and part projected. It is not ap-  
4 propriate to use the growth rates in earnings per share or  
5 dividends per share as published in Value Line in the  
6 simplified D/P + g formulation of the DCF method. This is  
7 because these growth rates as computed by Value Line are  
8 not the average constant growth rates which are required in  
9 the use of the simplified version of the DCF method.

10

11 Q. HOW DO YOU KNOW THAT THESE ARE NOT AVERAGE CONSTANT  
12 GROWTH RATES?

13 A. Value Line describes its growth rate as the annual  
14 rates of change from either 1986-88, or 1987-89 depending  
15 upon the company, to 1992-94. This means that to the ex-  
16 tent the base period had abnormally low or abnormally high  
17 earnings, the growth rate computed based upon it would not  
18 be reflective of the future sustainable growth rates.

19

20 Q. DOES ZACK'S PUBLISH GROWTH RATES?

21 A. Yes, Zack's publishes five year consensus earnings per  
22 share growth rates. These growth rates are obtained by com-  
23 piling the growth rate estimates issued by the major in-  
24 vestment bankers.

25

1 Q. CAN THESE GROWTH RATES BE USED DIRECTLY IN THE  $D/P + g$   
2 VERSION OF THE DCF FORMULA?

3 A. No. These are five year growth rates, not the infinite  
4 time horizon growth rates required by the  $D/P + g$  version  
5 of the calculation. They provide the consensus anticipated  
6 earnings per share growth from the most recent historic  
7 year out to five years from now. If the earned return on  
8 equity an analyst felt was sustainable in the future was  
9 not achieved in the most recent historic year, then the  
10 published five-year growth rate will be higher than the  
11 long-term sustainable growth rate. Conversely, if the  
12 return on equity achieved in the most recent historic year  
13 was higher than the analyst felt was sustainable, then the  
14 five year growth rate forecast by analysts will be lower  
15 than the future sustainable growth rate.

16

17 Q. GIVEN THIS PROBLEM, HOW ARE THE ANALYSTS' GROWTH  
18 FORECASTS HELPFUL IN IMPLEMENTING THE DCF METHOD?

19 A. The five-year earnings per share growth rate can be  
20 converted into a sustainable growth rate by determining the  
21 earned return on equity a company would have to accomplish  
22 in order to be able to achieve the five-year growth rate  
23 expected by analysts. Then, this expected return on equity  
24 can be used in the return on equity x retention rate com-  
25 putation. Exactly how the consensus growth rates were con-

1 verted into the future return on equity expected by  
2 analysts is shown on Schedule 6. On that schedule, both  
3 the the earnings per share and dividends per share were es-  
4 calated at Zack's Consensus 5 Year Growth Rate. Book value  
5 was obtained by adding earnings and subtracting dividends  
6 from the beginning book value. The resultant future earn-  
7 ings per share was then divided by the future future ex-  
8 pected average book value per share.

9

10 Q. IS THE RETURN ON EQUITY EXPECTED BY ANALYSTS THE SAME  
11 THING AS THE COST OF EQUITY?

12 A. No. The return on equity expected by analysts in and  
13 of itself says nothing about the cost of equity being  
14 demanded by investors. It is only after considering both  
15 the future expected return on equity and the market price  
16 and other data of a company in a formula such as the DCF  
17 method is it possible to reach an estimate of the cost of  
18 equity.

19

20 Q. PLEASE DESCRIBE HOW YOU DEVELOPED THE GROWTH RATE FOR  
21 THE MOODY'S 24 ELECTRIC UTILITY COMPANIES.

22 A. I used the  $D/P + g$  formulation of the DCF method be-  
23 cause the same future return on equity expectation is ap-  
24 propriate for all future years. While it can be said with  
25 confidence that the future earned return on equity will

1 fluctuate, it is not known at this time which future years  
2 will have a higher than expected return on equity result  
3 and which future years will have a lower future expected  
4 result. Therefore, no additional accuracy would be ob-  
5 tained by using the more complex version of the DCF method.  
6 Because I chose to use the D/P + g version of the DCF for-  
7 mula, I computed growth by use of the return on equity  
8 times retention rate, or  $b \times r$  method. As previously ex-  
9 plained,  $b \times r$  should be used whenever applying the D/P +  
10 g version of the DCF formula.

11

12 Q. WHAT DID YOU CONCLUDE IS THE FUTURE EXPECTED RETURN ON  
13 EQUITY FOR THE AVERAGE NON-NUCLEAR CONSTRUCTION ELECTRIC  
14 UTILITY?

15 A. At this time, the majority of investors should be ex-  
16 pecting that a typical group of non-nuclear electric  
17 utilities should be able to sustain an average earned  
18 return on equity of no more than 13.9% in the future. This  
19 conclusion was based upon the following observations:

20

21 1) According to a Merrill Lynch report entitled  
22 "Utility Industry, Quarterly Regulatory Report", the  
23 average return on equity allowed to electric utilities  
24 has been as follows:

25

1	1987	13.25%
2	1988	13.08%
3	1989 First Quarter	12.89%
4	1989 Second Quarter	12.88%

5  
6           Based upon allowed returns on equity over the  
7 last several years, the companies would have to  
8 achieve returns above the levels allowed on equity in  
9 order to earn as much as the 13.9% on equity. There-  
10 fore, the above allowed returns on equity show that my  
11 use of a 13.9% future expected return on equity, for  
12 purposes of computing future expected cash flow, is  
13 conservative.

14  
15           2) As shown on Schedule 4, Page 2, the average  
16 return on equity forecast by Value Line for the non-  
17 nuclear electric utilities is 13.69%. This also shows  
18 that my 13.9% estimate of investors future expecta-  
19 tions is conservative.

20  
21           3) As shown on Schedule 6, the return on equity  
22 that the non-nuclear construction electrics will earn  
23 in five years if the consensus growth rate as forecast

24  
25

1           by analysts should occur is about 13.84%. This also  
2           shows that the 13.9% estimate I have used in my DCF  
3           computations is conservative.  
4

5           4) As shown on Schedule 4, Page 2, the average  
6           earned return on equity achieved for the non-nuclear  
7           construction electrics was 13.63% in 1989. Therefore,  
8           my 13.9% estimate of future return on equity expecta-  
9           tions is supported as a conservatively high estimate  
10          by the recent historic earned return on equity data.  
11  
12

13       Q.   WHAT DID YOU CONCLUDE WAS THE AVERAGE FUTURE RETURN ON  
14       EQUITY ACHIEVABLE FOR THE NUCLEAR CONSTRUCTION ELECTRICS,  
15       AND HOW DID YOU REACH THAT CONCLUSION?

16       A.   I concluded that investors expect the nuclear construc-  
17       tion electrics to average 12.50% return on equity in the  
18       future. This conclusion was arrived at by considering the  
19       above points regarding the non-nuclear construction  
20       electrics and additionally observing that both the return  
21       on equity derived from the Zack's consensus and the Value  
22       Line projected return on equity are lower for the nuclear  
23       construction electrics than for the non-nuclear construc-  
24       tion electrics.  
25

1 Q. HOW DID YOU APPLY THE DCF METHOD TO THE FINANCIAL DATA  
2 OF THE SOUTHERN COMPANY?

3 A. I observed that Value Line predicted the Southern Com-  
4 pany would earn 12.5% on its book equity in the future,  
5 and that the Zack's consensus growth rate required a 12.95%  
6 return on equity (See Schedule 2, Page 3). As shown on  
7 Schedule 2, Page 2, the return on equity achieved by the  
8 Southern Company in 1988 was 12.93%, and in 1989 was about  
9 12.49%. Paine Webber in its March 6, 1989 Electric  
10 Utilities Industry report stated its opinion that the  
11 Southern Company would earn 12.5% to 13.0% on equity in the  
12 future. (In reviewing these numbers, it should be remem-  
13 bered that these are not the equity cost numbers being  
14 demanded by investors, they are merely the return on equity  
15 expectations used to determine the future cash flow an-  
16 ticipated by investors. It is only after the resultant  
17 cash flow is compared to the market price investors are  
18 willing to pay in order to obtain the rights to that cash  
19 flow that the cost of equity is addressed).

20

21 Q. HOW DID YOU OBTAIN THE RETENTION RATE YOU USED IN YOUR  
22 DCF COMPUTATIONS?

23 A. As explained earlier in this testimony, the retention  
24 rate used should be consistent with investors' future ex-  
25 pectations and with the other inputs into the DCF model.

1 Since, by definition, the retention rate is the portion of  
2 earnings not paid out as dividends, and since both a  
3 dividend rate has been used for the dividend yield portion  
4 of the DCF equation and the future earnings rate is propor-  
5 tional to the future expected return on equity, the reten-  
6 tion rate used should be directly derived from the dividend  
7 rate and the future expected return on equity. Any alter-  
8 nate approach would be inconsistent with other assumptions,  
9 and therefore inappropriate. For example, it would create  
10 unnecessary errors if one were to conclude that the his-  
11 toric retention rate was 20% if the following had already  
12 been concluded:

13

14 1) dividend yield had been computed based upon a \$0.75  
15 per share dividend rate,

16

17 2) the future expected return on equity was expected  
18 to be 13.0%,

19

20 3) book value was \$10.00 per share.

21

22 Based on the above, the earnings per share determined  
23 to be typical of the future would be the 13% future ex-  
24 pected return on equity times the \$10.00 book, or \$1.30.  
25 If dividends have already been determined to be \$.75, then

1 the only retention rate consistent with the other assump-  
2 tions is  $(\$1.30 - \$ 0.75) / (\$1.30)$ , or 42.3%. In this  
3 hypothetical example, the only correct retention rate to  
4 use is 42.3%. The use of, for example, a retention rate of  
5 20% would be the same as saying that it would be possible  
6 for dividends to be both \$.75 and to be \$1.04 (100%-20%,  
7 or  $80\% \times \$1.30 = \$1.04$ ) at the same time.

8

9 Q.WHAT DO YOUR COMPUTATIONS SHOW?

10 A. Schedule 2, Page 1 shows the DCF computations for The  
11 Southern Company. Schedule 3, Page 1 shows the details of  
12 the DCF computations for the non-nuclear construction  
13 electric utilities, Schedule 3, Page 2 shows the same com-  
14 putations but for the nuclear construction electrics.

15 The market data as of March 31, 1990 shows that  
16 the dividend yield for the Southern Company averaged 8.09%  
17 for the year, and ended the year at 8.15%. The non-nuclear  
18 construction electrics averaged 7.11%, and completed the  
19 year yielding 6.87%. The nuclear construction electrics  
20 averaged 8.76% and finished the year at 8.82%.

21 Based upon the expected future return on equity for  
22 the Southern Company of 13.00%, the future sustainable  
23 growth rate from the retention of earnings that investors  
24 can rationally expect is 3.22%. Based upon Value Line's es-  
25 timate of the company's expected issuances of new common

1 equity, it is reasonable to estimate that the external  
2 financing rate will be 0.27% of stock outstanding per year.  
3 Therefore, as shown on Schedule 2, Page 1 growth in earn-  
4 ings or dividends caused by new stock sales is estimated to  
5 add about 0.04% to .05% to the growth rate. This makes the  
6 total expected growth 3.27%(See Schedule 2, Page 1).

7           The growth investors can rationally expect from  
8 the non-nuclear construction electrics is 3.89% to 4.09%.  
9 (See Schedule 3, Page 1). This is made up of retention, or  
10 reinvestment growth of 3.82% to 4.01% and new financing  
11 growth of between 0.07% and 0.08%.

12           For nuclear construction electrics, investor  
13 growth expectations are computed to be about 2.44%. (See  
14 Schedule 3, Page 2). This is made up of reinvestment growth  
15 of 2.41%, and new financing growth of 0.03%.

16

17 Q.       PLEASE SUMMARIZE YOUR CONCLUSION FOR THE COST OF  
18 EQUITY BASED UPON THE DCF METHOD.

19 A.       My overall conclusion for the cost of equity indicated  
20 for Gulf Power Company is 11.75% (see Schedule 1, Page 2).  
21 The 11.75% was developed by giving weight to both the  
22 analysis of the non-nuclear construction electric  
23 utilities and to the Southern Company. Since the level of  
24 common equity in the capital structure of Gulf Power is  
25 less than the average level of common equity for the non-

1 nuclear construction electric, when deriving the cost of  
2 equity for Gulf Power based upon the Moody's electric  
3 utilities, it is appropriate to make an upward adjustment  
4 to the cost of equity to consider this difference in finan-  
5 cial risk. My overall equity cost recommendation is con-  
6 servatively high in part because, unlike Paine Webber, I  
7 have not subtracted 0.5% from the computed cost of equity  
8 that they feel the lower risk that no nuclear capacity jus-  
9 tifies.

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4. Comparable Earnings Observations

Q. HOW DOES YOUR 11.75% RECOMMENDED COST OF EQUITY COMPARE TO THE RETURN AVAILABLE ON THE EQUITY OF THE 30 COMPANIES THAT MAKE UP THE DOW JONES INDUSTRIAL AVERAGE?

A. As shown on Schedule 10, Pages 1a and 1b of 3, and as graphed on Schedule 10, Page 2 of 3, the ten year moving average of the actual earned return on equity on average for the 30 companies that make up the Dow Jones Industrial average has been between 10% and 12% since the late 1950's. Even on a single year basis rather than on a 10 year moving average basis, the range in earned returns during the 1980's has been between the 13.10% high achieved in 1984 and the 7.00% low achieved in 1982.

Q. ARE YOU SUGGESTING THAT THE RETURN ON EQUITY EARNED ON THE DOW JONES INDUSTRIALS IS THE COST OF EQUITY TO THE DOW JONES INDUSTRIALS?

A. No. The earned return on equity is not the cost of equity. It is, however, the earned return on equity that will be the end result of the rates allowed from these proceedings. Therefore, it is directly comparable to the earned return on equity being achieved by the Dow Jones 30 industrials. Also, the relationship between the market

1 price and the book value of the Dow Jones Industrials shows  
2 that investors have been more than satisfied with the  
3 returns actually earned.

4

5 Q. WHAT DOES THE MARKET-TO-BOOK RATIO DATA OF THE DOW  
6 JONES INDUSTRIALS SHOW?

7 A. As shown on Schedule 10, Pages 1a and 1b of 3, with a  
8 relatively minor exception during the 1978-1981 period, the  
9 market-to-book ratio achieved by the Dow Jones Industrials  
10 has been at or above book value since 1932, the very depth  
11 of the Great Depression. In fact, most of the time the  
12 market-to-book ratio has been substantially above 1.0.  
13 This shows that most of the time the cost of equity being  
14 demanded by investors on average for the Dow Jones In-  
15 dustrials has been less than whatever investors expect the  
16 companies will be able to earn on equity in the future.

17

18 Q. HOW DOES THE RISK OF THE DOW JONES INDUSTRIALS COMPARE  
19 TO THE RISK OF THE MOODY'S 24 ELECTRIC UTILITIES?

20 A. A standard measure of relative risk is the stock's  
21 beta. Beta is a number that quantifies the relative  
22 volatility of the stock price movements of a particular  
23 company with a broad based average such as the New York  
24 Stock Exchange Average. As shown on Schedule 10, Page 3,  
25 the beta of the Dow Jones Industrials averaged 1.077, as

1 compared to 0.696 for the non-nuclear construction  
2 electric and 0.723 for the nuclear construction electric.  
3 In both cases, this indicates that the investment risk is  
4 higher, on average, for the Dow Jones Industrials than it  
5 is for the average electric utility.

6

#### 7 D. Financing Costs and Market Pressure

8

9 Q. Please explain financing costs and market pres-  
10 sure.

11 A. When a utility company issues common stock, there  
12 are certain expenditures incurred. While other methods are  
13 possible, the usual way that ratepayers are charged for  
14 financing costs is to add an increment to the cost of  
15 equity.

16

17 Q. Have you determined what the appropriate al-  
18 lowance for financing costs should be?

19 A. Yes. The actual financing costs incurred by a com-  
20 pany are a function of the size of its common stock issues.  
21 The larger the issue, the more dollars over which the costs  
22 can be spread. It should be recognized that not all common  
23 equity obtained by the Company has a financing cost as-  
24 sociated with it. The common equity amounts raised as a  
25 result of retained earnings do not incur any financing

1 cost. Therefore, in order to obtain an overall actual cost  
2 of externally raised capital, it is necessary to weight the  
3 zero cost of obtaining retained earnings equity with the  
4 cost incurred to raise external common equity.

5

6

7 Q. How much of the total equity is raised externally  
8 for the typical utility company?

9 A. Based upon the data on page a26 of the 1989  
10 Moody's manual, for the most recent year shown about 68% of  
11 the total common equity for utilities was raised exter-  
12 nally. This means that on average 32% of the equity was  
13 raised internally. There is no financing cost incurred on  
14 the internally generated equity. Therefore, no cost was  
15 incurred on about 32% of the common equity raised. Based  
16 upon the data on Schedule 9, it can be seen that an exter-  
17 nal financing cost of 3.75% or less is appropriate. A  
18 3.75% cost of acquiring 68% of the equity blended with a 0%  
19 cost of acquiring 38% of the equity produces an overall ap-  
20 propriate allowance for financing costs of about 2.55%.  
21 This increment should be used to determine the target  
22 market-to-book ratio. A 2.55% allowance would mean that  
23 the Commission should set rates which would result in a  
24 market-to-book ratio of 102.55%.

25

1           Q. In addition to the financing costs paid to under-  
2 writers, are there any costs associated with "market pres-  
3 sure" at the time of issue?

4           A. Probably not. Dr. Sholes of the Massachusetts In-  
5 stitute of Technology conducted a thorough study which con-  
6 cluded that there was no depressant effect on the stock  
7 price of a public utility merely because it issued new com-  
8 mon stock. However, the result of my study concluded that  
9 some slight market pressure, amounting to approximately  
10 0.6% drop in market prices concurrent with the issuance of  
11 new common stock might be present. Therefore, to be con-  
12 servative, the recommended cost of equity in this report  
13 included a market pressure allowance of 0.41% (0.6% from my  
14 study x 68% for external financing) be added to the 2.55%  
15 allowance for financing costs, making the total allowance  
16 for financing costs be equal to 2.96% increment to the ap-  
17 propriate market-to-book ratio and the final market-to-book  
18 ratio target 1.0296%, which rounded becomes 1.03%.

19           In order to increase the market-to-book by 3%, suffi-  
20 cient incremental earnings need to be provided to increase  
21 only the dividend yield portion of the DCF equation.  
22 Growth need not change. Based upon the March 31, 1990  
23 dividend yield for the Southern Company, the representative  
24 gas companies, the allowance for financing costs should be  
25 8.15% x 3%, or 0.24%.

1 VII. COST OF CAPITAL BY CUSTOMER CLASS

2

3 Q. YOU HAVE RECOMMENDED AN 11.75% COST OF EQUITY FOR GULF  
4 POWER. IS THIS COST OF EQUITY EQUALLY APPLICABLE TO EACH  
5 CUSTOMER CLASS?

6 A. No. It is well recognized that serving industrial cus-  
7 tomers entails a higher degree of risk than serving  
8 residential or commercial customers. As will be explained  
9 later in this testimony, it is estimated that the cost of  
10 equity to be applied to industrial customers should be  
11 about 0.4% higher than the cost level to apply to residen-  
12 tial or commercial customers. The returns allowed to each  
13 class should be weighted so that the overall effective al-  
14 lowed return is 11.75%.

15

16 Q. How did you conclude that it is well recognized that  
17 serving industrial customers has a higher degree of risk?

18 A. Page a23 of the 1989 Moody's Public Utility Manual  
19 states:

20

21 The above revenue breakdown for each class of cus-  
22 tomers is very instructive not only when related to  
23 total income for each year, but also when compared  
24 with the table giving the kwh consumption for the same  
25 period for each class of ultimate consumer. A charac-  
teristic of residential sales growth has been its  
uniformity. Industrial sales are more sensitive to  
fluctuations in our economy and have expanded less  
uniformly. (Emphasis added)

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A book entitled "Standard and Poors Rating Guide", published in 1979 by McGraw Hill, states on page 52 of the chapter entitled "Public Utilities":

The mix of a company's revenues, earnings, and assets, and the growth thereof, provide basic measurements by which one can gauge relative exposure to normal operating, economic, and financial risks. **Industrial sales versus residential and commercial sales, higher priority gas sales versus lower priority usage, toll versus local phone revenues, wholesale relative to retail business, earnings subject to regulation, and breakdowns of investments and earnings by regulatory jurisdictions are fundamental.** (Emphasis added)

Q. Did you perform any computations to test the accuracy of the statements from Moody's and Standard and Poors?

A. Yes. I computed the actual annual change in kwh sales by customer class both on aggregate for the composite electric industry sales statistics as shown in Moody's, and individually for each of the electric utilities covered by Value Line. Value Line does not provide the kwh by customer class sales statistics, so I obtained them from "The P.U.R. Analysis of Investor-Owned Electric and Gas Utilities", 1989, 1988, and 1986 editions, published by Public Utility Reports, Inc. In a few instances, the numbers provided in this report were inconsistent usually be-

1 cause the company recategorized some customers. When these  
2 inconsistencies were observed, I directly contacted the  
3 company to obtain a consistent set of sales figures.

4 It was necessary to exclude seven companies be-  
5 cause no breakdown between industrial and commercial sales  
6 was available (Central Vermont Public Service, Oklahoma Gas  
7 & Electric, Otter Tail Power, Philadelphia Electric,  
8 Potomac Electric, Iowa-Illinois Gas & Electric, San Diego  
9 Gas & Electric). Additionally, I excluded Public Service of  
10 New Hampshire both because they are in bankruptcy and be-  
11 cause Value Line choose not to publish the beta for this  
12 company. This left 88 companies which were included in the  
13 study.

14

15 Q. What did the study show?

16 A. The study showed that the volatility of electric sales,  
17 as measured by the standard deviation in the annual rates  
18 of kwh growth from 1983 through 1988 was 5.06% for in-  
19 dustrial sales, 2.21% for commercial sales, and 3.27% for  
20 residential sales. (See Schedule 11, Page 2.)

21

22 Q. Did you quantify the difference in the cost of equity  
23 between residential and commercial classes as compared to  
24 industrial classes?

25

1 A. I produced an empirical study which developed an es-  
2 timate for the difference in the cost of equity between the  
3 customer classes. While the evidence regarding the standard  
4 deviation of growth rates, quotes from the literature, and  
5 common sense about the characteristics of industrial cus-  
6 tomers all serve to make it obvious that the cost of equity  
7 to serve industrial customers is greater than for residen-  
8 tial or commercial customers, precise quantification is not  
9 possible. The best that can be done is to arrive at a  
10 reasonable estimate of the cost difference. Even though it  
11 is necessary to arrive at an estimate, a cost difference  
12 should be recognized. If, alternatively, no cost difference  
13 were to be assigned, this would be the same as quantifying  
14 the cost difference as zero, a result which is known to be  
15 incorrect.

16

17 Q. Please describe the empirical study.

18 A. I developed a group consisting of the previously  
19 described 88 electric companies that are both covered by  
20 Value Line and had consistent and available data regarding  
21 kwh sales by customer class for the five years from 1983  
22 through 1988. These companies were ranked by percent of  
23 retail sales to industrial customers. Group statistics  
24 were prepared for the 44 companies with the percentage of  
25 sales to industrial customers below the median and for the

1 44 companies with the percentage of sales to industrial  
2 customers above the median. The market risk of the two  
3 groups was quantified by computing the average beta of both  
4 groups. For a representative group of companies, the higher  
5 the beta, the greater the risk contained in the group.

6

7 Q. Where did you obtain the Betas for the companies in  
8 your study?

9 A. They were obtained from Value Line.

10

11 Q. How does Value Line compute the Beta?

12 A. Value Line states that "The Beta is derived from a  
13 regression analysis between weekly percent changes in the  
14 price of a stock and weekly percent changes in the New York  
15 Stock Exchange Composite Index over a period of five  
16 years." This means that if the price of a particular stock  
17 tends to move up or down more rapidly than the average  
18 stock in the New York Stock Exchange it will have a Beta  
19 greater than 1.0, and if it tends to move up or down less  
20 rapidly than the average stock, it will tend to have a beta  
21 below 1.0 .

22

23 Q. If a company has a very low Beta does that automatically  
24 mean it is a low risk investment?

25

1 A. No, not necessarily. As Value Line states in its "A  
2 Subscriber's Guide", page 55, "... Beta's significance  
3 derives primarily from its usefulness in portfolios rather  
4 than in individual stocks...". For this reason, it is  
5 valid to examine the average Beta for a relatively large  
6 group of companies. The Beta for any one company or a small  
7 group of companies is less helpful as a risk quantification  
8 tool.

9

10 Q. What was shown by the comparison of the average Beta  
11 for the 44 electric utilities with sales to industrial cus-  
12 tomers below the median and the 44 companies with sales to  
13 industrial customers above the median?

14 A. As shown on Schedule 11, Page 3, the average Beta for  
15 the companies with industrial sales below the median  
16 averaged 0.6886, or .0159 lower than the 0.7045 average  
17 Beta for the group of companies with sales to industrial  
18 customers above the median shown on Schedule 11, Page 4.

19

20 Q. How did the sales to industrial customers compare?

21 A. The companies below the median averaged 26.53% of total  
22 retail kwh sales to industrial customers, whereas the com-  
23 panies above the median averaged 44.87% of sales to in-  
24 dustrial customers.

25

1 Q. Can you be sure that the only difference in risk charac-  
2 teristics between the two groups of companies was the level  
3 of sales to industrial customers?

4 A. There is a slight difference between the financial,  
5 or capital structure, risk. But, this capital structure  
6 risk differential actually serves to mitigate what other-  
7 wise appears to be a risk differential caused by the dif-  
8 ference in the level of sales to industrial companies. As  
9 shown on Schedule 11, Page 3, the companies below the  
10 median level of industrial sales had an average of 43.77%  
11 common equity in the capital structure, and the companies  
12 with industrial sales above the median had a average of  
13 45.37%. Both groups contained companies experiencing risk  
14 from nuclear troubles.

15 There are undoubtedly other factors that may be  
16 associated with any one individual company in either of the  
17 groups which will tend to increase or decrease the overall  
18 risk quantification of the group. It is likely that the  
19 groups are large enough that all of the other factors af-  
20 fecting risk will tend to average out. Quantifying all of  
21 the infinite variety of factors that might affect risk  
22 would be an endless task.

23 As previously stated, the quantification of the risk  
24 difference must be considered an estimate, not a precise  
25 quantification.

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Q. How does a difference in Beta translate into an equity cost difference

A. The risk premium between the cost of equity for a group of companies and the cost of a riskless investment such as long-term U.S. treasury bonds is proportional to the average Beta of the group of companies. This fact was relied upon to quantify how much of an equity cost difference is attributable to the impact of the level of sales to industrial customers. The specific method of estimating this is shown on Schedule 11, Page 1. As shown on that schedule, the estimated difference between the cost of equity to serve industrial customers and that to serve residential and commercial customers is estimated to be 0.4%.

1

2 VIII. Testimony Evaluation

3

4

5 Q. Have you reviewed the testimony of Dr. Morin as filed  
6 in this proceeding?

7 A. Yes.

8

9 Q. Please comment on that testimony.

10 A. Dr. Morin recommends that Gulf Power be allowed a  
11 return on equity of 13.0%. He arrived at this conclusion  
12 by presenting a wide array of both DCF analyses and risk  
13 premium analyses.

14

15 Q. Does the fact that he presented such a wide number of  
16 variations improve the accuracy of his result?

17 A. No. In order to be able to present such an array of ap-  
18 proaches, he had to chose many that are highly ques-  
19 tionable. For example, some of his DCF computations were  
20 based upon the historic growth in dividends as an indicator  
21 of future growth. He did this even though inconsistencies  
22 caused by increasing payout ratios and declining allowed  
23 returns on equity, mean that investors are aware that this  
24 historic growth is not representative of what future growth  
25 is likely to be.

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Q. Did Dr. Morin rely upon the financial data from the Southern Company in arriving at his cost of equity recommendation for Gulf Power?

A. Yes.

Q. Has this caused him to overstate the cost of equity?

A. Based upon the principles Dr. Morin expressed in his testimony filed in a recent Georgia Power rate case, yes. In that testimony, on page 49 he stated that the Georgia Power subsidiary of Southern Company was more risky than the average Southern Company subsidiary because it has a lower than average bond rating "... and experiences substantial nuclear exposure ... ". He did not point out in this testimony that unlike Georgia Power, Gulf Power has a higher bond rating than does the average company owned by the Southern Company and has no nuclear exposure. As a result, to be consistent, he should have noted that his reliance on the financial data of the Southern Company would create an upward bias to his equity cost finding.

1 DCF METHOD

2

3 Q. Is there a problem common to all his DCF approaches?

4 A. Yes. All of his DCF results contain one common problem:  
5 an upward adjustment to the return to improperly allow for  
6 the quarterly compounding effect of dividends. For ex-  
7 ample, please examine closely his analysis of the Southern  
8 Company data that he shows on his Exhibit, Schedule 3, Page  
9 2. On this schedule he concludes that the "cost of equity"  
10 to the Southern Company is 12.23%. Then, he adds another  
11 44 basis points as a result of his "Solution to the quar-  
12 terly timing DCF model ...", to obtain a "Fair Return" of  
13 12.67%. While there has been serious debate before this  
14 Commission and the Federal Energy Regulatory Commission on  
15 whether the return on equity should be decreased as a  
16 result of the quarterly compounding approach, I am not  
17 aware of FERC ever seriously considering to increase the  
18 indicated cost of equity as a result of the quarterly  
19 dividend model. To do so would be backwards.

20 Dr. Morin's opinion that the quarterly compounding effect  
21 should be added rather than subtracted from the DCF indi-  
22 cated cost rate was based upon invalid underlying assump-  
23 tions. If these underlying assumptions are corrected, then  
24 an opposite conclusion is reached.

25

1 Q. What are the invalid assumptions?

2 A. Dr. Morin provides the premise upon which his quarterly  
3 adjustment is based. On page 21 of his testimony, he  
4 states:

5

6 Clearly, a stock that pays four quarterly dividends of  
7 one dollar would command a higher price than a stock  
8 that pays a four dollar dividend a year hence, holding  
risk and growth constant.

8

9 There are two critical flaws with the above quoted state-  
10 ment. First, not only isn't it clear that the company that  
11 pays the four quarterly dividends would have a HIGHER price  
12 as he claims, in fact the company paying the quarterly  
13 dividend would have a LOWER price than a company that were  
14 to pay a dividend annually. The critical fact that Dr.  
15 Morin overlooked is that stock prices rise as the unpaid  
16 dividend accrues, and drops by the amount of the dividend  
17 once the dividend becomes payable to the stockholder of  
18 record. Using Dr. Morin's example, if a company that paid  
19 an annual of dividend of \$4.00 only once a year would have  
20 a higher average price than the company that paid the  
21 dividend quarterly because on average during the year its  
22 stock price would contain a \$2.00 increment to reflect the  
23 value of the accrued dividend (zero at the beginning of the  
24 year, gradually growing to \$4.00 at the end of the year,  
25 for an average of \$2.00), whereas the company that paid the

1 same annual dividend in quarterly installments would have  
2 a stock price that on average reflects \$ 0.50 of accrued  
3 dividends (zero growing to \$1.00 over three months, for an  
4 average of \$ 0.50). In this example, other things being  
5 equal, a company that pays \$4.00 per year in dividends  
6 would have an average stock price of about \$1.50 higher  
7 than the company that pays the same \$4.00 per year in four  
8 quarterly installments of \$1.00 each (the \$2.00 average  
9 level of accrued dividend for the annual company minus the  
10 \$0.50 average accrued dividend for the quarterly company  
11 equals \$1.50).

12

13 Q. Is this distinction important?

14 A. Yes. When Dr. Morin computed the dividend yield, he  
15 relied upon the stock price of companies that pay a  
16 dividend quarterly. The lower stock price that exists be-  
17 cause of the quarterly payment of dividends results in his  
18 dividend yield being higher (and hence indicated the cost  
19 of equity) than it otherwise would have been. Given this  
20 higher dividend yield, Dr. Morin's additional adjustment to  
21 increase the allowed return on equity even further repre-  
22 sents a double-count of the quarterly effect.

23

24 Q. Is there anything else wrong with the above statement  
25 you quoted from page 21 of his testimony?

1 A. Yes. He says that his decision to make an upward ad-  
2 justment because of the quarterly compounding of dividends  
3 is based upon his expectation that growth would remain the  
4 same whether a company paid its dividends quarterly or an-  
5 nually. This is an unrealistic expectation. The company  
6 that pays dividends annually would have the use of the  
7 dividend funds considerably longer than would the company  
8 that pays the dividends quarterly. These funds would be  
9 either profitably invested, or used to partially offset the  
10 need for the company to otherwise obtain external funding  
11 to operate the company. Either of these alternatives would  
12 improve profits, and therefore increase the growth rate ob-  
13 tained by the company that pays the dividends annually  
14 rather than quarterly. Therefore, the second invalid as-  
15 sumption in Dr. Morin's quarterly dividend analysis is that  
16 he assumes that funds retained in the business just sit  
17 there without producing any benefit to the company retain-  
18 ing that cash. This means that a DCF method based upon the  
19 assumption of annual dividend payments for a company that  
20 in reality makes quarterly dividend payments actually over-  
21 states the cost of equity because it assumes that all of  
22 the earnings in a given year are fully available for rein-  
23 vestment to cause growth.

24

25

1           Putting the above facts all together, it can be seen  
2 that the annual DCF model applied to data from a world that  
3 actually pays quarterly dividends overstates the cost of  
4 equity both because the dividend yield is over-stated and  
5 because the growth rate is overstated.

6

7       Q.   Have you proposed an adjustment to lower the allowed  
8 return on equity as a result of the impact the quarterly  
9 payment of dividends has on the computations?

10   A.   No.  To be conservative, I have chosen not to do this.  
11 However, I could understand why the Commission might wish  
12 to make such an adjustment to lower the allowed return on  
13 equity.

14

15   Q.   You said that the use of historic growth in dividends  
16 is not a helpful indicator of the growth expected by inves-  
17 tors in the future.  Does Dr. Morin recognize this?

18   A.   Apparently he does.  On page 17 of his testimony, he  
19 correctly states that:

20

21

22           The traditional DCF model assumes a constant average  
23 growth trend for both dividends and earnings, a stable  
24 dividend payout policy, a discount rate in excess of  
25 the expected growth rate, and a constant price-  
earnings multiple, which implies that growth in price  
is synonymous with growth in earnings and dividends.

1 When he presents his historic growth indicators, they have  
2 not all grown at the same rate. This means using any or  
3 all of these historic growth rates are not appropriate in  
4 what he calls the "traditional" DCF model, and what I  
5 prefer to call the simplified DCF model. Also important is  
6 that investors do not determine future growth based upon  
7 historic growth rates.

8

9 Q. Can you provide an example to demonstrate your point  
10 that investors do not rely upon historic growth in  
11 dividends to form future growth expectations?

12 A. Yes. For example, AT&T is a large, company that is  
13 familiar to sophisticated investors. Its stock price has  
14 performed admirably in recent years, and is now selling  
15 substantially in excess of book value. Yet, its dividend  
16 has remained at \$1.20 per share since 1984. With such a  
17 constant historic dividend rate, whatever method is used to  
18 compute historic growth in dividends, the answer is the  
19 same. Historic growth in dividends has been ZERO. If in-  
20 vestors formed dividend growth expectations based upon the  
21 historic change in dividends of AT&T, then the cost of  
22 equity to AT&T should simply equal its dividend yield.

23

24 Q. Is the cost of equity equal to the dividend yield of  
25 AT&T?

1 A. No. The dividend yield of AT&T is about 3%. In order  
2 to be willing to settle for a dividend yield of only 3%,  
3 investors must expect substantial growth in the future.  
4 Therefore, in the case of AT&T, the historic growth in  
5 dividends varies from actual investor expected future  
6 growth rates by many hundreds of basis points.

7

8 Q. Are there any electric companies you can mention that  
9 illustrate the same point?

10 A. Yes. Commonwealth Edison Company, a very large  
11 electric utility that services Chicago, Illinois and the  
12 surrounding communities has paid an annual dividend of  
13 \$3.00 per share, without change, since 1983. The dividend  
14 yield on Commonwealth Edison's common stock is slightly  
15 above 8%. If investors expected future growth in dividends  
16 would be equal to past growth, then the cost of equity  
17 would approximate 8%. Since it is obvious that the cost of  
18 equity to Commonwealth Edison is higher than 8%, investors  
19 must not be looking to the historic growth in dividends to  
20 formulate estimates of future growth.

21

22

23 Q. How do these examples compare to the problems in Dr.  
24 Morin's historical growth analysis?

25

1 A. While the distortions that result from using the his-  
2 toric growth in dividends as an indicator of future growth  
3 expectations are on average more subtle for the companies  
4 examined by Dr. Morin, the same conceptual errors influence  
5 his results.

6

7 Q. Can you point to evidence regarding the Southern Company  
8 which shows that investors expect future growth rates to be  
9 substantially different than the past?

10 A. Yes. One method relied upon by Dr. Morin to quantify  
11 investors future growth expectations for the Southern Com-  
12 pany was to use the five year historic growth in dividends  
13 as shown in Value Line, which happened to be 5% per year.  
14 He accepted this 5% historic growth in dividends as mean-  
15 ingful and directly included it in his answer even though  
16 in the column right next to the place he obtained the Value  
17 Line 5% growth, Value Line shows that it expects both earn-  
18 ings and dividend growth for the Southern Company to be  
19 only 1.5% for the next five years. (See page 198 of the  
20 March 23, 1990 issue of Value Line.) He did not use the  
21 1.5% growth expected by Value Line from 1986-88 to 1992-94.

22

23 Q. Is it true that he also relied upon the IBES consensus  
24 of analysts growth forecasts as an estimate of future  
25 growth?

1 A. Yes.

2

3 Q. Is this a proper approach?

4 A. Not the way Dr. Morin has applied it. I believe it is  
5 helpful to obtain an estimate of what analysts expect for  
6 the future by reviewing the data from sources such as IBES  
7 and Zack's, but one must take care in how that result is  
8 used in a DCF formula.

9

10 Q. Please explain.

11

12 A. The published growth rate is the consensus growth in  
13 earnings per share as expected by analysts from the most  
14 recently completed year to a point five years in the fu-  
15 ture. If the return on equity in the base year was lower  
16 or higher than the return on equity expected by analysts  
17 for the future, this five year growth rate would be propor-  
18 tionally higher or lower than the level sustainable into  
19 the future. Since the simplified, or "traditional" DCF  
20 model demands that the sustainable growth rate be used in  
21 order to obtain an accurate result, this IBES consensus  
22 growth rate should not merely be plugged into the DCF for-  
23 mula without further analysis.

24

25 Q. What further analysis should be done?

1 A. An analysis of the type I have done on Schedule 2, Page  
2 3 needs to be performed in order to make the analysts con-  
3 sensus growth rate proper. This analysis shows what earned  
4 return on equity must be anticipated by analysts in order  
5 to achieve the five year growth rate.

6

7 Q. Dr. Morin also presents a "b x r" growth estimate for  
8 the Southern Company. Please comment on this.

9 A. The b x r approach, if properly evaluated, is fundamen-  
10 tally sound.

11 While there is room for some improvement in the way  
12 he applied this approach, the theoretical basis for his "b  
13 x r" computation is far superior to the other methods he  
14 presented.

15

16 Q. He says on page 34 of his testimony that the problem  
17 with the b x r approach is that it "requires an estimate of  
18 ROE to be implemented". ROE stands for return on equity.  
19 He thinks this is a "... logical trap...". Is this cor-  
20 rect?

21 A. No. The "b x r" method does require an estimate of the  
22 future expected ROE, but this is NOT a "logical trap..."  
23 because the future expected ROE is NOT the same as the cost  
24 of equity. The DCF method is used to compute the cost of  
25 equity based upon future expected cash flows.

1           Since future expected cash flows are highly dependent  
2 upon the future actual level of ROE earned, this is a  
3 critical number to examine in the determination of future  
4 cash flows. It is not a "... logical trap..." to recog-  
5 nized that the DCF method is dependent upon future cash  
6 flows. After all, DCF stands for Discounted Cash Flow, and  
7 the cash flows to be discounted are future cash flows.

8           The advantage of the "b x r" method over the other  
9 methods proposed by Dr. Morin is that it causes the analyst  
10 to directly analyze the causes of future cash flow and to  
11 do so in a manner consistent with the demands of the  
12 "traditional" version of the DCF formula. Therefore, at  
13 least if the analyst does properly estimate the return on  
14 equity anticipated by investors, the DCF formula will  
15 properly estimate the cost of equity being demanded by in-  
16 vestors. But, of course, the analyst must perform research  
17 and employ careful thought to the determination of what  
18 return on equity is expected by investors. This is because  
19 the quality of the answer from the DCF method is propor-  
20 tional to the quality of the estimate of future cash flow  
21 expected by investors, a statement that is true whether it  
22 is the "b x r" method, the historic growth in dividends  
23 method, or any other method.

24

25

1 Q. What return on equity did Dr. Morin feel was an-  
2 ticipated by the investors in the Southern Company?

3 A. He concluded that the future earned return on equity  
4 for the Southern Company as published by Value Line should  
5 be used as the value for "r" in the "b x r" growth computa-  
6 tion.

7

8 Q. Is this proper?

9 A. I believe that it is valid to consider what Value Line  
10 forecasts, and have in part relied upon that number myself.  
11 As is explained earlier in this testimony, I believe that  
12 other factors such as the current returns on equity being  
13 allowed to utility companies and the return on equity that  
14 has to be earned in order for an analysts growth rate con-  
15 sensus number (such as that compiled by either IBES or  
16 Zack's) is also worthy of examination. It should be  
17 pointed out that since Dr. Morin prepared his testimony,  
18 Value Line has lowered its estimate of the future an-  
19 ticipated return on equity to be earned by the Southern  
20 Company from 13.0% to 12.5%. Nevertheless, in this case  
21 the 13.0% future expected return on equity (not the cost of  
22 equity) selected by Dr. Morin for use in the "b x r" ap-  
23 proach is within the 12.5% to 13.0% range. In fact, my

24

25

1 growth computations for the Southern Company are also based  
2 upon the future cash flow that would be derived from a fu-  
3 ture return on equity of 13.0%.

4

5 Q. Dr. Morin used a retention rate expectation as forecast  
6 by Value Line of 27.69%, yet you used a retention rate of  
7 24.35%. Which is correct?

8 A. The 24.35% is correct because it is consistent with the  
9 dividend rate used in the computation of the dividend yield  
10 portion of the DCF formula. Of lesser import is the fact  
11 that it is also closer to the retention rate that is now  
12 projected by Value Line based upon its updated return on  
13 equity expectation.

14

15 Q. Does the proper application of the DCF formula require  
16 that the assumption used for the retention rate be consis-  
17 tent with the dividend yield computation?

18 A. Yes. Remember that the simplified, or "traditional" DCF  
19 formula requires an assumption of a constant future payout  
20 ratio. The importance of this can be understood by recog-  
21 nizing that each dollar of expected earnings should be  
22 valued once and only once, either as part of the dividend  
23 rate or as part of the future growth rate. If the future  
24 payout ratio is different that the payout ratio consistent

25

1 with sustainable ROE expectations, there will be an incon-  
2 sistent and therefore improper re-distribution of the total  
3 return allocation between D/P and g.

4

5 Q. How can you tell your retention rate is consistent  
6 with the dividend yield?

7 A. It is consistent because it was computed to be so. For  
8 example, at December 31, 1989 the book value of the stock  
9 of the Southern Company was estimated by Value Line to be  
10 about \$21.75. If the 13.0% return on equity is expected  
11 by investors, then earnings per share based upon the cur-  
12 rent book value has to be expected by investors to be  
13 \$21.75 times 13.0%, or \$2.83. The dividend rate upon which  
14 the dividend yield is computed is \$2.14 per share, meaning  
15 that if the normal, sustainable earnings per share inves-  
16 tors expect is now about \$2.83, the earnings left for  
17 retention after paying the dividend is \$2.83 minus 2.14, or  
18 \$0.69 per share. This represents a retention rate of  
19 24.38%, or virtually identical to the retention rate I ac-  
20 tually used. If the retention rate of 27.69% as used by  
21 Dr. Morin were correct, then he should have computed a  
22 dividend yield based upon a dividend rate consistent with  
23 this retention rate. Based upon the retention rate used by  
24 Dr. Morin, the dividend rate should have been only \$2.05,  
25 not \$2.14. This seemingly small difference caused him to

1 have about a 35 basis point higher dividend yield than if  
2 he had used a dividend rate consistent with his own reten-  
3 tion rate assumption.

4 While an error that causes the cost of equity to be  
5 overstated by only 35 basis points is small in comparison  
6 to the problems introduced by Dr. Morin from his histori-  
7 cal growth rate DCF studies, this additional error is un-  
8 necessary. The degree of precision obtainable from the DCF  
9 method can and should be confined to the analysts deter-  
10 mination of what the future expected return on equity will  
11 be.

12

13 Q. Did Dr. Morin also apply his DCF method to a group of  
14 comparable companies?

15 A. Yes.

16

17 Q. Did he use the same method for these companies?

18 A. No. He used historic growth, and analysts forecasts of  
19 growth, but he did not use the "b x r" method. The  
20 elimination of this method caused him to effectively give  
21 even more weight to the particularly invalid historic  
22 growth method.

23

24 Q. What growth rate did he arrive at for his comparable  
25 companies?

1 A. 4.44%, which is based upon the average of 5.24% he ob-  
2 tained from the historical dividend growth rate and 3.63%  
3 from merely averaging the raw consensus growth rate as com-  
4 piled by IBES (See his Schedule 5, Pages 1 and 2).

5

6 Q. If he had used the same "b x r" method as he did for  
7 the Southern Company for his compatible companies, what  
8 growth estimate would be obtained?

9 A. As shown on my Schedule 12, pages 1 and 2, he would have  
10 obtained a growth of 3.50%, or 0.94% lower than he ac-  
11 tually used with his comparable companies.

12

13 Q. How did you obtain this 3.50% "b x r" growth for Dr.  
14 Morin's comparable companies?

15 A. I used exactly the same method as presented by Dr.  
16 Morin. Both the future expected return on equity and the  
17 retention rate was obtained from the Value Line report for  
18 each of his companies. The retention rate and the return  
19 on equity were multiplied together to arrive at the growth  
20 rate. Then, each of the growth rates were averaged. The  
21 details of this procedure are shown on Schedule 12 of this  
22 testimony.

23

24 RISK PREMIUM

25

1 Q. Is it true that Dr. Morin presents a risk premium  
2 analysis in addition to his DCF analysis?

3 A. Not really. He presents a group of analyses that he  
4 refers to as risk premium, but all of the results rely upon  
5 answers from his DCF computations. Therefore, his risk  
6 premium approach is in actuality only his DCF analysis with  
7 even more improper assumptions layered on top. The end  
8 result is that his risk premium results are even less reli-  
9 able than his DCF based conclusions.

10

11 Q. What are the additional assumptions that make his Risk  
12 Premium approach even less useful than his DCF analysis?

13 A. He assumes that the risk premium is constant in all  
14 years, and assumes that the federal income tax rates have  
15 also been constant. In reality, income tax laws, the fu-  
16 ture expectations for inflation, and the general supply and  
17 demand for deferent capital types has not been constant.  
18 Therefore it is inappropriate to conclude that whatever was  
19 the historic risk premium would be applicable to the cur-  
20 rent environment.

21

22

23

24

25

Recommended Cost of Capital			
	Percent of Capital	Cost Rate	Weighted Cost
Long-term Debt	35.72%	8.72%	3.12%
Long-term Note	0.00%	0.00%	0.00%
Short-term Debt	0.46%	8.00%	0.04%
Preferred Stock	5.99%	7.75%	0.46%
Common Equity	31.80%	11.75%	3.74%
Customer Deposits	1.70%	7.65%	0.13%
Deferred Taxes	19.81%	0.00%	0.00%
Investment Credit-Zero Cost	0.09%	0.00%	0.00%
Investment Credit- Weighted Cost	4.43%	10.48%	0.46%
	100.00%		7.95%

Company Requested Capital Structure			
	Before Adjustments	After Adjustments	After Adjustments
Long-term Debt	439,734	109,798	329,936
Long-term Note	42,089	42,089	0
Short-term Debt	4,432	142	4,290
Preferred Stock	67,432	12,116	55,316
Common Equity	367,404	73,749	293,655
Customer Deposits	15,775	116	15,659
Deferred Taxes	203,823	20,864	182,959
Investment Credit-Zero Cost	858	27	831
Investment Credit- Wtd. Cost	48,068	7,152	40,916
<b>TOTAL</b>	<b>1,189,615</b>	<b>266,053</b>	<b>923,562</b>

Company Requested Cost of Capital					
	Percent:	Percent of Capital	Wtd. Cost	Total Cost	
Long-term Debt	36.96%	41.27%	35.72%	8.72%	3.12%
Long-term Note	3.54%	15.82%	0.00%		0.00%
Short-term Debt	0.37%	0.05%	0.46%	8.00%	0.04%
Preferred Stock	5.67%	4.55%	5.99%	7.75%	0.46%
Common Equity	30.88%	27.72%	31.80%	13.00%	4.13%
Customer Deposits	1.33%	0.04%	1.70%	7.65%	0.13%
Deferred Taxes	17.13%	7.84%	19.81%		0.00%
Investment Credit-Zero Cost	0.07%	0.01%	0.09%		0.00%
Investment Credit- Wtd. Cost	4.04%	2.69%	4.43%	10.48%	0.46%
<b>TOTAL</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>		<b>8.34%</b>

Investor Supplied Capital Only:			
Long-term Debt	47.74%	46.15%	48.29%
Long-term Note	4.57%	17.69%	0.00%
Short-term Debt	0.48%	0.06%	0.63%
Preferred Stock	7.32%	5.09%	8.10%
Common Equity	39.89%	31.00%	42.98%
<b>TOTAL</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

## Cost of Equity

	Southern Company	Non-nuclear const. Electric Companies
Cost of Equity Indicated by DCF Method	11.52% [A]	11.12% [B]
Financing Costs	0.24%	0.24% [C]
Capital Structure Adjustment		0.40% [D]
	11.76%	11.76%
Round to:	11.75%	11.75%

## Source:

[A]	Midpoint of 11.49% to	11.55% per	Schedule 2, P.1
[B]	Midpoint of 11.14% to	11.10% per	Schedule 3, P.1
[C]	Per text		
[D]	Cost of equity adjustment to account for difference in capital structure between Southern Company and comparative electric companies, see Schedule 8, Page 1		

THE SOUTHERN COMPANY  
DISCOUNTED CASH FLOW (DCF) INDICATED COST OF EQUITY

Schedule 2, P.1

Based on Market Average for Year

Based on Year-end Market Price

Basis for Future Expected	High	Low	Recommended	High	Low	Recommended	
							Return on Equity
1 Dividend Yield On Market Price [A]		8.09%	8.09%	8.09%	8.15%	8.15%	8.15%
2 Retention Ratio:							
a) Market-to-book [A]		1.21	1.21	1.21	1.20	1.20	1.20
b) Div. Yld on Book [B]		9.78%	9.78%	9.78%	9.78%	9.78%	9.78%
c) Return on Equity [C]		13.50%	12.50%	13.00%	13.50%	12.50%	13.00%
d) Retention Rate [D]		27.57%	21.77%	24.78%	27.57%	21.77%	24.78%
3 Reinvestment Growth [E]		3.72%	2.72%	3.22%	3.72%	2.72%	3.22%
4 New Financing Growth [F]		0.05%	0.05%	0.05%	0.04%	0.04%	0.04%
5 Total Estimate of Investor Anticipated Growth [G]		3.77%	2.77%	3.27%	3.77%	2.77%	3.27%
6 Increment to Dividend Yield for Growth to Next Year [H]		0.15%	0.11%	0.13%	0.15%	0.11%	0.13%
7 Indicated Cost of Equity [I]		12.02%	10.97%	11.49%	12.07%	11.03%	11.55%

## Sources:

[A] Schedule 2, Page 2

[B] Line 1 x Line 2a

[C] Schedule 2, Page 2 and Schedule 2, Page 3  
Zack's fro Schedule 2, Page 3

[D] 1- Line 2b/Line 2c

[E] Line 2c x Line 2d

[F] Estimated impact of dilution or premium due to sale of equity at other than book value. Computed based upon Value Line forecast of future external financing.

$$\frac{M/B \times (\text{Ext. Fin Rate} + 1)}{M/B + \text{Ext. Fin. Rate} - 1} \text{Ext. Fin. rate used} = 0.27\% \text{ [J]}$$

[G] Line 3 + Line 4

[H] Line 1 x one-half of line 5

[I] Line 1 + Line 5 + Line 6

[J] Based upon rate of growth in no. of shares outstanding as forecast by Value Line.

Schedule 2, Page 2

FINANCIAL DATA ON  
THE SOUTHERN COMPANY

	\$1.73	\$1.83	\$1.95	\$2.07	\$2.13	\$2.14		Y/E Mar-90	AT Mar-90	
	1983	1984	1985	1986	1987	1988	1989			
Market Price- High	\$17.80	\$18.90	\$23.30	\$27.30	\$29.00	\$24.30	\$29.75	\$29.75		
Market Price- Low	\$14.50	\$14.40	\$17.90	\$20.40	\$17.90	\$20.40	\$22.00	\$23.13		
Average	\$16.15	\$16.65	\$20.60	\$23.85	\$23.45	\$22.35	\$25.88	\$26.44	\$26.25	
Book Value , Y/E	\$17.60	\$18.55	\$19.83	\$21.09	\$20.89	\$21.18	\$21.75 E	\$21.89	\$21.89	25% of Eps-Dps
Book Value, Avg.		\$18.08	\$19.19	\$20.46	\$20.99	\$21.04	\$21.47			
Earnings Per Share	\$2.72	\$3.00	\$3.20	\$3.17	\$2.71	\$2.72	\$2.68			
Dividends Per Share	\$1.73	\$1.83	\$1.95	\$2.07	\$2.13	\$2.14	\$2.14	\$2.14	\$2.14	
Dividend Yield	10.71%	10.99%	9.47%	8.68%	9.08%	9.57%	8.27%	8.09%	8.15%	
Return on Equity		16.60%	16.68%	15.49%	12.91%	12.93%	12.49%			
Market-to-Book		0.92	1.07	1.17	1.12	1.06	1.21	1.21	1.20	

Value Line Future Expected Return on Equity: 12.5%

Source: Value Line, March 23, 1990, P. 198.

Schedule 2, Page 3

Earned Return on Equity  
 THE SOUTHERN COMPANY  
 Needs to Earn  
 To Achieve Zack's Consensus Growth Rate

Mean Growth Rate= 2.70%

	Book Value	Earnings Per Share	Dividends Per Share	Return on Equity
1988 Actual	\$21.18	\$2.72	\$2.14	
1989	\$21.78	\$2.79	\$2.20	13.01%
1990	\$22.39	\$2.87	\$2.26	12.99%
1991	\$23.02	\$2.95	\$2.32	12.98%
1992	\$23.66	\$3.03	\$2.38	12.97%
1993	\$24.32	\$3.11	\$2.44	12.95%

Note: Both earnings per share and dividends per share have been grown at Zack's consensus growth rate. Return on equity was computed by dividing earnings per share by average of current and prior year's book value.

NON-NUCLEAR CONSTRUCTION ELECTRIC UTILITIES  
DISCOUNTED CASH FLOW (DCF) INDICATED COST OF EQUITY

Schedule 3, P.1

Based on Market Average for Year

Based on Year-end Market Price

Basis for Future Expected Return on Equity	Zack's			Zack's		
	Consensus	Value Line	Recommended Expectation	Consensus	Value Line	Recommended Expectation
1 Dividend Yield On Market Price [A]	7.11%	7.11%	7.11%	6.87%	6.87%	6.87%
2 Retention Ratio:						
a) Market-to-book [A]	1.42	1.42	1.42	1.44	1.44	1.44
b) Div. Yld on Book [B]	10.08%	10.08%	10.08%	9.89%	9.89%	9.89%
c) Return on Equity [C]	13.84%	13.69%	13.90%	13.84%	13.69%	13.90%
d) Retention Rate [D]	27.18%	26.36%	27.49%	28.56%	27.76%	28.86%
3 Reinvestment Growth [E]	3.76%	3.61%	3.82%	3.95%	3.80%	4.01%
4 New Financing Growth [F]	0.07%	0.07%	0.07%	0.08%	0.08%	0.08%
5 Total Estimate of Investor Anticipated Growth [G]	3.84%	3.68%	3.89%	4.03%	3.88%	4.09%
6 Increment to Dividend Yield for Growth to Next Year [H]	0.14%	0.13%	0.14%	0.14%	0.13%	0.14%
7 Indicated Cost of Equity [I]	11.08%	10.92%	11.14%	11.04%	10.88%	11.10%

## Sources:

- [A] Schedule 4, Page 1 and  
Schedule 4, Page 2  
[B] Line 1 x Line 2a  
[C] Schedule 4, Page 1 and Schedule 6  
For recommended expectation, see text.  
[D] 1- Line 2b/Line 2c  
[E] Line 2c x Line 2d  
[F] Estimated impact of dilution or premium due to sale of equity at other than book value. Computed based upon  
result based upon the historical external financing rate.  
 $(M/B \times (\text{Ext. Fin Rate} + 1)) / (M/B + \text{Ext. Fin. Rate} - 1)$  Ext. Fin. rate used = 0.25% [J]  
[G] Line 3 + Line 4  
[H] Line 1 x one-half of line 5  
[I] Line 1 + Line 5 + Line 6  
[J] Schedule 5, Page 1

NUCLEAR CONSTRUCTION ELECTRIC UTILITIES  
DISCOUNTED CASH FLOW (DCF) INDICATED COST OF EQUITY

Schedule 3, P. 2

Based on Market Average for Year

Based on Year-end Market Price

Basis for Future Expected :::	Zack's Return on Equity :::	Value			Value		
		Consensus	Line	Recommended Expectation	Consensus	Line	Recommended Expectation
1 Dividend Yield On Market Price	[A]	8.76%	8.76%	8.76%	8.82%	8.82%	8.82%
2 Retention Ratio:							
a) Market-to-book	[A]	1.15	1.15	1.15	1.14	1.14	1.14
b) Div. Yld on Book	[B]	10.10%	10.10%	10.10%	10.09%	10.09%	10.09%
c) Return on Equity	[C]	12.32%	12.56%	12.50%	12.32%	12.56%	12.50%
d) Retention Rate	[D]	18.08%	19.63%	19.23%	18.14%	19.69%	19.29%
3 Reinvestment Growth	[E]	2.23%	2.47%	2.40%	2.24%	2.47%	2.41%
4 New Financing Growth	[F]	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%
5 Total Estimate of Investor Anticipated Growth	[G]	2.26%	2.50%	2.44%	2.27%	2.50%	2.44%
6 Increment to Dividend Yield for Growth to Next Year	[H]	0.10%	0.11%	0.11%	0.10%	0.11%	0.11%
7 Indicated Cost of Equity	[I]	11.12%	11.37%	11.31%	11.18%	11.43%	11.37%

## Sources:

[A] Schedule 4, Page 1 and  
Schedule 4, Page 2

[B] Line 1 x Line 2a

[C] Schedule 4, Page 1 and Schedule 6  
For recommended expectation, see text.

[D] 1- Line 2b/Line 2c

[E] Line 2c x Line 2d

[F] Estimated impact of dilution or premium due to sale of equity at other than book value. Computed based upon  
result based upon the historical external financing rate.
$$\frac{M/B \times (\text{Ext. Fin Rate} + 1)}{(M/B + \text{Ext. Fin. Rate} - 1) \text{Ext. Fin. rate used}} = 0.70\% \text{ [J]}$$

[G] Line 3 + Line 4

[H] Line 1 x one-half of line 5

[I] Line 1 + Line 5 + Line 6

[J] Schedule 5, Page 6

## Moody's 24 Electric Utility Companies

Schedule 4, Page 1

## Selected Financial Data

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	
	Nuc.	Book	Book		At	Market	Price	Market	to Book		Dividend	Yield	
	Const?	Per Sh.	Per Sh.	Book	Mar-90	High for	Low for	Year	Avg.	Div.	Year	Avg.	
		Dec.87	Dec.88	Dec. 89		Year	Year	End	for	Rate	End	for	
									Year			Year	
	[A]	[A]	[A]	[B]	[C]	[C]	[C]	[D]	[D]	[C]	[E]	[E]	
Non-nuclear construction companies:													
Baltimore Gas and Electri	No	\$22.24	\$23.77		\$24.91	\$29.88	\$34.88	\$28.50	1.20	1.33	\$2.10	7.03%	6.63%
Boston Edison	No	\$19.35	\$19.38	E	\$16.70	\$19.25	\$22.13	\$15.50	1.15	0.97	\$1.52	7.90%	8.08%
Carolina Power and Light	No	\$29.85	\$28.67	E	\$27.75	\$44.13	\$48.00	\$35.13	1.59	1.45	\$2.92	6.62%	7.03%
Central Maine Power	No	\$15.12	\$16.04		\$15.75	\$19.50	\$20.63	\$16.88	1.24	1.17	\$1.56	8.00%	8.32%
Con Edison of New York	No	\$17.59	\$18.44	E	\$19.20	\$26.00	\$29.88	\$22.50	1.35	1.42	\$1.82	7.00%	6.95%
Delmarva Power & Light	No	\$13.01	\$13.28		\$13.68	\$19.63	\$21.38	\$17.13	1.43	1.45	\$1.54	7.85%	8.00%
Detroit Edison	No	\$19.90	\$15.17	E	\$16.15	\$25.13	\$26.13	\$17.63	1.56	1.44	\$1.78	7.08%	8.14%
Florida Progress Corp.	No	\$24.77	\$25.80		\$26.79	\$37.63	\$40.50	\$33.38	1.40	1.43	\$2.64	7.02%	7.15%
Idaho Power Corp.	No	\$17.29	\$16.81	E	\$17.35	\$26.88	\$30.00	\$23.00	1.55	1.58	\$1.86	6.92%	7.02%
IPALCO Enterprises	No	\$17.06	\$18.06	E	\$18.90	\$24.63	\$26.63	\$21.88	1.30	1.34	\$1.80	7.31%	7.42%
Oklahoma G&E	No	\$20.11	\$21.01	E	\$21.10	\$36.00	\$39.25	\$32.13	1.71	1.70	\$2.48	6.89%	6.95%
Pacific Gas & Elect.	No	\$18.68	\$16.79	E	\$17.35	\$21.88	\$22.88	\$17.50	1.26	1.20	\$1.52	6.95%	7.53%
Pennsylvania Power & Ligh	No	\$26.27	\$27.24		\$28.36	\$41.88	\$43.38	\$34.38	1.48	1.43	\$2.98	7.12%	7.67%
Public Service of Colorad	No	\$16.35	\$16.49	E	\$16.85	\$23.38	\$27.00	\$20.00	1.39	1.43	\$2.00	8.56%	8.51%
SCE Corp.	No	\$23.13	\$23.18	E	\$24.20	\$37.25	\$41.00	\$31.00	1.54	1.55	\$2.56	6.87%	7.11%
TECO	No	\$13.98	\$14.59		\$15.45	\$28.88	\$29.50	\$22.63	1.87	1.79	\$1.52	5.26%	5.83%
<b>AVERAGE</b>		<b>\$19.67</b>	<b>\$19.67</b>		<b>\$20.03</b>				<b>1.44</b>	<b>1.42</b>	<b>\$2.04</b>	<b>7.15%</b>	<b>7.40%</b>
Nuclear Construction Companies:													
Central Hudson G&E	Yes	\$20.35	\$21.24		\$21.76	\$22.38	\$24.13	\$20.38	1.03	1.05	\$1.76	7.87%	7.91%
Cincinnati Gas and Elect.	Yes	\$20.49	\$22.94	E	\$24.55	\$29.88	\$32.38	\$24.75	1.22	1.25	\$2.40	8.03%	8.40%
Centerior	Yes	\$22.10	\$19.68	E	\$20.05	\$19.13	\$21.13	\$15.38	0.95	0.93	\$1.60	8.37%	8.77%
Commonwealth Edison	Yes	\$33.27	\$32.86	E	\$30.05	\$34.75	\$40.75	\$32.38	1.16	1.11	\$3.00	8.63%	8.21%
DPL Inc.	Yes	\$19.61	\$20.45	E	\$22.10	\$29.00	\$30.88	\$24.13	1.31	1.34	\$2.34	8.07%	8.51%
Houston Industries	Yes	\$28.33	\$28.75	E	\$28.45	\$33.38	\$35.88	\$26.88	1.17	1.09	\$2.96	8.87%	9.43%
Northeast Utilities	Yes	\$16.53	\$16.90		\$16.15	\$20.75	\$23.00	\$19.00	1.28	1.24	\$1.76	8.48%	8.38%
Philadelphia Elect.	Yes	\$17.20	\$17.39		\$17.51	\$18.00	\$24.50	\$17.38	1.03	1.20	\$2.20	12.22%	10.51%
<b>AVERAGE</b>		<b>\$22.24</b>	<b>\$22.53</b>		<b>\$22.58</b>				<b>1.14</b>	<b>1.15</b>	<b>\$2.25</b>	<b>8.82%</b>	<b>8.76%</b>

Sources: [A] Most current Value Line at time of prep. of Note: Technically, Cincinnati G&E and DPL, Inc. are no longer eng. in nuc. construction.  
 [B] Value Line, Most recent editions as of 3/13 The Zimmer plant has been converted to coal. However, it started as a nuclear plant and  
 [C] NY Times 12/31/89 is sub. to a cost cap. Therefore, these comp. were left in the nuc. const. category. Also,  
 [D] Market price divided by book value Ft. St. Vrain plant of P.S. Col. was in op., but is being shut down for decomm. or conv.  
 [E] Dividend rate divided by market price E=Estimated by Value Line

Moody's 24 Electric Utility Companies  
Earnings Per Share and Return on Equity

Schedule 4, Page 2

	(1) EPS 1988	(2) EPS 1989	(3) Return on Eq. 1989	(4) Value Line Future Exp. Return on Equity	Return on Equity 1988
	(A)	(A)	(B)	(A)	
<b>Non-nuclear construction companies:</b>					
Baltimore Gas and Electric	\$3.47	\$3.05	12.53%	13.50%	15.08%
Boston Edison	\$1.86	\$1.76	9.76%	12.00%	12.00%
Carolina Power and Light	\$3.93	\$4.20	14.89%	14.00%	13.43%
Central Maine Power	\$1.83	\$1.92	12.08%	12.50%	12.00%
Con Edison of New York	\$2.47	\$2.49	13.23%	13.50%	13.71%
Delmarva Power & Light	\$1.70	\$1.80	13.35%	13.00%	12.93%
Detroit Edison	\$2.31	\$2.65	E 16.92%	16.00%	13.17%
Florida Progress Corp.	\$3.52	\$3.58	13.61%	14.50%	13.92%
Idaho Power Corp.	\$1.32	\$2.37	13.88%	13.00%	7.74%
IPALCO Enterprises	\$2.64	\$2.55	E 13.80%	12.50%	15.03%
Oklahoma G&E	\$3.20	\$2.95	E 14.01%	15.00%	15.56%
Pacific Gas & Elect.	\$2.56	\$1.90	11.13%	13.50%	14.43%
Pennsylvania Power & Light	\$3.73	\$4.05	14.57%	14.00%	13.94%
Public Service of Colorado	\$2.95	\$2.27	13.62%	13.50%	17.97%
SCE Corp.	\$3.49	\$3.56	15.03%	14.00%	15.07%
TECO	\$2.13	\$2.36	15.71%	14.50%	14.91%
<b>Average</b>	<b>\$2.69</b>	<b>\$2.72</b>	<b>13.63%</b>	<b>13.69%</b>	<b>13.81%</b>
<b>Nuclear Construction Companies:</b>					
Central Hudson G&E	\$2.63	\$2.28	10.60%	11.50%	12.65%
Cincinnati Gas and Elect.	\$4.32	\$4.00	E 16.85%	12.00%	19.89%
Centerior	\$1.76	\$1.95	E 9.82%	11.00%	8.43%
Commonwealth Edison	\$3.01	\$2.70	E 8.58%	13.50%	9.10%
DPL Inc.	\$3.01	\$3.30	E 15.51%	14.50%	15.03%
Houston Industries	\$3.34	\$2.60	E 9.09%	13.50%	11.70%
Northeast Utilities	\$2.07	\$1.87	11.32%	13.00%	12.38%
Philadelphia Elect.	\$2.33	\$2.49	14.27%	11.50%	13.47%
<b>Average</b>	<b>\$2.81</b>	<b>\$2.65</b>	<b>12.00%</b>	<b>12.56%</b>	<b>12.83%</b>

Source: [A] Value Line  
 [B] Earnings Per Share divided by average book value. Book value shown on  
 Schedule 4, Page 1  
 E= Estimated by Value Line

**NON-NUCLEAR CONSTRUCTION  
EXTERNAL FINANCING RATE  
(Millions of Shares)**

Common Stock Outstanding	1989	1992-94	Compound Annual Growth
Baltimore G & E	80.35	80.50	0.05%
Boston Edison	38.50 E	41.00	1.59%
Carolina Power	87.19	80.60	-1.95%
Central Maine Power	25.88	26.15	0.26%
Con Edison	228.10 E	228.10	0.00%
Delmarva Power	46.98	49.25	1.19%
Detroit Edison	146.85 E	147.00	0.03%
Florida Progress	51.05	51.50	0.22%
Idaho Power	34.00 E	34.00	0.00%
Ipalco	37.55 E	37.55	0.00%
Pacific G & E	428.00 E	450.00	1.26%
Pennsylvania P & L	75.42	76.25	0.27%
P.S. of Colorado	52.70 E	53.40	0.33%
SCE Corp.	218.50 E	218.50	0.00%
TECO	56.79	57.25	0.20%
	<u>107.19</u>	<u>108.74</u>	
	Average		0.23%
	Round to		0.25%

Source: Value Line

E= Estimated by Value Line

NUCLEAR CONSTRUCTION ELECTRIC UTILITIES  
EXTERNAL FINANCING RATE  
(Millions of Shares)

	Common Stock Outstanding:	1989	1992-94	Compound Annual Growth
Not done	Central Hudson	14.74	15.75	1.67%
Yes	Centerior Energy	139.70 E	139.00	-0.13%
Converting	Cincinnati Gas and Elect.	51.00 E	54.00	1.44%
Yes	Commonwealth Edison	213.00 E	211.00	-0.24%
Converting	DPL Inc.	45.30 E	47.50	1.19%
Yes	Houston Industries	126.25 E	130.00	0.73%
Yes	Northeast Utilities	108.65 E	109.00	0.08%
Yes	Philadelphia Electric	211.98	228.15	1.85%
		<u>113.83</u>	<u>116.80</u>	
Source:	Value Line	Average		0.67%
		Round to		0.70%

Schedule 7

Moody's 24 Electric Utilities  
Capital Structure Comparison

	12/31/89
	Percent
	Common
	Equity
<b>Non-nuclear construction companies:</b>	
Baltimore Gas and Electric	44.50%
Boston Edison	35.50% E
Carolina Power and Light	44.50% E
Central Maine Power	46.50% E
Con Edison of New York	54.50% E
Delmarva Power & Light	44.50%
Detroit Edison	32.00% E
Florida Progress Corp.	50.10%
Idaho Power Corp.	46.50% E
IPALCO Enterprises	53.00% E
Oklahoma G&E	49.00% E
Pacific Gas & Elect.	45.00% E
Pennsylvania Power & Light	37.80%
Public Service of Colorado	44.00% E
SCE Corp.	46.00% E
TECO	<u>54.40%</u>
Average	45.49%
 <b>Nuclear Construction Companies:</b>	
Central Hudson G&E	37.80%
Cincinnati Gas and Elect.	43.00% E
Centerior	39.50% E
Commonwealth Edison	46.00% E
DPL Inc.	47.00% E
Houston Industries	40.50% E
Northeast Utilities	36.00%
Philadelphia Elect.	<u>35.60%</u>
Average	40.68%

Source: Value Line

E= Estimated by Value Line

Return on Equity Implied in  
Zack's Consensus Growth Rates

Schedule 6

	Y/E Book Dec. 89	Earnings 1989	Dividends	Zack's Consensus 5 Year Growth Rate	Avg. Book in 1994 at Zack's Growth	Earnings 1994 at Zack's Growth	Return on Equity to achieve Zack's Growth
<b>Non-nuclear construction companies:</b>							
Baltimore Gas and Electric	\$24.91	\$3.05	\$2.10	4.70%	\$30.37	\$3.84	12.94%
Boston Edison	\$16.70	\$1.76	\$1.52	2.00%	\$17.97	\$1.94	10.92%
Carolina Power and Light	\$27.75	\$4.20	\$2.92	3.40%	\$34.83	\$4.96	14.50%
Central Maine Power	\$15.75	\$1.92	\$1.56	2.50%	\$17.69	\$2.17	12.44%
Con Edison of New York	\$19.20	\$2.49	\$1.82	4.40%	\$23.02	\$3.09	13.72%
Delmarva Power & Light	\$13.68	\$1.80	\$1.54	2.40%	\$15.08	\$2.03	13.61%
Detroit Edison	\$16.15	\$2.65	\$1.78	2.90%	\$20.89	\$3.06	14.85%
Florida Progress Corp.	\$26.79	\$3.58	\$2.64	3.70%	\$32.04	\$4.29	13.65%
Idaho Power Corp.	\$17.35	\$2.37	\$1.86	2.00%	\$20.06	\$2.62	13.18%
IPALCO Enterprises	\$18.90	\$2.55	\$1.80	3.50%	\$23.06	\$3.03	13.37%
Oklahoma G&E	\$21.10	\$2.95	\$2.48	3.40%	\$23.70	\$3.49	14.97%
Pacific Gas & Elect.	\$17.35	\$1.90	\$1.52	8.10%	\$19.76	\$2.80	14.79%
Pennsylvania Power & Light	\$28.36	\$4.05	\$2.98	3.90%	\$34.37	\$4.90	14.55%
Public Service of Colorado	\$16.85	\$2.27	\$2.00	1.60%	\$18.27	\$2.46	13.56%
SCE Corp.	\$24.20	\$3.56	\$2.56	3.90%	\$29.82	\$4.31	14.74%
TECO	\$15.45	\$2.36	\$1.52	5.70%	\$20.43	\$3.11	15.69%
						<b>Average</b>	<b>13.84%</b>
<b>Nuclear Construction Companies:</b>							
Central Hudson G&E	\$21.76	\$2.28	\$1.76	3.80%	\$24.67	\$2.75	11.35%
Cincinnati Gas and Elect.	\$24.55	\$4.00	\$2.40	2.60%	\$33.20	\$4.55	13.88%
Centerior	\$20.05	\$1.95	\$1.60	2.30%	\$21.92	\$2.18	10.08%
Commonwealth Edison	\$30.05	\$2.70	\$3.00	3.80%	\$28.37	\$3.25	11.69%
DPL Inc.	\$22.10	\$3.30	\$2.34	3.30%	\$27.40	\$3.88	14.41%
Houston Industries	\$28.45	\$2.60	\$2.96	1.60%	\$26.56	\$2.81	10.68%
Northeast Utilities	\$16.15	\$1.87	\$1.76	2.30%	\$16.74	\$2.10	12.66%
Philadelphia Elect.	\$17.51	\$2.49	\$2.20	1.00%	\$19.00	\$2.62	13.84%
						<b>Average</b>	<b>12.32%</b>

**ELECTRIC COMPANIES**  
**ANALYSIS OF EFFECT OF LEVERAGE ON OVERALL COST OF CAPITAL**  
**REQUIRED CHANGE IN COST OF EQUITY TO KEEP**  
**OVERALL COST OF CAPITAL CONSTANT**

Constant Revenue Requirement on Rate Base

Bond Rating	Ratio	Marginal Cost	Weighted Cost	Pre-tax Cost	Change per Percent Increase in Common Equity
BBB Equity, Common	39.00%	12.00%	4.68%	7.09%	
Equity, Preferred	10.00%	9.00%	0.90%	1.36%	
Debt	51.00%	10.00%	5.10%	5.10%	
			10.68%	13.55%	
A Equity, Common	41.00%	11.99%	4.92%	7.45%	
Equity, Preferred	10.00%	8.75%	0.88%	1.33%	
Debt	49.00%	9.75%	4.78%	4.78%	
			10.57%	13.55%	0.005%
A+ Equity, Common	44.00%	11.73%	5.16%	7.82%	
Equity, Preferred	10.00%	8.63%	0.86%	1.31%	
Debt	46.00%	9.63%	4.43%	4.43%	
			10.45%	13.55%	0.087%
AA Equity, Common	47.00%	11.48%	5.40%	8.18%	
Equity, Preferred	10.00%	8.50%	0.85%	1.29%	
Debt	43.00%	9.50%	4.09%	4.09%	
			10.33%	13.55%	0.083%
AAA Equity, Common	50.00%	11.35%	5.68%	8.60%	
Equity, Preferred	10.00%	8.25%	0.83%	1.25%	
Debt	40.00%	9.25%	3.70%	3.70%	
			10.20%	13.55%	0.043%
AAA Equity, Common	55.00%	10.87%	5.98%	9.06%	
Equity, Preferred	10.00%	8.25%	0.83%	1.25%	
Debt	35.00%	9.25%	3.24%	3.24%	
			10.04%	13.55%	0.096%

## Schedule 9

Common Stock Cost of Floatation  
For the Utility Industry

<u>Size of Issue (\$ Millions)</u>	<u>Number of Issues Surveyed</u>	<u>Compensation on as Percent of Proceeds</u>	<u>Other Costs as Percent of Proceeds</u>	<u>Total Financing Costs as Per- cent of Proceeds</u>
0.5 - 0.99	1	15.00	3.66	18.66
1.0 - 1.99	3	5.46	3.34	8.80
2.0 - 4.99	2	5.91	3.09	9.00
3.0 - 9.99	14	3.87	0.90	4.77
10.0-19.99	20	3.24	0.51	3.75
20.0-49.99	34	3.16	0.32	3.48
50.0-99.99	15	3.19	0.23	3.42
100-499.99	8	2.57	0.13	2.70
Over 500.00	0	-	-	-

Source: Cost of Flotation of Registered Issues 1971-72, December 1974,  
Securities and Exchange Commission, Table A-8

RETURN ON EQUITY, MARKET-TO-BOOK AND EARNED RISK PREMIUM  
 OF DOW JONES INDUSTRIALS FROM 1920 THROUGH 1987

Schedule 10, Page 1a

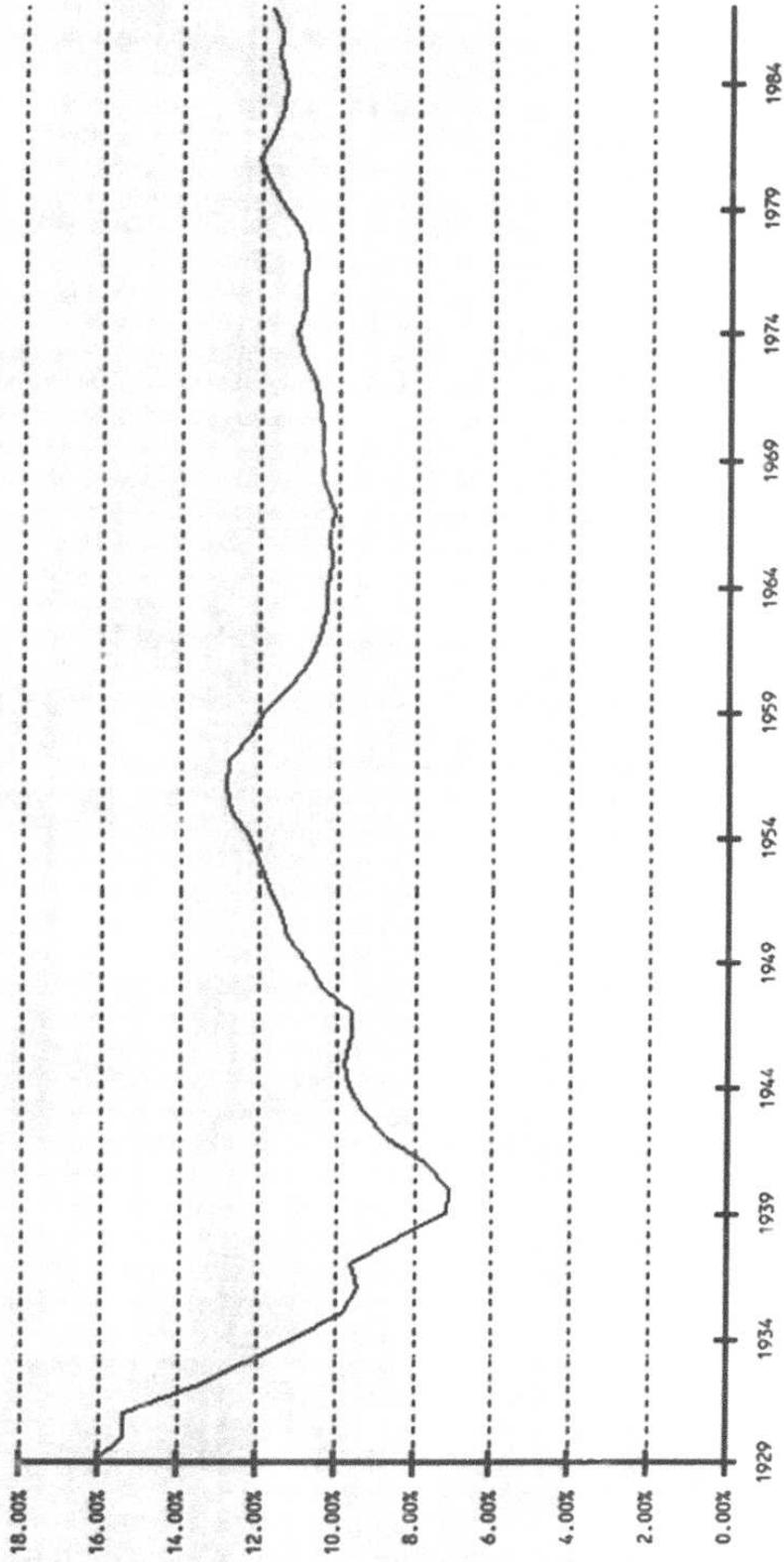
Year	DJ Book	DJIA Average	DJ Market Book	Aaa to Indust. Bond Rate	Earned Return on Book Equity		10 Yr Avg. Return on Book vs Aaa Ind. Bonds	
					Current	10Yr Avg.		
	[A]	[A]		[A]	[A]			
1920	48.2	90.0	1.87	6.10%	18.90%			
1921	46.4	73.0	1.57	6.00%	4.50%			
1922	51.6	93.0	1.80	5.10%	17.70%			
1923	55.3	94.0	1.70	5.10%	14.90%			
1924	61.0	100.0	1.64	5.00%	17.80%			
1925	69.4	134.0	1.93	4.90%	20.00%			
1926	75.2	152.0	2.02	4.70%	15.10%			
1927	77.9	175.0	2.25	4.60%	11.20%			
1928	84.1	227.0	2.70	4.50%	19.00%			
1929	91.3	311.2	3.41	4.80%	21.80%	16.09%	11.29%	
1930	91.2	236.3	2.59	4.50%	12.10%	15.41%	10.91%	
1931	86.9	138.6	1.59	4.60%	4.70%	15.43%	10.83%	
1932	81.8	64.6	0.79	5.00%	-0.60%	13.60%	8.60%	
1933	80.5	83.7	1.04	4.50%	2.10%	12.32%	7.82%	
1934	80.7	98.3	1.22	4.00%	4.80%	11.02%	7.02%	
1935	82.5	120.0	1.45	3.60%	7.70%	9.79%	6.19%	
1936	85.5	162.2	1.90	3.20%	11.80%	9.46%	6.26%	
1937	88.3	166.4	1.88	3.30%	13.00%	9.64%	6.34%	
1938	87.1	132.4	1.52	3.20%	6.90%	8.43%	5.23%	
1939	95.6	142.7	1.49	3.00%	9.50%	7.20%	4.20%	
1940	98.7	134.7	1.36	2.80%	11.10%	7.10%	4.30%	
1941	103.0	121.8	1.18	2.80%	11.30%	7.76%	4.96%	
1942	107.0	107.2	1.00	2.80%	8.60%	8.68%	5.88%	
1943	113.0	134.8	1.19	2.70%	8.60%	9.33%	6.63%	
1944	118.0	143.3	1.21	2.70%	8.50%	9.70%	7.00%	
1945	122.0	169.8	1.39	2.60%	8.60%	9.79%	7.19%	
1946	131.0	191.6	1.46	2.50%	10.40%	9.65%	7.15%	
1947	149.0	177.6	1.19	2.60%	12.60%	9.61%	7.01%	
1948	160.0	179.9	1.12	2.80%	14.40%	10.36%	7.56%	
1949	170.0	179.5	1.06	2.70%	13.80%	10.79%	8.09%	
1950	194.0	216.3	1.11	2.60%	15.80%	11.26%	8.66%	
1951	203.0	257.6	1.27	2.90%	13.10%	11.44%	8.54%	
1952	213.0	270.8	1.27	3.00%	11.60%	11.74%	8.74%	
1953	244.0	276.0	1.13	3.20%	11.10%	11.99%	8.79%	
1954	249.0	333.9	1.34	2.90%	11.30%	12.27%	9.37%	
1955	272.0	442.7	1.63	3.10%	13.20%	12.73%	9.63%	
1956	285.0	493.0	1.73	3.40%	11.70%	12.86%	9.46%	
1957	299.0	475.7	1.59	3.90%	12.10%	12.81%	8.91%	
1958	311.0	491.7	1.58	3.80%	9.00%	12.27%	8.47%	
1959	339.0	632.1	1.86	4.40%	10.10%	11.00%	7.50%	
1960	370.0	618.0	1.67	4.40%	8.70%	11.19%	6.79%	
1961	386.0	691.5	1.79	4.30%	8.30%	10.71%	6.41%	
1962	401.0	639.8	1.60	4.30%	9.10%	10.46%	6.16%	
1963	426.0	714.8	1.68	4.30%	9.70%	10.32%	6.02%	
1964	417.0	834.0	2.00	4.40%	11.10%	10.30%	5.90%	
1965	453.0	910.9	2.01	4.50%	11.80%	10.16%	5.66%	
1966	476.0	873.6	1.84	5.10%	12.10%	10.20%	5.10%	
1967	477.0	879.1	1.84	5.50%	11.30%	10.12%	4.62%	
1968	521.0	906.0	1.74	6.20%	11.10%	10.33%	4.13%	
1969	542.0	876.7	1.62	7.00%	10.50%	10.37%	3.37%	
1970	573.0	753.2	1.31	8.00%	8.90%	10.39%	2.39%	
1971	608.0	884.8	1.46	7.40%	9.10%	10.47%	3.07%	

## DJHIST.XLS

1972	643.0	950.7	1.48	7.20%	10.40%	10.60%	3.40% Schedule 10, Page 1b
1973	690.0	923.9	1.34	7.40%	12.50%	10.88%	3.48%
1974	747.0	759.4	1.02	8.60%	13.30%	11.10%	2.50%
1975	784.0	802.5	1.02	8.80%	9.70%	10.89%	2.09%
1976	798.0	974.9	1.22	8.40%	12.10%	10.89%	2.49%
1977	842.0	894.6	1.06	8.00%	10.60%	10.82%	2.82%
1978	891.0	820.2	0.92	8.70%	12.70%	10.98%	2.28%
1979	859.0	844.4	0.98	9.60%	14.50%	11.38%	1.78%
1980	928.0	891.4	0.96	11.90%	13.10%	11.80%	-0.10%
1981	976.0	932.9	0.96	14.20%	11.60%	12.05%	-2.15%
1982	882.0	884.4	1.00	13.80%	7.00%	11.71%	-2.09%
1983	888.0	1190.0	1.34	12.00%	9.60%	11.42%	-0.58%
1984	917.0	1178.0	1.28	12.70%	13.10%	11.40%	-1.30%
1985	945.0	1328.0	1.41	11.40%	11.20%	11.55%	0.15%
1986	986.0	1793.0	1.82	9.00%	11.50%	11.49%	2.49%
1987	1189.0	2350.0	1.98	9.10%	13.00%	11.73%	2.63%

Source: [A] "A LONG TERM PERSPECTIVE", Supplement to The Value Line Investment Survey

10 Year Moving Average of Earned Return on Equity of Dow Jones Industrials from 1929 through 1987



INDRISK.XLS

Estimate of Cost of Equity Differential Schedule 11, Page 1  
Between Industrial Customers  
and Residential or Commercial Customers

1 Average Beta for the 42 Electric Companies with Industrial Sales Below the Median	0.6886 [A]
2 Average Beta for the 42 Electric Companies with Industrial Sales Above the Median	0.7045 [A]
3 Difference in Beta	<u>0.0159</u> Line 2 minus Line 1
4 Average Percent Industrial Sales for the 42 Electric Companies with Industrial Sales Below the Median	26.53% [A]
5 Average Percent Industrial Sales for the 42 Electric Companies with Industrial Sales Above the Median	44.87% [A]
6 Difference in Percent Industrial Sales	<u>18.34%</u>
7 Average Change in Beta per 1% Change in Industrial Sales	0.00086696 Line 3/Line6/100
8 Change in Beta for 100% Industrial Sales	0.08669575
9 Overall Cost of Equity	11.75% [B]
10 Yield on Long-term Treasury Bonds	<u>8.50%</u> [C]
11 Current Risk Premium in Electric Equity Cost vs Long-term Treasury Bonds	<u>3.25%</u>
12 Average Beta of Value Line Electric	0.6970 [A]
13 Risk Premium per .01 Change in Beta	0.0466% Line 11/Line12/100
14 Risk Premium Caused by Industrial Customers	0.40% Line 13 x Line 8 x 10
15 Round to	<u><u>0.4%</u></u>

Source:

- [A] Schedule 11, Page 3
- [B] Schedule 1
- [C] March 26, 1990 edition of Wall Street Journal, p. C17.  
Average of 3 longest maturity issues.

## Stability of Residential, Commercial and Industrial Sales

		Residential	Commercial	Industrial
Aggregate for U.S. Electric Utilities 1986-1979	[A]	2.13%	3.15%	4.22%
Value Line Electric Utilities 1988-1983	[A]	<u>3.27%</u>	<u>2.21%</u>	<u>5.06%</u>
Average		2.70%	2.68%	4.64%
Variability as Percent of Residential Variability		100.00%	99.26%	171.85%

Source:

[A] Appendix 2

88 Value Line Electric Utilities  
Ranked by Percent of Retail Sales  
to Industrial Customers

Schedule 11, Page 3

44 Companies with Lowest Percentage of Sales  
to Industrial Customers

	Percent Industrial	Beta	Percent Common 1989
FPL Group, Inc.	7.67%	0.75	46.40%
Commonwealth Energy Sys	13.61%	0.75	47.00% E
Boston Edison	16.60%	0.75	35.50% E
Florida Progress Corp.	17.69%	0.70	50.10%
P S of Colorado	18.47%	0.70	44.00% E
Puget Sound P & L	18.55%	0.75	43.70%
Arizona Public Service	19.19%	0.75	33.50% E
Atlantic Energy, Inc.	19.51%	0.65	47.20%
P S of New Mexico	20.19%	0.65	43.50% E
Washington Water Power	20.41%	0.65	41.20%
Dominion Resources, Inc.	21.37%	0.70	39.10%
Utilicorp United	22.53%	0.70	44.00% E
El Paso Electric Co.	22.61%	0.65	41.00% E
Portland General Corp.	23.55%	0.65	43.00% E
Kansas City Power & Light	24.75%	0.65	44.50% E
Northeast Utilities	25.38%	0.75	36.00%
Eastern Utilities Assoc.	25.40%	0.75	36.40%
United Illuminating	25.87%	0.75	29.00% E
Kentucky Utilities	26.26%	0.60	52.50% E
Sierra Pacific Resources	26.30%	0.65	43.50%
New England Electric Sys	26.67%	0.70	38.50% E
Pacific G & E	27.34%	0.75	45.00% E
New York State E & G	27.91%	0.75	38.50%
Kansas Power & Light	28.09%	0.70	52.00% E
Green Mountain Power	28.18%	0.55	53.50% E
TECO Energy, Inc.	28.82%	0.60	54.40%
SCE Corp.	28.88%	0.75	46.00% E
St. Joseph Light & Power	29.18%	0.60	62.50% E
Empire District Electric	29.84%	0.50	48.50% E
Union Electric	30.63%	0.80	45.00% E
DQE, Inc.	30.73%	0.65	38.00% E
P S Enterprise Group	31.27%	0.75	47.00% E
Midwest Energy Co.	31.55%	0.60	40.00% E
Texas Utilities	31.83%	0.75	42.00% E
Nevada Power	33.11%	0.60	42.50% E
Rochester Gas & Electric	33.43%	0.75	39.90%
Cincinnati Gas & Electric	33.60%	0.75	43.00% E
Tuscon Electric Power	33.99%	0.60	34.50% E
MDU Resources Group, Inc.	34.03%	0.70	51.50% E
Louisville Gas & Electric	34.07%	0.65	45.00% E
Pennsylvania P & L	34.09%	0.70	37.80%
Iowa Resources Inc.	34.46%	0.70	46.50% E
Commonwealth Edison Co.	34.70%	0.75	46.00% E
DPL Inc.	35.05%	0.70	47.00% E

## Group Averages

Percent Industrial	Percent Common	Beta
26.53%	43.77%	0.6886

E= Estimated by Value Line

88 Value Line Electric Utilities  
Ranked by Percent of Retail Sales  
to Industrial Customers

44 Companies with Highest Percentage of Sales  
to Industrial Customers

Orange & Rockland Utilities	35.12%	0.65	47.40%
Idaho Power	35.20%	0.65	46.50% E
General Public Utilities	35.68%	0.75	47.60%
Delmarva Power & Light	35.94%	0.60	44.50%
Niagara Mohawk Power	36.26%	0.85	33.50%
SCANA Corp.	36.48%	0.70	47.50% E
Central Louisiana Electric	37.11%	0.60	49.00% E
Central Hudson G & E	37.22%	0.55	37.80%
IE Industries Inc.	37.72%	0.70	42.50% E
Central & South West	38.23%	0.75	48.00% E
Wisconsin Public Service	38.56%	0.60	55.00% E
Wisconsin Energy	38.69%	0.65	54.00% E
CMS Energy Corp.	40.17%	1.00	38.00% E
PSI Holdings, Inc.	40.35%	0.85	41.00% E
Montana Power	40.42%	0.65	55.50% E
Iowa Southern	40.54%	0.60	55.50% E
WPL Holdings, Inc.	40.75%	0.60	53.50% E
Ohio Edison	41.69%	0.75	41.50% E
Central Maine Power	41.96%	0.70	46.50%
Kansas Gas & Electric	42.22%	0.75	45.50% E
Carolina Power & Light	42.27%	0.70	44.50% E
Entergy (Middle South)	43.12%	0.85	36.00% E
CILCORP Inc.	43.61%	0.65	47.50% E
Southern Company	43.82%	0.75	40.50% E
Pacificorp	44.93%	0.70	45.00% E
IPALCO	45.18%	0.70	53.00% E
Duke Power	45.78%	0.70	50.20%
S. Indiana Gas & Electric	46.26%	0.55	50.50% E
Baltimore Gas & Electric	46.89%	0.70	44.50%
American Electric Power	47.33%	0.75	43.00% E
Hawaiian Electric	47.67%	0.65	45.50% E
Centerior Energy Corp.	47.92%	0.70	39.50% E
Detroit Edison	48.72%	0.70	32.00% E
Allegheny Power System	49.62%	0.70	46.50% E
Illinois Power	50.60%	0.60	34.00% E
Central Illinois Public Serv.	50.80%	0.70	51.00% E
TNP Enterprises, Inc.	50.84%	0.60	53.50% E
Northern States Power	50.91%	0.75	48.00% E
Houston Industries	52.45%	0.80	40.50% E
Gulf States Utilities	54.30%	0.85	39.00% E
Interstate Power	55.62%	0.70	44.00% E
Southwestern Public Service	57.27%	0.75	48.80%
NIPSCO	60.12%	0.80	41.00% E
Minnesota Power & Light	77.97%	0.70	48.00% E

## Group Averages

Percent Industrial	Percent Common	Beta
44.87%	45.37%	0.7045

Average for all 88 Companies	35.70%	0.697
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E= Estimated by Value Line

Dr. Morin's B x R Method  
Applied to His Comparable Companies

Schedule 12, Page 1

COMPANY	Earned Return on Equity	Earnings Per Share	Dividends Per Share	Retention Rate	b x r growth
ALLEGHENY POWER	13.50%	\$4.60	\$3.50	0.24	3.23%
AMERICAN ELECTRIC POWER	13.50%	\$3.40	\$2.75	0.19	2.58%
ATLANTIC ENERGY	12.00%	\$3.75	\$3.10	0.17	2.08%
BALTIMORE GAS & ELECTRIC	13.50%	\$4.10	\$2.72	0.34	4.54%
BOSTON EDISON CO.	12.00%	\$2.00	\$1.82	0.09	1.08%
CAROLINA PWR & LT CO.	14.00%	\$4.70	\$3.30	0.30	4.17%
CENTRAL HUDSON G & E	11.50%	\$2.80	\$2.00	0.29	3.29%
CENTERIOR ENERGY	11.00%	\$2.50	\$1.80	0.28	3.08%
CENTRAL ILLINOIS PS	13.00%	\$2.60	\$2.04	0.22	2.80%
CENTRAL LOUISIANA ELEC.	12.50%	\$3.75	\$2.85	0.24	3.00%
CENTRAL MAINE & PWR	12.50%	\$2.25	\$1.75	0.22	2.78%
CENTRAL VERMONT PS	13.50%	\$3.05	\$2.40	0.21	2.88%
CENTRAL & SOUTH WEST	13.50%	\$4.90	\$3.25	0.34	4.55%
CILCORP	12.50%	\$3.80	\$2.70	0.29	3.62%
CINCINNATI G & E	12.00%	\$3.60	\$2.52	0.30	3.60%
COMMONWEALTH ED.	13.50%	\$4.10	\$3.40	0.17	2.30%
COMMONWEALTH ENERGY	13.00%	\$4.80	\$3.15	0.34	4.47%
CONSOLIDATED EDISON NY	13.50%	\$2.90	\$2.20	0.24	3.26%
DELMARVA PWR & LT	13.00%	\$2.00	\$1.70	0.15	1.95%
DETROIT EDISON	16.00%	\$3.25	\$2.05	0.37	5.91%
DOMINION RES	13.00%	\$5.25	\$3.75	0.29	3.71%
DPL INC.	14.50%	\$3.90	\$2.60	0.33	4.83%
DQE INC.	11.00%	\$2.55	\$1.65	0.35	3.88%
DUKE POWER CO.	13.50%	\$5.75	\$3.76	0.35	4.67%
EASTERN UTILITIES	15.00%	\$4.50	\$3.00	0.33	5.00%
EMPIRE DIS. ELEC.	13.50%	\$3.50	\$2.65	0.24	3.28%
FLORIDA PROGRESS CORP.	15.00%	\$4.80	\$3.05	0.36	5.47%
FPL GROUP	13.00%	\$4.10	\$2.76	0.33	4.25%
GENERAL PUBLIC UTIL.	14.00%	\$6.85	\$3.60	0.47	6.64%
GREEN MOUNTAIN PWR.	13.00%	\$2.70	\$2.15	0.20	2.65%
HAWAIIAN ELECTRIC	13.50%	\$3.75	\$2.60	0.31	4.14%
HOUSTON INDUSTRIES	13.50%	\$3.90	\$3.05	0.22	2.94%
IDAHO POWER	13.00%	\$2.45	\$2.15	0.12	1.59%
IE INDUSTRIES	14.00%	\$3.25	\$2.25	0.31	4.31%
INTERSTATE POWER	13.00%	\$2.85	\$2.15	0.25	3.19%
IOWA ILL G & E	12.50%	\$4.50	\$3.55	0.21	2.64%
IOWA RESOURCES	12.50%	\$2.25	\$1.80	0.20	2.50%
IOWA SOUTHERN INC.	13.50%	\$3.45	\$2.47	0.28	3.83%
IPALCO ENTERPRISES	12.50%	\$2.75	\$2.05	0.25	3.18%
KANSAS CITY P & L	13.50%	\$4.20	\$2.90	0.31	4.18%
KANSAS G & E	10.00%	\$2.30	\$2.00	0.13	1.30%
KANSAS P & L	13.50%	\$3.00	\$1.95	0.35	4.73%
KENTUCKY UTILITIES	14.00%	\$2.30	\$1.60	0.30	4.26%
LOUISVILLE G & E	12.00%	\$4.00	\$3.00	0.25	3.00%
MDU RES. GROUP	14.50%	\$2.40	\$1.75	0.27	3.93%
MIDWEST ENERGY	14.50%	\$2.20	\$1.74	0.21	3.03%
MINNESOTA P & L	14.00%	\$2.75	\$2.10	0.24	3.31%
MONTANA POWER	11.00%	\$3.70	\$3.20	0.14	1.49%
NEVADA POWER	13.00%	\$2.30	\$1.80	0.22	2.83%
NEW ENGLAND ELECTRIC	12.50%	\$3.00	\$2.35	0.22	2.71%
NEW YORK STATE E & G	12.00%	\$2.90	\$2.25	0.22	2.69%
NIAGARA MOHAWK PWR.	13.00%	\$2.40	\$1.20	0.50	6.50%
NIPSCO	14.50%	\$2.50	\$1.65	0.34	4.93%
NORTHEAST UTIL.	13.50%	\$2.70	\$2.10	0.22	3.00%

Dr. Morin's B x R Method  
Applied to His Comparable Companies

Schedule 12, Page 2

	Earned Return on Equity	Earnings Per Share	Dividends Per Share	Retention Rate	b x r growth
NORTHERN STATES	13.50%	\$3.75	\$2.65	0.29	3.96%
NORTHWESTERN PS	14.00%	\$2.00	\$1.65	0.18	2.45%
OHIO EDISON	13.50%	\$2.45	\$2.14	0.13	1.71%
OKLAHOMA G & E	15.00%	\$3.50	\$2.85	0.19	2.79%
ORANGE & ROCKLAND UTIL.	13.50%	\$3.95	\$2.65	0.33	4.44%
OTTER TAIL POWER	14.50%	\$2.25	\$1.68	0.25	3.67%
PACIFIC GAS & ELEC.	13.50%	\$2.90	\$1.75	0.40	5.35%
PACIFICORP	14.00%	\$4.45	\$3.15	0.29	4.09%
PENNSYLVANIA p & L	13.00%	\$4.15	\$3.25	0.22	2.82%
PHILADELPHIA ELECTRIC	13.00%	\$2.30	\$2.20	0.04	0.57%
PORTLAND GENERAL CORP.	12.00%	\$2.50	\$2.00	0.20	2.40%
POTOMAC ELEC. PWR CO.	17.50%	\$3.10	\$1.92	0.38	6.66%
PSI HOLDINGS	14.00%	\$2.50	\$1.60	0.36	5.04%
PUBLIC SVC ENT GRP	14.00%	\$3.15	\$2.35	0.25	3.56%
PUB SVC COLORADO	13.50%	\$3.00	\$2.25	0.25	3.38%
PUGET SOUND P & L	12.00%	\$2.15	\$1.76	0.18	2.18%
ROCHESTER GAS & ELEC CP	12.50%	\$2.35	\$1.65	0.30	3.72%
SAN DIEGO GAS & ELEC.	14.00%	\$3.50	\$2.95	0.16	2.20%
SCANA CORP.	13.50%	\$3.60	\$2.75	0.24	3.19%
SCE CORP.	14.00%	\$4.15	\$2.95	0.29	4.05%
SIERRA PACIFIC RESOURC	11.50%	\$2.50	\$1.95	0.22	2.53%
SO IND G & E	14.00%	\$3.25	\$2.20	0.32	4.52%
SOUTHERN COMPANY	12.50%	\$3.15	\$2.30	0.27	3.37%
SOUTHWESTERN PS	15.00%	\$2.75	\$2.45	0.11	1.64%
TECO ENERGY INC.	14.50%	\$2.70	\$1.90	0.30	4.30%
TEXAS UTILITIES	13.00%	\$4.45	\$3.12	0.10	3.89%
TNP ENTERPRISES	12.00%	\$2.85	\$1.85	0.35	4.21%
TUSCON ELEC. PWR.	10.00%	\$3.50	\$2.20	0.37	3.71%
UNION ELECTRIC	13.00%	\$3.45	\$2.35	0.32	4.14%
UTILICORP	14.50%	\$2.45	\$1.80	0.27	3.85%
WASHINGTON WTR PWR	13.00%	\$3.00	\$2.55	0.15	1.95%
WISCONSIN ENERGY	13.50%	\$3.30	\$2.15	0.35	4.70%
WISCONSIN P. S.	13.50%	\$2.60	\$1.85	0.29	3.89%
WPL HOLDINGS	13.50%	\$2.45	\$1.92	0.22	2.92%

AVERAGE

13.26%

3.50%

Page 1 and Page 2

**APPENDIX I  
TESTIFYING EXPERIENCE OF  
JAMES A. ROTHSCHILD**

**TESTIFYING EXPERIENCE OF JAMES A. ROTHSCHILD  
THROUGH APRIL 15th, 1990**

**ALABAMA**

Continental Telephone of the South; Docket No. 17968, Rate of Return, January, 1981.

**ARIZONA**

Sun City West Utilities; Accounting, January, 1985

**CONNECTICUT**

Connecticut American Water Company; Docket No. 800614, Rate of Return, September, 1980

Connecticut Light & Power Company; Docket No. 85-10-22, Accounting and Rate of Return, February, 1986

Connecticut Light & Power Company; Docket No. 88-04-28, Gas Divestiture, August, 1988

Connecticut Natural Gas; Docket No. 780812, Accounting and Rate of Return, March, 1979

Connecticut Natural Gas; Docket No. 830101, Rate of Return, March, 1983

Connecticut Natural Gas; Docket No. 87-01-03, Rate of Return, March, 1987

United Illuminating Company; Docket No. 89-08-11:ES:BBM, Financial Integrity and Fincial Projections, November, 1989.

**DELAWARE**

Artesian Water Company, Inc.; Rate of Return, December, 1986

Artesian Water Company, Inc.; Docket No. 86-25, Rate of Return, August, 1987

Diamond State Telephone Company; Docket No. 82-32, Rate of Return, November, 1982

Diamond State Telephone Company; Docket No. 83-12, Rate of Return, October, 1983

Wilmington Suburban Water Company; Rate of Return Report, September, 1986

Wilmington Suburban Water Company; Docket No. 86-25, Rate of Return, February, 1987

**FEDERAL ENERGY REGULATORY COMMISSION (FERC)**

New England Power Company; CWIP, February, 1984

New England Power Company; Docket No. ER88-630-000 & Docket No. ER88-631-000, Rate of Return, April, 1989

New England Power Company; Docket Nos. ER89-582-000 and ER89-596-000, Rate of Return, January, 1990

Philadelphia Electric Company - Conowingo; Docket No. EL-80-557/588, July, 1983

**FLORIDA**

Alltel of Florida; Docket No. 850064-TL, Accounting, September, 1985

Florida Power & Light Company; Docket No. 810002-EU, Rate of Return, July, 1981

Florida Power & Light Company; Docket No. 82007-EU, Rate of Return, June, 1982

Florida Power & Light Company; Docket No. 830465-EI, Rate of Return and CWIP, March, 1984

Florida Power Corporation; Docket No. 830470-EI, Rate Phase-In, June, 1984

Florida Power Corp.; Rate of Return, August, 1986

Florida Power Corp.; Docket No. 870220-EI, Rate of Return, October, 1987

GTE Florida, Inc.; Docket No. 890216-TL, Rate of Return, July, 1989

Gulf Power Company; Docket No. 810136-EU, Rate of Return, October, 1981

Gulf Power Company; Docket No. 840086-EI, Rate of Return, August, 1984

Gulf Power Company; Docket No. 881167-EI, Rate of Return, 1989

Rolling Oaks Utilities, Inc.; Docket No. 850941-WS, Accounting, October, 1986

Tampa Electric Company; Docket No. 820007-EU, Rate of Return, June, 1982

Tampa Electric Company; Docket No. 830012-EU, Rate of Return, June, 1983

United Telephone of Florida; Docket No. 891239-TL, Rate of Return, November, 1989

Water and Sewer Utilities, Docket No 880006-WS, Rate of Return, February, 1988.

#### GEORGIA

Georgia Power Company; Docket No. 3397-U, Accounting, July, 1983

#### ILLINOIS

Central Illinois Public Service Company; ICC Docket No. 86-0256, Financial and Rate of Return, October, 1986

Commonwealth Edison Company; Docket No. 85CH10970, Financial Testimony, May, 1986

Commonwealth Edison Company; Docket No. 86-0249, Financial Testimony, October, 1986

Commonwealth Edison Company; ICC Docket No. 87-0057, Rate of Return and Income Taxes, April 3, 1987

Commonwealth Edison Company; ICC Docket No. 87-0043, Financial Testimony, April 27, 1987

Northern Illinois Gas Company; Financial Affidavit, February, 1987

Northern Illinois Gas Company; Docket No. 87-0032, Cost of Capital and Accounting Issues, June, 1987

#### KENTUCKY

Kentucky Power Company; Case No. 8429, Rate of Return, April, 1982

Kentucky Power Company; Case No. 8734, Rate of Return and CWIP, June, 1983

Kentucky Power Company; Case No. 9061, Rate of Return and Rate Base Issues, September, 1984

West Kentucky Gas Company, Case No. 8227, Rate of Return, August, 1981

#### **MAINE**

Bangor Hydro-Electric Company; Docket No. 81-136, Rate of Return, January, 1982

#### **MARYLAND**

C & P Telephone Company; Case No. 7591, Fair Value, December, 1981

#### **MASSACHUSETTS**

Boston Edison Company; Docket No. DPU 906, Rate of Return, December, 1981

Fitchburg Gas & Electric; Accounting and Finance, October, 1984

Southbridge Water Company; M.D.P.U., Rate of Return, September, 1982

#### **MINNESOTA**

Minnesota Power & Light Company; Docket No. EO15/GR-80-76, Rate of Return, July, 1980

#### **NEW JERSEY**

Atlantic City Sewage; Docket No. 774-315, Rate of Return, May, 1977

Atlantic City Electric Company, Docket Nos. ER 8809 1053 and ER 8809 1054, Rate of Return, April, 1990

Elizabethtown Water Company; Docket No. 781-6, Accounting, April, 1978

Elizabethtown Water Company; Docket No. 802-76, Rate of Return, January, 1979

Essex County Transfer Stations; OAL Docket PUC 03173-88, BPU Docket Nos. SE 87070552 and SE 87070566, Rate of Return, October, 1989.

Hackensack Water Company; Docket No. 776-455, October, 1977 and Accounting, February, 1979

Hackensack Water Company; Docket No. 787-847, Accounting and Interim Rate Relief, September, 1978

Hackensack Water Company; AFUDC & CWIP, June, 1979

Hackensack Water Company; Docket No. 804-275, Rate of Return, September, 1980

Hackensack Water Company; Docket No. 8011-870, CWIP, January, 1981

Middlesex Water Company; Docket No. 793-254, Tariff Design, September, 1978

Middlesex Water Company; Docket No. 793-269, Rate of Return, June, 1979

Middlesex Water Company; Docket No. WR890302266J, Accounting and Revenue Forecasting, July, 1989

Mount Holly Water Company; Docket No. 805-314, Rate of Return, August, 1980

National Association of Water Companies; Tariff Design, 1977

New Jersey Bell Telephone; Docket No. 7711-1047, Tariff Design, September, 1978

New Jersey Land Title Insurance Companies, Rate of Return and Accounting, August and November, 1985

New Jersey Natural Gas; Docket No. 7812-1681, Rate of Return, April, 1979

Nuclear Performance Standards; BPU Docket No. EX89080719, Nuclear Performance Standards policy testimony.

Rockland Electric Company; Docket No. 795-413, Rate of Return, October, 1979

South Jersey Gas Company; Docket No. 769-988, Accounting, February, 1977

United Artists Cablevision; Docket No. CTV-9924- 83, Rate of Return, April, 1984

West Keansburg Water Company; Docket No. 838-737, Rate of Return, December, 1983

## **NEW YORK**

Consolidated Edison Company; Case No. 27353, Accounting and Rate of Return, October, 1978

Consolidated Edison Company; Case No. 27744, Accounting and Rate of Return, August 1980

Generic Financing Case for Electric & Gas Companies; Case No. 27679, May, 1981

Long Island Lighting Company; Case No. 27136, Accounting and Rate of Return, June, 1977

Long Island Lighting Company; Case No. 27774, Rate of Return, November, 1980

Long Island Lighting Company; Case No. 28176 and 28177, Rate of Return and Revenue Forecasting, June, 1982

Long Island Lighting Company, Case No. 28553, Rate of Return and Finance, March, 1984

New York Telephone, Case No. 27469, April, 1979

New York Telephone, Case No. 27710, Accounting, September, 1981

## **OHIO**

Columbia Gas Company of Ohio; Case No. 77-1428-GA-AIR, March, 1979

Columbia Gas Company of Ohio; Case No. 78-1118-GA-AIR, Accounting and Rate of Return, May, 1979

Ohio Utilities Company; Case No. 78-1421-WS-AIR, Rate of Return, September, 1979

## **PENNSYLVANIA**

ATTCOM - Pennsylvania; Docket No. P-830452, Rate of Return, April, 1984

Bethel and Mt. Aetna Telephone Company; Docket No. LR-770090452, Accounting and Rate of Return, January, 1978

Big Run Telephone Company; Docket No. R-79100968, Accounting and Rate of Return, November, 1980

Columbia Gas of Pennsylvania; Docket No. R-78120724, Rate of Return, May, 1979

Dauphin Consolidated Water Company; Docket No. R-780-50616, Rate of Return, August, 1978

Dauphin Consolidated Water Company; Docket No. R-860350, Rate of Return, July, 1986

Duquesne Light Company; Docket No. RID-373, Accounting and Rate of Return,

Duquesne Light Company; Docket No. R-80011069, Accounting and Rate of Return, June, 1979

Duquesne Light Company; Docket No. R-821945, Rate of Return, August, 1982

Duquesne Light Company; Docket No. R-850021, Rate of Return, August, 1985

Equitable Gas Company; Docket No. R-780040598, Rate of Return, September, 1978

General Telephone Company of Pennsylvania; Docket No. R-811512, Rate of Return

Metropolitan Edison and Pennsylvania Electric Company; Rate of Return, December, 1980

National Fuel Gas Company; Docket No. R-77110514, Rate of Return, September, 1978

Pennsylvania Electric Company; Rate of Return, September, 1980

Pennsylvania Gas & Water Company, Docket No. R-80071265, Accounting and Rate of Return

Pennsylvania Gas & Water Company; Docket No. R-78040597, Rate of Return, August, 1978

Pennsylvania Power Company; Docket No. R-78040599, Accounting and Rate of Return, May, 1978

Pennsylvania Power Company; Docket No. R-811510, Accounting, August, 1981

Pennsylvania Power Company; Case No. 821918, Rate of Return, July, 1982

Pennsylvania Power & Light Company; Docket No. R-80031114, Accounting and Rate of Return

Pennsylvania Power & Light Company; Docket No. R-822169, Rate of Return, March, 1983

Peoples Natural Gas Company; Docket No. R-78010545, Rate of Return, August, 1978

Philadelphia Electric Company; Docket No. R-850152, Rate of Return, January, 1986

Philadelphia Suburban Water Company; Docket No. R-79040824, Rate of Return, September, 1979

Philadelphia Suburban Water Company; Docket No. R-842592, Rate of Return, July, 1984

UGI Luzerne Electric; Docket No. R-78030572, Accounting and Rate of Return, October, 1978

West Penn Power, Docket No. R-78100685, July, 1979

West Penn Power; Docket No. R-80021082, Accounting and Rate of Return

Williamsport vs. Borough of S. Williamsport re Sewage Rate Dispute

York Water Company, Docket No. R-850268, Rate of Return, June, 1986

#### RHODE ISLAND

Blackstone Valley Electric Company; Rate of Return, February, 1980

Blackstone Valley Electric Company; Docket No. 1605, Rate of Return, February, 1982

Bristol & Warren Gas Company; Docket No. 1395, Rate of Return, February, 1980

Bristol & Warren Gas Company; Docket No. 1395R, Rate of Return, June, 1982

Narragansett Electric Company; Docket No. 1591, Accounting, November, 1981

Narragansett Electric Company; Docket No. 1719, Rate of Return, December, 1983

Narragansett Electric Company; Docket No. 1938, Rate of Return, October, 1989.

Newport Electric Company; Docket No. 1410, Accounting, July, 1979

Newport Electric Company; Docket No. 1510, Rate of Return

Newport Electric Company; Docket No. 1801, Rate of Return,  
June, 1985

South County Gas Company, Docket No. 1854, Rate of Return, Decem-  
ber, 1986

Wakefield Water Company, Docket No. 1734, Rate of Return, April,  
1984

#### **SOUTH CAROLINA**

Small Power Producers & Cogeneration Facilities; Docket No. 80-  
251-E, Cogeneration Rates, August, 1984

South Carolina Electric & Gas Company; Docket No. 79-196E, 79-  
197-G, Accounting, November, 1979

#### **VERMONT**

Green Mountain Power Company, Docket No. 4570, Accounting, July,  
1982

New England Telephone Company; Docket No. 3806/4033, Accounting,  
November, 1979

New England Telephone Company; Docket No. 4366, Accounting

#### **WASHINGTON, D.C.**

PEPCO; Formal Case No. 889, Rate of Return, January, 1990

#### **OTHER**

Railroad Cost of Capital, Ex Parte No. 436, Rate of Return,  
January 17, 1983 (Submitted to the Interstate Commerce Commis-  
sion)

Report on the Valuation of Nemours Corporation, filed on behalf  
of IRS, October, 1983 (Submitted to Tax Court)

APPENDIX II  
SALES OF ELECTRICITY BY CUSTOMER CLASS  
FOR  
ELECTRIC UTILITY COMPANIES COVERED IN VALUE LINE

## Value Line Electric Utilities

	RESIDENTIAL Kwh Sales (000) Omitted						Average	Value Line Edition
	1988	1987	1986	1985	1984	1983		
	Allegheny Power System	10,772	10,271	9,839	9,309	9,411	8,891	9,749 East
American Electric Power	25,798	24,494	23,232	22,797	22,637	22,648	23,601 East	
Arizona Public Service	5,463	5,162	4,697				5,107 West	
Atlantic Energy, Inc.	3,213	3,040	2,839	2,638	2,647	2,545	2,820 East	
Baltimore Gas & Electric	9,196	8,521	7,798	7,084	6,897	6,644	7,690 East	
Boston Edison	3,431	3,189	3,049	2,897	2,890	2,778	3,039 East	
Carolina Power & Light	9,854	9,614	9,028	8,247	8,241	8,010	8,832 East	
Centerior Energy Corp.	6,920	6,659	6,527	6,309	6,404	6,327	6,524 Central	
Central and South West Corp.	14,036	13,518	13,338	13,321	12,853	12,134	13,200 Central	
Central Hudson G & E	1,499	1,394	1,311	1,237	1,238	1,181	1,310 East	
Central Illinois Public Serv.	2,487	2,368	2,317	2,224	2,226	2,296	2,320 Central	
Central Louisiana Electric	2,082	2,023	2,030	1,936	1,858	1,756	1,948 Central	
Central Maine Power	3,076	2,926	2,803	2,662	2,636	2,481	2,764 East	
CILCORP Inc.	1,557	1,459	1,399	1,339	1,390	1,428	1,429 Central	
Cincinnati Gas & Electric	6,487	6,096	5,783	5,416	5,430	5,345	5,760 Central	
CMS Energy Corp.	9,306	8,779	8,446	8,210	8,149	8,109	8,500 Central	
Commonwealth Edison	20,394	19,016	18,155	17,847			18,853 Central	
Commonwealth Energy Sys	1,787	1,658	1,533	1,433	1,367	1,292	1,512 East	
Delmarva Power & Light	2,945	2,732	2,496	2,257	2,249	2,136	2,469 East	
Detroit Edison	11,723	11,134	10,492	10,077	10,150	10,256	10,639 Central	
Dominion Resources, Inc.	19,407	18,612	17,697	15,489	14,701	14,264	16,695 East	
DPL Inc.	4,308	4,013	3,871	3,678	3,722	3,668	3,877 Central	
Duke Power	16,744	16,580	15,636	14,241	14,493	14,219	15,319 East	
Duquesne Light	3,156	3,065	2,957	2,848	2,918	2,905	2,975 East	
Eastern Utilities Assoc.	1,412	1,328	1,262	1,212	1,205	1,197	1,269 East	
El Paso Electric Co.	1,246	1,180	1,114	1,079	1,047	1,018	1,114 Central	
Empire District Electric	1,006	944	897	855	851	810	894 Central	
Florida Progress Corp.	11,066	10,319	9,819	9,175	8,554	8,009	9,490 East	
FPL Group, Inc.	30,083	28,330	27,188	25,573	23,636	23,324	26,356 East	
General Public Utilities	13,310	12,445	11,779	11,142	11,273	10,901	11,808 East	
Green Mountain Power	566	540	529	515	509	484	524 East	
Gulf State Utilities	6,326	6,209	6,175	6,225	6,209	5,687	6,139 Central	
Hawaiian Electric	2,034	1,962	1,859	1,785	1,748	1,730	1,853 West	
Houston Industries	15,251	14,701	14,628	14,981	14,242	12,911	14,452 Central	
Idaho Power	3,329	3,168	3,316	3,490	3,431	3,104	3,306 West	
IE Industries Inc.	1,314	1,233	1,216	1,174	1,210	1,272	1,237 Central	
Illinois Power	4,411	4,241	4,198	3,927	3,977	4,077	4,139 Central	
Interstate Power	979	923	894	883	883	910	912 Central	
Iowa Resources Inc.	1,935	1,792	1,748	1,697	1,730	1,873	1,796 Central	
Iowa Southern	644	598	580	562	574	603	594 Central	
IPALCO	3,643	3,412	3,270	3,059	3,041	2,990	3,236 Central	
Kansas City P & L	3,252	3,050	2,839	2,657	2,625	2,719	2,857 Central	
Kansas Gas & Electric	2,188	2,076	2,034	2,064	2,115	2,099	2,096 Central	
Kansas Power & Light	2,296	2,153	2,075	1,989	1,991	2,062	2,094 Central	
Kentucky Utilities	4,049	3,831	3,637	3,411	3,449	3,360	3,623 Central	
Louisville Gas & Electric	2,935	2,852	2,711	2,525	2,505	2,569	2,683 Central	
MDU Resources Group	739	681	716	752	765	764	736 Central	
Entergy (Middle South)	17,155	17,053	17,118	16,748	16,069	15,465	16,601 Central	

## KWSLS.XLS

Midwest Energy Company	990	926	894	924	911	994	940 Central
Minnesota Power & Light	842	792	810	798	787	771	800 Central
Montana Power	1,801	1,717	1,751	1,888	1,824	1,675	1,776 West
Nevada Power	3,346	3,146	2,768	2,799	2,747	2,426	2,872 West
New England Electric Sys	7,735	7,237	6,790	6,445	6,350	6,143	6,783 East
New York State E & G	5,148	4,905	4,791	4,615	4,575	4,398	4,739 East
Niagara Mohawk Power	10,099	9,655	9,359	8,976	8,944	8,578	9,269 East
NIPSCO	2,402	2,310	2,170	2,108	2,150	2,260	2,233 Central
Northeast Utilities	9,412	8,825	8,274	7,837	7,804	7,554	8,284 East
Northern States Power	9,101	8,383	8,158	7,966	7,806	7,841	8,209 Central
Ohio Edison	7,628	7,299	7,046	6,791	6,836	6,735	7,056 Central
Orange & Rockland Utilities	1,490	1,378	1,282	1,216	1,209	1,170	1,291 East
P S Enterprise Group	9,941	9,299	8,727	8,391	8,373	8,402	8,856 East
P S of Colorado	5,416	5,250	5,088	5,057	4,961	4,655	5,071 West
P S of New Mexico	1,493	1,449	1,354	1,320	1,280	1,205	1,350 West
Pacific Gas & Electric	22,565	21,933	20,949	21,067	20,730	19,778	21,170 West
Pacificorp	10,491	10,100	10,101	10,581	10,495	10,091	10,310 West
Pennsylvania P & L	9,856	9,157	8,771	8,354	8,454	8,138	8,788 East
Portland General Corp.	5,924	5,553	5,572	5,842	5,768	5,434	5,682 West
PSI Holdings, Inc.	5,710	5,422	5,255	5,000	5,194	4,983	5,261 Central
Puget Sound P & L	8,010	7,490	7,626	7,853	7,622	7,247	7,641 West
Rochester Gas & Electric	2,052	1,970	1,890	1,847	1,835	1,789	1,897 East
S. Indiana Gas & Electric	1,148	1,125	1,090	1,011	1,000	1,003	1,063 Central
SCANA Corp.	4,689	4,649	4,467	4,032	3,919	3,787	4,257 East
SCE Corp.	20,901	19,760	18,767	18,583	18,290	17,174	18,913 West
Sierra Pacific Resources	1,409	1,334	1,277	1,287	1,270	1,215	1,299 West
Southern Company	31,041	30,583	29,501	27,088	26,163	25,425	28,300 East
Southwestern Public Service	2,270	2,219	2,204	2,166	2,146	1,956	2,160 Central
St. Joseph Light & Power	506	465	455	446	441	454	461 Central
TECO Energy, Inc.	4,967	4,714	4,516	4,332	4,006	3,804	4,390 East
Texas Utilities	26,634	25,716	24,604	24,301	22,693	20,163	24,019 Central
TNP Enterprises, Inc.	1,864	1,789	1,745	1,715	1,659	1,493	1,711 Central
Tuscon Electric Power	2,001	1,884	1,713	1,655	1,529	1,447	1,705 West
Union Electric	9,957	9,585	9,283	8,844	8,764	8,979	9,235 Central
United Illuminating	1,870	1,781	1,700	1,655	1,643	1,638	1,715 East
Utilicorp United	2,232	1,565	1,140	1,044	1,041	1,031	1,342 Central
Washington Water Power	2,864	2,802	2,911	3,162	3,098	2,912	2,958 West
Wisconsin Energy	6,197	5,869	5,696	5,573	5,501	5,486	5,720 Central
Wisconsin Public Service	2,155	2,031	2,008	1,961	1,928	1,886	1,995 Central
WPL Holdings, Inc.	2,515	2,353	2,289	2,276	2,223	2,232	2,315 Central

Total 593,482 565,764 543,667 519,782 492,115 475,603

Source: 1989, 1988 and 1986 editions of The P.U.R. Analysis of Investor-Owned Electric and Gas Utilities

## Value Line Electric Utilities

NAME	COMMERCIAL KWH SALES (000) Omitted						Value Average Line Ed.
	1988	1987	1986	1985	1984	1983	
Allegheny Power System	6,260	5,965	5,701	5,396	5,274	4,990	5,598 East
American Electric Power	17,651	16,846	16,073	15,571	14,849	14,398	15,898 East
Arizona Public Service	5,659	5,456	5,129				5,415 West
Atlantic Energy, Inc.	2,742	2,592	2,401	2,299	2,151	2,019	2,367 East
Baltimore Gas & Electric	3,790	3,554	3,350	3,158	3,264	3,166	3,380 East
Boston Edison	7,005	6,751	6,363	5,992	5,725	5,281	6,186 East
Carolina Power & Light	7,060	6,734	6,365	5,953	5,683	5,546	6,224 East
Centerior Energy Corp.	6,577	6,350	6,239	5,952	5,794	5,606	6,086 Central
Central & South West	11,663	11,319	11,256	11,004	10,464	9,846	10,925 Central
Central Hudson G & E	1,354	1,259	1,185	1,185	1,118	1,062	1,194 East
Central Illinois Public Serv.	974	963	986	959	958	928	961 Central
Central Louisiana Electric	958	942	957	909	880	797	907 Central
Central Maine Power	2,164	2,019	1,842	1,725	1,668	1,562	1,830 East
CILCORP Inc.	1,143	1,086	1,058	1,013	999	964	1,044 Central
Cincinnati Gas & Electric	4,702	4,396	4,182	3,950	3,719	3,541	4,082 Central
CMS Energy	7,884	7,411	7,010	6,735	6,515	6,321	6,979 Central
Commonwealth Edison	21,380	20,128	19,515	18,731			19,939 Central
Commonwealth Energy Sys	1,869	1,740	1,590	1,485	1,358	1,255	1,550 East
Delmarva Power & Light	2,734	2,536	2,371	2,166	2,073	1,844	2,287 East
Detroit Edison	8,310	7,873	7,501	7,130	6,850	6,479	7,357 Central
Dominion Resources, Inc.	15,499	14,513	13,367	11,861	10,882	10,285	12,735 East
DPL Inc.	2,643	2,513	2,401	2,307	2,212	2,075	2,359 Central
Duke Power	13,634	13,026	12,312	11,338	10,922	10,339	11,929 East
Duquesne Light	5,055	4,899	4,724	4,537	4,393	4,257	4,644 East
Eastern Utilities Assoc.	1,424	1,325	1,243	1,169	1,113	1,103	1,230 East
El Paso Electric	1,398	1,316	1,267	1,203	1,149	1,102	1,239 Central
Empire District Electric	728	680	630	577	544	508	611 Central
Florida Progress Corp.	6,479	6,016	5,573	5,107	4,548	4,119	5,307 East
FPL Group, Inc.	23,912	22,372	21,078	19,734	18,397	17,423	20,486 East
General Public Utilities	11,038	10,275	9,654	9,080	8,826	8,322	9,533 East
Green Mountain Power	554	517	487	466	456	434	486 East
Gulf States Utilities	5,024	4,911	4,921	4,964	4,745	5,341	4,984 Central
Hawaiian Electric	1,920	1,798	1,691	1,480	1,462	1,360	1,619 West
Houston Industries	11,552	11,189	11,437	11,491	10,945	10,001	11,103 Central
Idaho Power	3,558	3,383	3,229	3,343	3,062	2,943	3,253 West
IE Industries Inc.	1,224	1,143	1,118	1,073	1,072	1,067	1,116 Central
Illinois Power	2,939	2,862	2,821	2,706	2,698	2,576	2,767 Central
Interstate Power	770	748	730	709	682	662	717 Central
Iowa Resources Inc.	1,383	1,278	1,241	1,154	1,132	1,117	1,218 Central
Iowa Southern	355	334	328	318	314	309	326 Central
IPALCO Enterprises Inc.	2,481	2,370	2,441	2,246	2,168	1,996	2,284 Central
Kansas City Power & Light	4,554	4,283	4,035	3,757	3,580	3,499	3,951 Central
Kansas Gas & Electric	1,725	1,682	1,659	1,630	1,587	1,527	1,635 Central
Kansas Power & Light	2,782	2,633	2,521	2,405	2,322	2,300	2,494 Central
Kentucky Utilities	2,754	2,598	2,440	2,290	2,211	2,060	2,392 Central
Louisville Gas & Electric	2,457	2,343	2,256	2,150	2,055	1,965	2,204 Central
MDU Resources Group, Inc.	351	382	445	459	437	431	418 Central
Entergy (Middle South)	12,192	11,693	11,539	11,235	10,516	9,776	11,159 Central

Midwest Energy Co.	880	837	806	798	771	788	813 Central
Minnesota Power & Light	813	772	732	702	679	657	726 Central
Montana Power	1,886	1,783	1,704	1,742	1,682	1,628	1,738 West
Nevada Power	1,545	1,496	1,289	1,244	1,162	1,240	1,329 West
New England Electric Sys	7,128	6,706	6,219	5,821	5,511	5,209	6,099 East
New York State E & G	3,069	2,882	2,772	2,678	2,611	2,536	2,758 East
Niagara Mohawk Power	11,182	10,718	10,374	9,907	9,739	9,387	10,218 East
NIPSCO	2,400	2,327	2,245				2,324 Central
Northeast Utilities	8,585	8,151	7,676	7,185	6,904	6,493	7,499 East
Northern States Power	4,982	4,675	4,487	4,326	4,158	3,901	4,422 Central
Ohio Edison	6,060	5,782	5,560	5,266	5,101	5,096	5,478 Central
Orange & Rockland Utilities	991	926	877	826	808	768	866 East
P S Enterprise Group	16,036	14,990	14,118	13,314	12,452	11,754	13,777 East
P S of Colorado	9,683	8,706	8,571	8,487	8,080	7,460	8,498 West
P S of New Mexico	2,097	2,004	1,829	1,765	1,706	1,600	1,834 West
Pacific G & E	23,917	22,621	21,286	21,053	20,626	19,260	21,461 West
Pacificorp	9,116	8,782	8,462	8,440	7,999	7,705	8,417 West
Pennsylvania P & L	7,932	7,457	7,159	6,728	6,527	6,119	6,987 East
Portland General Corp.	4,865	4,672	4,498	4,379	4,209	3,925	4,425 West
PSI Holdings, Inc.	4,587	4,447	4,241	3,994	3,904	3,694	4,145 Central
Puget Sound P & L	5,042	4,802	4,559	4,469	4,133	3,776	4,464 West
Rochester Gas & Electric	1,792	1,733	1,658	1,592	1,540	1,492	1,635 East
S. Indiana Gas & Electric	944	915	878	804	800	746	848 Central
SCANA Corp.	3,936	3,769	3,585	3,351	3,130	2,949	3,453 East
SCE Corp.	23,040	21,610	20,146	19,111	18,355	16,778	19,840 West
Sierra Pacific Resources	1,821	1,694	1,584	1,526	1,468	1,414	1,585 West
Southern Company	27,005	25,593	24,166	22,512	20,816	19,512	23,267 East
Southwestern Public Service	2,428	2,429	2,439	2,360	2,289	2,129	2,346 Central
St. Joseph Light & Power	370	350	344	329	328	319	340 Central
TECO Energy, Inc.	3,814	3,529	3,317	3,131	2,800	2,560	3,192 East
Texas Utilities	23,187	22,324	21,453	20,349	19,026	17,367	20,618 Central
TNP Enterprises, Inc.	1,304	1,261	1,273	1,255	1,201	1,112	1,234 Central
Tuscon Electric Power	1,193	1,168	1,114	1,051	986	921	1,072 West
Union Electric	10,009	9,581	9,306	8,823	8,441	7,653	8,969 Central
United Illuminating	2,174	2,046	1,915	1,810	1,729	1,657	1,889 East
Utilicorp United	1,279	1,034	743	699	671	639	844 Central
Washington Water Power	2,004	1,955	1,885	1,881	1,804	1,679	1,868 West
Wisconsin Energy	5,635	5,314	4,948	4,885	4,798	4,539	5,020 Central
Wisconsin Public Service	2,112	1,978	1,875	1,800	1,747	1,664	1,863 Central
WPL Holdings, Inc.	1,502	1,409	1,345	1,320	1,273	1,233	1,347 Central

Total 510,609 484,230 462,100 433,815 395,736 373,861

Source: 1989, 1988 and 1986 editions of The P.U.R. Analysis of Investor-Owned Electric and Gas Utilities

## Value Line Electric Utilities

	INDUSTRIAL Kwh Sales (000 ) Omitted					Average	
	1988	1987	1986	1985	1984	1983	
Allegheny Power System	16,005	15,557	14,725	14,927	15,431	13,916	15,094 East
American Electric Power	39,142	36,668	34,191	35,779	36,269	31,119	35,528 East
Arizona Public Service	2,756	2,421	2,328				2,502 West
Atlantic Energy, Inc.	1,339	1,324	1,223	1,205	1,197	1,226	1,252 East
Baltimore Gas & Electric	10,994	10,500	10,088	9,457	9,074	8,453	9,761 East
Boston Edison	1,839	1,853	1,837	1,823	1,869	1,738	1,827 East
Carolina Power & Light	11,926	11,475	11,054	10,719	10,618	10,210	11,000 East
Centerior Energy Corp.	12,793	11,985	11,409	11,410	11,441	10,641	11,613 Central
Central & South West	14,578	14,168	14,997	15,591	15,587	14,580	14,917 Central
Central Hudson G & E	1,700	1,670	1,631	1,444	1,292	1,211	1,491 East
Central Illinois Public Serv.	3,514	3,401	3,308	3,351	3,374	3,373	3,387 Central
Central Louisiana Electric	1,832	1,785	1,772	1,664	1,601	1,463	1,686 Central
Central Maine Power	3,576	3,469	3,353	3,297	3,231	2,960	3,314 East
CILCORP Inc.	2,178	1,996	1,899	1,855	1,955	1,620	1,917 Central
Cincinnati Gas & Electric	5,277	5,198	4,911	4,849	4,897	4,661	4,966 Central
CMS Energy Corp.	11,010	10,574	10,422	10,436	10,315	9,531	10,381 Central
Commonwealth Edison Co.	21,598	20,697	20,160	19,936			20,598 Central
Commonwealth Energy Sys	427	471	455	491	509	492	474 East
Delmarva Power & Light	2,729	2,611	2,754	2,606	2,570	2,601	2,645 East
Detroit Edison	19,080	18,225	17,240	16,613	16,324	15,162	17,107 Central
Dominion Resources, Inc.	8,754	8,505	8,265	7,561	7,366	7,214	7,944 East
DPL Inc.	3,744	3,535	3,434	3,385	3,198	2,913	3,368 Central
Duke Power	25,154	24,974	23,212	21,837	21,821	20,907	22,984 East
Duquesne Light	3,302	2,918	2,734	3,522	4,148	3,717	3,390 East
Eastern Utilities Assoc.	869	863	855	833	856	810	848 East
El Paso Electric Co.	698	635	658	697	741	677	684 Central
Empire District Electric	632	608	573	683	674	648	636 Central
Florida Progress Corp.	3,681	3,349	3,123	3,166	2,989	2,701	3,168 East
FPL Group, Inc.	4,132	3,962	4,000	3,885	3,707	3,544	3,872 East
General Public Utilities	12,800	12,140	11,856	11,707	11,770	10,608	11,814 East
Green Mountain Power	464	435	406	376	360	343	397 East
Gulf States Utilities	12,072	11,812	12,159	13,590	15,924	14,257	13,302 Central
Hawaiian Electric	3,375	3,187	3,149	3,060	3,087	3,049	3,151 West
Houston Industries	28,476	27,441	26,193	27,418	30,693	28,944	28,194 Central
Idaho Power	3,654	3,607	3,375	3,514	3,679	3,531	3,560 West
IE Industries Inc.	1,580	1,485	1,440	1,396	1,366	1,290	1,426 Central
Illinois Power	7,415	7,323	7,341	6,933	6,968	6,467	7,075 Central
Interstate Power	2,298	2,056	2,015	1,955	2,026	1,913	2,044 Central
Iowa Resources Inc.	1,790	1,643	1,553	1,518	1,542	1,465	1,585 Central
Iowa Southern	780	739	649	602	523	509	634 Central
IPALCO	4,974	4,727	4,524	4,432	4,397	4,210	4,544 Central
Kansas City Power & Light	2,229	2,316	2,266	2,249	2,272	2,040	2,229 Central
Kansas Gas & Electric	2,942	2,863	2,671	2,694	2,750	2,455	2,729 Central
Kansas Power & Light	1,877	1,816	1,821	1,852	1,777	1,599	1,790 Central
Kentucky Utilities	2,459	2,209	2,112	2,087	2,076	1,904	2,141 Central
Louisville Gas & Electric	2,617	2,524	2,509	2,509	2,549	2,410	2,520 Central

## KWSLS.XLS

MDU Resources Group, Inc.	685	605	577	579	577	545	595 Central
Entergy (Middle South)	21,282	20,615	19,460	21,206	22,494	21,084	21,024 Central
Midwest Energy Co.	1,012	853	736	717	788	765	812 Central
Minnesota Power & Light	7,001	5,641	4,619	5,246	5,739	4,583	5,472 Central
Montana Power	2,754	2,645	2,375	2,163	2,212	2,196	2,391 West
Nevada Power	2,456	2,350	2,175	1,981	1,898	1,660	2,087 West
New England Electric Sys	5,064	4,864	4,733	4,598	4,568	4,203	4,672 East
New York State E & G	3,159	3,018	2,899	2,811	2,832	2,691	2,902 East
Niagara Mohawk Power	11,745	10,922	10,801	10,886	11,194	10,860	11,068 East
NIPSCO	7,641	6,880	6,408				6,976 Central
Northeast Utilities	5,535	5,449	5,394	5,286	5,374	5,046	5,347 East
Northern States Power	14,982	14,191	13,327	12,569	12,250	11,443	13,127 Central
Ohio Edison	9,872	9,067	8,533	8,751	9,161	8,386	8,962 Central
Orange & Rockland Utilities	1,353	1,271	1,189	1,096	1,071	1,033	1,169 East
P S Enterprise Group	10,179	10,120	10,134	10,291	10,444	10,284	10,242 East
P S of Colorado	3,166	3,491	3,301	3,028	2,960	2,527	3,079 West
P S of New Mexico	900	788	842	789	762	742	804 West
Pacific G & E	15,943	16,062	15,972	17,042	16,109	14,987	16,019 West
Pacificorp	17,635	16,277	15,061	14,821	14,379	13,745	15,320 West
Pennsylvania P & L	8,799	8,438	7,986	7,907	8,117	7,623	8,145 East
Portland General Corp.	3,326	3,178	3,068	3,026	3,071	3,002	3,112 West
PSI Holdings, Inc.	6,668	6,378	6,252	6,493	6,482	5,860	6,356 Central
Puget Sound P & L	3,239	2,982	2,799	2,657	2,531	2,383	2,765 West
Rochester Gas & Electric	1,869	1,782	1,776	1,814	1,783	1,610	1,772 East
S. Indiana Gas & Electric	1,819	1,759	1,671	1,576	1,578	1,468	1,645 Central
SCANA Corp.	4,569	4,604	4,418	4,387	4,333	4,151	4,410 East
SCE Corp.	15,416	15,727	15,588	15,707	15,858	15,643	15,657 West
Sierra Pacific Resources	1,263	1,133	1,008	954	1,003	842	1,034 West
Southern Company	43,675	42,113	40,503	39,804	39,055	35,618	40,128 East
Southwestern Public Service	6,253	6,076	6,014	6,182	6,207	5,499	6,039 Central
St. Joseph Light & Power	382	352	330	328	291	303	331 Central
TECO Energy, Inc.	2,249	2,598	2,634	3,572	3,796	3,464	3,052 East
Texas Utilities	22,288	21,421	21,013	20,922	20,344	18,690	20,780 Central
TNP Enterprises, Inc.	2,823	2,747	3,320	3,510	3,193	2,737	3,055 Central
Tuscon Electric Power	1,678	1,566	1,510	1,361	1,274	1,202	1,432 West
Union Electric	8,417	8,217	8,073	8,038	7,928	7,478	8,025 Central
United Illuminating	1,186	1,236	1,232	1,286	1,314	1,256	1,252 East
Utilicorp United	1,014	708	572	547	502	458	634 Central
Washington Water Power	1,240	1,123	1,191	1,238	1,285	1,349	1,238 West
Wisconsin Energy	9,469	6,670	6,409	6,304	6,278	5,950	6,847 Central
Wisconsin Public Service	2,684	2,594	2,432	2,288	2,325	2,208	2,422 Central
WPL Holdings, Inc.	3,020	2,768	2,489	2,434	2,337	2,135	2,531 Central

Total 622,771 594,999 573,474 567,109 552,510 512,791

Source: 1989, 1988 and 1986 editions of The P.U.R. Analysis of Investor-Owned Electric and Gas Utilities

Value Line Electric Utilities  
Residential, Commercial and Industrial KWH Sales  
(000) Omitted

Allegheny Power System	33,037	31,793	30,265	29,632	30,116	27,797	30,440
American Electric Power	82,591	78,008	73,496	74,147	73,755	68,165	75,027
Arizona Public Service	13,878	13,039	12,154				13,024
Atlantic Energy, Inc.	7,294	6,956	6,463	6,142	5,995	5,790	6,440
Baltimore Gas & Electric	23,980	22,575	21,236	19,699	19,235	18,263	20,831
Boston Edison	12,275	11,793	11,249	10,712	10,484	9,797	11,052
Carolina Power & Light	28,840	27,823	26,447	24,919	24,542	23,766	26,056
Centerior Energy Corp.	26,290	24,994	24,175	23,671	23,639	22,574	24,224
Central & South West	40,277	39,005	39,591	39,916	38,904	36,560	39,042
Central Hudson G & E	4,553	4,323	4,127	3,866	3,648	3,454	3,995
Central Illinois Public Serv.	6,975	6,732	6,611	6,534	6,558	6,597	6,668
Central Louisiana Electric	4,872	4,750	4,759	4,509	4,339	4,016	4,541
Central Maine Power	8,816	8,414	7,998	7,684	7,535	7,003	7,908
CILCORP Inc.	4,878	4,541	4,356	4,207	4,344	4,012	4,390
Cincinnati Gas & Electric	16,466	15,690	14,876	14,215	14,046	13,547	14,807
CMS Energy Corp.	28,200	26,764	25,878	25,381	24,979	23,961	25,861
Commonwealth Edison Co.	63,372	59,841	57,830	56,514			59,389
Commonwealth Energy Sys	4,083	3,869	3,578	3,409	3,234	3,039	3,535
Delmarva Power & Light	8,408	7,879	7,621	7,029	6,892	6,581	7,402
Detroit Edison	39,113	37,232	35,233	33,820	33,324	31,897	35,103
Dominion Resources, Inc.	43,660	41,630	39,329	34,911	32,949	31,763	37,374
DPL Inc.	10,695	10,061	9,706	9,370	9,132	8,656	9,603
Duke Power	55,532	54,580	51,160	47,416	47,236	45,465	50,232
Duquesne Light	11,513	10,882	10,415	10,907	11,459	10,879	11,009
Eastern Utilities Assoc.	3,705	3,516	3,360	3,214	3,174	3,110	3,347
El Paso Electric Co.	3,342	3,131	3,039	2,979	2,937	2,797	3,038
Empire District Electric	2,366	2,232	2,100	2,115	2,069	1,966	2,141
Florida Progress Corp.	21,226	19,684	18,515	17,448	16,091	14,829	17,966
FPL Group, Inc.	58,127	54,664	52,266	49,192	45,740	44,291	50,713
General Public Utilities	37,148	34,860	33,289	31,929	31,869	29,831	33,154
Green Mountain Power	1,584	1,492	1,422	1,357	1,325	1,261	1,407
Gulf States Utilities	23,422	22,932	23,255	24,779	26,878	25,285	24,425
Hawaiian Electric	7,329	6,947	6,699	6,325	6,297	6,139	6,623
Houston Industries	55,279	53,331	52,258	53,890	55,880	51,856	53,749
Idaho Power	10,541	10,158	9,920	10,347	10,172	9,578	10,119
IE Industries Inc.	4,118	3,861	3,774	3,643	3,648	3,629	3,779
Illinois Power	14,765	14,426	14,360	13,566	13,643	13,120	13,980
Interstate Power	4,047	3,727	3,639	3,547	3,591	3,485	3,673
Iowa Resources Inc.	5,108	4,713	4,542	4,369	4,404	4,455	4,599
Iowa Southern	1,779	1,671	1,557	1,482	1,411	1,421	1,554
IPALCO	11,098	10,509	10,235	9,737	9,606	9,196	10,064
Kansas City Power & Light	10,035	9,649	9,140	8,663	8,477	8,258	9,037
Kansas Gas & Electric	6,855	6,621	6,364	6,388	6,452	6,081	6,460
Kansas Power & Light	6,955	6,602	6,417	6,246	6,090	5,961	6,379
Kentucky Utilities	9,262	8,638	8,169	7,788	7,736	7,324	8,156
Louisville Gas & Electric	8,009	7,719	7,476	7,184	7,109	6,944	7,407
MDU Resources Group, Inc.	1,775	1,668	1,738	1,790	1,779	1,740	1,748
Entergy (Middle South)	50,629	49,361	48,117	49,189	49,079	46,325	48,783
Midwest Energy Co.	2,882	2,616	2,436	2,439	2,470	2,547	2,565
Minnesota Power & Light	8,656	7,205	6,161	6,746	7,205	6,011	6,997
Montana Power	6,441	6,145	5,830	5,793	5,718	5,499	5,904
Nevada Power	7,347	6,992	6,232	6,024	5,807	5,326	6,288
New England Electric Sys	19,927	18,807	17,742	16,864	16,429	15,555	17,554

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New York State E & G	11,376	10,805	10,462	10,104	10,018	9,625	10,398
Niagara Mohawk Power	33,026	31,295	30,534	29,769	29,877	28,825	30,554
NIPSCO	12,443	11,517	10,823	2,108	2,150	2,260	6,884
Northeast Utilities	23,532	22,425	21,344	20,308	20,082	19,093	21,131
Northern States Power	29,065	27,249	25,972	24,861	24,214	23,185	25,758
Ohio Edison	23,560	22,148	21,139	20,808	21,098	20,217	21,495
Orange & Rockland Utilities	3,834	3,575	3,348	3,138	3,088	2,971	3,326
P S Enterprise Group	36,156	34,409	32,979	31,996	31,269	30,440	32,875
P S of Colorado	18,265	17,447	16,960	16,572	16,001	14,642	16,648
P S of New Mexico	4,490	4,241	4,025	3,874	3,748	3,547	3,988
Pacific G & E	62,425	60,616	58,207	59,162	57,465	54,025	58,650
Pacificorp	37,242	35,159	33,624	33,842	32,873	31,541	34,047
Pennsylvania P & L	26,587	25,052	23,916	22,989	23,098	21,880	23,920
Portland General Corp.	14,115	13,403	13,138	13,247	13,048	12,361	13,219
PSI Holdings, Inc.	16,965	16,247	15,748	15,487	15,580	14,537	15,761
Puget Sound P & L	16,291	15,274	14,984	14,979	14,286	13,406	14,870
Rochester Gas & Electric	5,713	5,485	5,324	5,253	5,158	4,891	5,304
S. Indiana Gas & Electric	3,911	3,799	3,639	3,391	3,378	3,217	3,556
SCANA Corp.	13,194	13,022	12,470	11,770	11,382	10,887	12,121
SCE Corp.	59,357	57,097	54,501	53,401	52,503	49,595	54,409
Sierra Pacific Resources	4,493	4,161	3,869	3,767	3,741	3,471	3,917
Southern Company	101,721	98,289	94,170	89,404	86,034	80,555	91,696
Southwestern Public Service	10,951	10,724	10,657	10,708	10,642	9,584	10,544
St. Joseph Light & Power	1,258	1,167	1,129	1,103	1,060	1,076	1,132
TECO Energy, Inc.	11,030	10,841	10,467	11,035	10,602	9,828	10,634
Texas Utilities	72,109	69,461	67,070	65,572	62,063	56,220	65,416
TNP Enterprises, Inc.	5,991	5,797	6,338	6,480	6,053	5,342	6,000
Tuscon Electric Power	4,872	4,618	4,337	4,067	3,789	3,570	4,209
Union Electric	28,383	27,383	26,662	25,705	25,133	24,110	26,229
United Illuminating	5,230	5,063	4,847	4,751	4,686	4,551	4,855
Utilicorp United	4,525	3,307	2,455	2,290	2,214	2,128	2,820
Washington Water Power	6,108	5,880	5,987	6,281	6,187	5,940	6,064
Wisconsin Energy	21,301	17,853	17,053	16,762	16,577	15,975	17,587
Wisconsin Public Service	6,951	6,603	6,315	6,049	6,000	5,758	6,279
WPL Holdings, Inc.	7,037	6,530	6,123	6,030	5,833	5,600	6,192
Total	1,726,862	1,644,993	1,579,241	1,520,706	1,440,361	1,362,255	
	4.98%	4.16%	3.85%	5.58%	5.73%		

	Value Line Electric Utilities						
	Percent of Retail Kwh Sales to Industrial Customers						
	1988	1987	1986	1985	1984	1983 Average	
Allegheny Power System	48.45%	48.93%	48.65%	50.37%	51.24%	50.06%	49.62%
American Electric Power	47.39%	47.01%	46.52%	48.25%	49.17%	45.65%	47.33%
Arizona Public Service	19.86%	18.57%	19.15%				19.19%
Atlantic Energy, Inc.	18.36%	19.03%	18.92%	19.62%	19.97%	21.17%	19.51%
Baltimore Gas & Electric	45.85%	46.51%	47.50%	48.01%	47.17%	46.28%	46.89%
Boston Edison	14.98%	15.71%	16.33%	17.02%	17.83%	17.74%	16.60%
Carolina Power & Light	41.35%	41.24%	41.80%	43.02%	43.26%	42.96%	42.27%
Centerior Energy Corp.	48.66%	47.95%	47.19%	48.20%	48.40%	47.14%	47.92%
Central & South West	36.19%	36.32%	37.88%	39.06%	40.07%	39.88%	38.23%
Central Hudson G & E	37.34%	38.63%	39.52%	37.35%	35.42%	35.06%	37.22%
Central Illinois Public Serv.	50.38%	50.52%	50.04%	51.29%	51.45%	51.13%	50.80%
Central Louisiana Electric	37.60%	37.58%	37.23%	36.90%	36.90%	36.43%	37.11%
Central Maine Power	40.56%	41.23%	41.92%	42.91%	42.88%	42.27%	41.96%
CILCORP Inc.	44.65%	43.96%	43.60%	44.09%	45.00%	40.38%	43.61%
Cincinnati Gas & Electric	32.05%	33.13%	33.01%	34.11%	34.86%	34.41%	33.60%
CMS Energy Corp.	39.04%	39.51%	40.27%	41.12%	41.29%	39.78%	40.17%
Commonwealth Edison Co.	34.08%	34.59%	34.86%	35.28%			34.70%
Commonwealth Energy Sys	10.46%	12.17%	12.72%	14.40%	15.74%	16.19%	13.61%
Delmarva Power & Light	32.46%	33.14%	36.14%	37.07%	37.29%	39.52%	35.94%
Detroit Edison	48.78%	48.95%	48.93%	49.12%	48.99%	47.53%	48.72%
Dominion Resources, Inc.	20.05%	20.43%	21.02%	21.66%	22.36%	22.71%	21.37%
DPL Inc.	35.01%	35.14%	35.38%	36.13%	35.02%	33.65%	35.05%
Duke Power	45.30%	45.76%	45.37%	46.05%	46.20%	45.98%	45.78%
Duquesne Light	28.68%	26.81%	26.25%	32.29%	36.20%	34.17%	30.73%
Eastern Utilities Assoc.	23.45%	24.54%	25.45%	25.92%	26.97%	26.05%	25.40%
El Paso Electric Co.	20.89%	20.28%	21.65%	23.40%	25.23%	24.20%	21.61%
Empire District Electric	26.71%	27.24%	27.29%	32.29%	32.58%	32.96%	29.84%
Florida Progress Corp.	17.34%	17.01%	16.87%	18.15%	18.58%	18.21%	17.69%
FPL Group, Inc.	7.11%	7.25%	7.65%	7.90%	8.10%	8.00%	7.67%
General Public Utilities	34.46%	34.83%	35.62%	36.67%	36.93%	35.56%	35.68%
Green Mountain Power	29.29%	29.16%	28.55%	27.71%	27.17%	27.20%	28.18%
Gulf States Utilities	51.54%	51.51%	52.29%	54.84%	59.25%	56.39%	54.30%
Hawaiian Electric	46.05%	45.88%	47.01%	48.38%	49.02%	49.67%	47.67%
Houston Industries	51.51%	51.45%	50.12%	50.88%	54.93%	55.82%	52.45%
Idaho Power	34.66%	35.51%	34.02%	33.96%	36.17%	36.87%	35.20%
IE Industries Inc.	38.37%	38.46%	38.16%	38.32%	37.45%	35.55%	37.72%
Illinois Power	50.22%	50.76%	51.12%	51.11%	51.07%	49.29%	50.60%
Interstate Power	56.78%	55.17%	55.37%	55.12%	56.42%	54.89%	55.62%
Iowa Resources Inc.	35.04%	34.86%	34.19%	34.74%	35.01%	32.88%	34.46%
Iowa Southern	43.84%	44.23%	41.68%	40.62%	37.07%	35.82%	40.54%
IPALCO	44.82%	44.98%	44.20%	45.52%	45.77%	45.78%	45.18%
Kansas City Power & Light	22.21%	24.00%	24.79%	25.96%	26.80%	24.70%	24.75%
Kansas Gas & Electric	42.92%	43.24%	41.97%	42.17%	42.62%	40.37%	42.22%
Kansas Power & Light	26.99%	27.51%	28.38%	29.65%	29.18%	26.82%	28.09%
Kentucky Utilities	26.55%	25.57%	25.79%	26.80%	26.84%	26.00%	26.26%
Louisville Gas & Electric	32.68%	32.70%	33.56%	34.92%	35.86%	34.71%	34.07%
MDU Resources Group, Inc.	38.59%	36.27%	33.20%	32.35%	32.43%	31.32%	34.03%
Entergy (Middle South)	42.04%	41.76%	40.44%	43.11%	45.83%	45.51%	43.12%
Midwest Energy Co.	35.11%	32.61%	30.21%	29.40%	31.90%	30.04%	31.55%
Minnesota Power & Light	80.88%	78.29%	74.97%	77.76%	79.65%	76.24%	77.97%
Montana Power	42.76%	43.04%	40.74%	37.34%	38.68%	39.93%	40.42%
Nevada Power	33.43%	33.61%	34.90%	32.89%	32.68%	31.17%	33.11%

## KWSLS.XLS

New England Electric Sys	25.41%	25.86%	26.68%	27.27%	27.80%	27.02%	26.67%
New York State E & G	27.77%	27.93%	27.71%	27.82%	28.27%	27.96%	27.91%
Niagara Mohawk Power	35.56%	34.90%	35.37%	36.57%	37.47%	37.68%	36.26%
NIPSCO	61.41%	59.74%	59.21%				60.12%
Northeast Utilities	23.52%	24.30%	25.27%	26.03%	26.76%	26.43%	25.38%
Northern States Power	51.55%	52.08%	51.31%	50.56%	50.59%	49.36%	50.91%
Ohio Edison	41.90%	40.94%	40.37%	42.06%	43.42%	41.48%	41.69%
Orange & Rockland Utilities	35.29%	35.55%	35.51%	34.93%	34.68%	34.77%	35.12%
P S Enterprise Group	28.15%	29.41%	30.73%	32.16%	33.40%	33.78%	31.27%
P S of Colorado	17.33%	20.01%	19.46%	18.27%	18.50%	17.26%	18.47%
P S of New Mexico	20.04%	18.58%	20.92%	20.37%	20.33%	20.92%	20.19%
Pacific G & E	25.54%	26.50%	27.44%	28.81%	28.03%	27.74%	27.34%
Pacificorp	47.35%	46.30%	44.79%	43.79%	43.74%	43.58%	44.93%
Pennsylvania P & L	33.10%	33.68%	33.39%	34.39%	35.14%	34.84%	34.09%
Portland General Corp.	23.56%	23.71%	23.35%	22.84%	23.54%	24.29%	23.55%
PSI Holdings, Inc.	39.30%	39.26%	39.70%	41.93%	41.60%	40.31%	40.35%
Puget Sound P & L	19.88%	19.52%	18.68%	17.74%	17.72%	17.78%	18.55%
Rochester Gas & Electric	32.71%	32.49%	33.36%	34.53%	34.57%	32.92%	33.43%
S. Indiana Gas & Electric	46.51%	46.30%	45.92%	46.48%	46.71%	45.63%	46.26%
SCANA Corp.	34.63%	35.36%	35.43%	37.27%	38.07%	38.13%	36.48%
SCE Corp.	25.97%	27.54%	28.60%	29.41%	30.20%	31.54%	28.88%
Sierra Pacific Resources	28.11%	27.23%	26.05%	25.33%	26.81%	24.26%	26.30%
Southern Company	42.94%	42.85%	43.01%	44.52%	45.39%	44.22%	43.82%
Southwestern Public Service	57.10%	56.66%	56.43%	57.73%	58.33%	57.38%	57.27%
St. Joseph Light & Power	30.37%	30.16%	29.23%	29.74%	27.45%	28.16%	29.18%
TECO Energy, Inc.	20.39%	23.96%	25.16%	32.37%	35.80%	35.25%	28.82%
Texas Utilities	30.91%	30.84%	31.33%	31.91%	32.78%	33.24%	31.83%
TNP Enterprises, Inc.	47.12%	47.39%	52.38%	54.17%	52.75%	51.24%	50.84%
Tuscon Electric Power	34.44%	33.91%	34.82%	33.46%	33.62%	33.67%	33.99%
Union Electric	29.66%	30.01%	30.28%	31.27%	31.54%	31.02%	30.63%
United Illuminating	22.68%	24.41%	25.42%	27.07%	28.04%	27.60%	25.87%
Utilicorp United	22.41%	21.41%	23.30%	23.89%	22.67%	21.52%	22.53%
Washington Water Power	20.30%	19.10%	19.89%	19.71%	20.77%	22.71%	20.41%
Wisconsin Energy	44.45%	37.36%	37.58%	37.61%	37.87%	37.25%	38.69%
Wisconsin Public Service	38.61%	39.29%	38.51%	37.82%	38.75%	38.35%	38.56%
WPL Holdings, Inc.	42.92%	42.39%	40.65%	40.36%	40.07%	38.13%	40.75%
Average	35.26%	35.24%	35.31%	35.95%	36.47%	35.76%	

Value Line Electric Utilities  
Residential Kwh Sales Growth from Prior Year

	1988	1987	1986	1985	1984	Standard Deviation
Allegheny Power System	4.88%	4.39%	5.69%	-1.08%	5.85%	2.87%
American Electric Power	5.32%	5.43%	1.91%	0.71%	-0.05%	2.57%
Arizona Public Service	5.83%	9.90%				2.88%
Atlantic Energy, Inc.	5.69%	7.08%	7.62%	-0.34%	4.01%	3.20%
Baltimore Gas & Electric	7.92%	9.27%	10.08%	2.71%	3.81%	3.31%
Boston Edison	7.59%	4.59%	5.25%	0.24%	4.03%	2.66%
Carolina Power & Light	2.50%	6.49%	9.47%	0.07%	2.88%	3.70%
Centerior Energy Corp.	3.92%	2.02%	3.46%	-1.48%	1.22%	2.14%
Central & South West	3.83%	1.35%	0.13%	3.64%	5.93%	2.27%
Central Hudson G & E	7.53%	6.33%	5.98%	-0.08%	4.83%	2.96%
Central Illinois Public Serv.	5.03%	2.20%	4.18%	-0.09%	-3.05%	3.29%
Central Louisiana Electric	2.92%	-0.34%	4.86%	4.20%	5.81%	2.39%
Central Maine Power	5.13%	4.39%	5.30%	0.99%	6.25%	2.02%
CILCORP Inc.	6.72%	4.29%	4.48%	-3.67%	-2.66%	4.67%
Cincinnati Gas & Electric	6.41%	5.41%	6.78%	-0.26%	1.59%	3.14%
CMS Energy Corp.	6.00%	3.94%	2.87%	0.75%	0.49%	2.30%
Commonwealth Edison Co.	7.25%	4.74%	1.73%			2.76%
Commonwealth Energy Sys	7.78%	8.15%	6.98%	4.83%	5.80%	1.38%
Delmarva Power & Light	7.80%	9.46%	10.59%	0.36%	5.29%	4.07%
Detroit Edison	5.29%	6.12%	4.12%	-0.72%	-1.03%	3.39%
Dominion Resources, Inc.	4.27%	5.17%	14.26%	5.36%	3.06%	4.47%
DPL Inc.	7.35%	3.67%	5.25%	-1.18%	1.47%	3.31%
Duke Power	0.99%	6.04%	9.80%	-1.74%	1.93%	4.53%
Duquesne Light	2.97%	3.65%	3.83%	-2.40%	0.45%	2.66%
Eastern Utilities Assoc.	6.33%	5.23%	4.13%	0.58%	0.67%	2.64%
El Paso Electric Co.	5.59%	5.92%	3.24%	3.06%	2.85%	1.50%
Empire District Electric	6.57%	5.24%	4.91%	0.47%	5.06%	2.32%
Florida Progress Corp.	7.24%	5.09%	7.02%	7.26%	6.80%	0.91%
FPL Group, Inc.	6.19%	4.20%	6.32%	8.20%	1.34%	2.60%
General Public Utilities	6.95%	5.65%	5.72%	-1.16%	3.41%	3.21%
Green Mountain Power	4.81%	2.08%	2.72%	1.18%	5.17%	1.74%
Gulf States Utilities	1.88%	0.55%	-0.80%	0.26%	9.18%	4.01%
Hawaiian Electric	3.67%	5.54%	4.15%	2.12%	1.04%	1.76%
Houston Industries	3.74%	0.50%	-2.36%	5.19%	10.31%	4.81%
Idaho Power	5.08%	-4.46%	-4.99%	1.72%	10.53%	6.56%
IE Industries Inc.	6.57%	1.40%	3.58%	-2.98%	-4.87%	4.68%
Illinois Power	4.01%	1.02%	6.90%	-1.26%	-2.45%	3.83%
Interstate Power	6.07%	3.24%	1.25%	0.00%	-2.97%	3.40%
Iowa Resources Inc.	7.98%	2.52%	3.01%	-1.91%	-7.63%	5.87%
Iowa Southern	7.69%	3.10%	3.20%	-2.09%	-4.81%	4.91%
IPALCO	6.77%	4.34%	6.90%	0.59%	1.71%	2.87%
Kansas City Power & Light	6.62%	7.43%	6.85%	1.22%	-3.46%	4.74%
Kansas Gas & Electric	5.39%	2.06%	-1.45%	-2.41%	0.76%	3.09%
Kansas Power & Light	6.64%	3.76%	4.32%	-0.10%	-3.44%	3.99%
Kentucky Utilities	5.69%	5.33%	6.63%	-1.10%	2.65%	3.13%
Louisville Gas & Electric	2.91%	5.20%	7.37%	0.80%	-2.49%	3.83%
MDU Resources Group, Inc.	8.52%	-4.89%	-4.79%	-1.70%	0.13%	5.49%
Entergy (Middle South)	0.60%	-0.38%	2.21%	4.23%	3.91%	2.01%
Midwest Energy Co.	6.91%	3.58%	-3.25%	1.43%	-8.35%	5.98%
Minnesota Power & Light	6.31%	-2.22%	1.50%	1.40%	2.08%	3.04%
Montana Power	4.89%	-1.94%	-7.26%	3.51%	8.90%	6.30%

## KWSLS.XLS

Nevada Power	6.36%	13.66%	-1.11%	1.89%	13.23%	6.62%
New England Electric Sys	6.88%	6.58%	5.35%	1.50%	3.37%	2.28%
New York State E & G	4.95%	2.38%	3.81%	0.87%	4.02%	1.40%
Niagara Mohawk Power	4.60%	3.16%	4.27%	0.36%	4.27%	1.75%
NIPSCO	3.98%	6.45%	2.94%	-1.95%	-4.87%	4.61%
Northeast Utilities	6.65%	6.66%	5.58%	0.42%	3.31%	2.67%
Northern States Power	8.56%	2.76%	2.41%	2.05%	-0.45%	3.32%
Ohio Edison	4.51%	3.59%	3.75%	-0.66%	1.50%	2.11%
Orange & Rockland Utilities	8.13%	7.49%	5.43%	0.58%	3.33%	3.10%
P S Enterprise Group	6.90%	6.55%	4.00%	0.21%	-0.35%	3.42%
P S of Colorado	3.16%	3.18%	0.61%	1.94%	6.57%	2.21%
P S of New Mexico	3.04%	7.02%	2.58%	3.13%	6.22%	2.06%
Pacific G & E	2.88%	4.70%	-0.56%	1.63%	4.81%	2.25%
Pacificorp	3.87%	-0.01%	-4.54%	0.82%	4.00%	3.49%
Pennsylvania P & L	7.63%	4.40%	4.99%	-1.18%	3.88%	3.21%
Portland General Corp.	6.68%	-0.34%	-4.62%	1.28%	6.15%	4.71%
PSI Holdings, Inc.	5.31%	3.18%	5.10%	-3.74%	4.23%	3.76%
Puget Sound P & L	6.94%	-1.78%	-2.89%	3.03%	5.17%	4.29%
Rochester Gas & Electric	4.16%	4.23%	2.33%	0.65%	2.57%	1.48%
S. Indiana Gas & Electric	2.04%	3.21%	7.81%	1.10%	-0.30%	3.10%
SCANA Corp.	0.86%	4.07%	10.79%	2.88%	3.49%	3.76%
SCE Corp.	5.77%	5.29%	0.99%	1.60%	6.50%	2.54%
Sierra Pacific Resources	5.62%	4.46%	-0.78%	1.34%	4.53%	2.66%
Southern Company	1.50%	3.67%	8.91%	3.54%	2.90%	2.82%
Southwestern Public Service	2.30%	0.68%	1.75%	0.93%	9.71%	3.77%
St. Joseph Light & Power	8.82%	2.20%	2.02%	1.13%	-2.86%	4.20%
TECO Energy, Inc.	5.37%	4.38%	4.25%	8.14%	5.31%	1.57%
Texas Utilities	3.57%	4.52%	1.25%	7.09%	12.55%	4.32%
TNP Enterprises, Inc.	4.19%	2.52%	1.75%	3.38%	11.12%	3.76%
Tuscon Electric Power	6.21%	9.98%	3.50%	8.24%	5.67%	2.48%
Union Electric	3.88%	3.25%	4.96%	0.91%	-2.39%	2.93%
United Illuminating	5.00%	4.76%	2.72%	0.73%	0.31%	2.19%
Utilicorp United	42.62%	37.28%	9.20%	0.29%	0.97%	20.37%
Washington Water Power	2.21%	-3.74%	-7.94%	2.07%	6.39%	5.63%
Wisconsin Energy	5.59%	3.04%	2.21%	1.31%	0.27%	2.02%
Wisconsin Public Service	6.11%	1.15%	2.40%	1.71%	2.23%	1.96%
WPL Holdings, Inc.	6.88%	2.80%	0.57%	2.38%	-0.40%	2.80%
					Average	3.45%

Value Line Electric Utilities  
Commercial Kwh Sales Growth from Prior Year

	1988	1987	1986	1985	1984	Standard Deviation
Allegheny Power System	4.95%	4.63%	5.65%	2.31%	5.69%	1.38%
American Electric Power	4.78%	4.81%	3.22%	4.86%	3.13%	0.90%
Arizona Public Service	3.72%	6.38%				1.88%
Atlantic Energy, Inc.	5.79%	7.96%	4.44%	6.88%	6.54%	1.31%
Baltimore Gas & Electric	6.64%	6.09%	6.08%	-3.25%	3.10%	4.14%
Boston Edison	3.76%	6.10%	6.19%	4.66%	8.41%	1.77%
Carolina Power & Light	4.84%	5.80%	6.92%	4.75%	2.47%	1.64%
Centerior Energy Corp.	3.57%	1.78%	4.82%	2.73%	3.35%	1.12%
Central & South West	3.04%	0.56%	2.29%	5.16%	6.28%	2.28%
Central Hudson G & E	7.35%	6.24%	0.00%	5.99%	5.27%	2.92%
Central Illinois Public Serv.	1.14%	-2.33%	2.82%	0.10%	3.23%	2.25%
Central Louisiana Electric	1.70%	-1.57%	5.28%	3.30%	10.41%	4.46%
Central Maine Power	7.18%	9.61%	6.78%	3.42%	6.79%	2.21%
CILCORP Inc.	5.25%	2.65%	4.44%	1.40%	3.63%	1.51%
Cincinnati Gas & Electric	6.96%	5.12%	5.87%	6.21%	5.03%	0.80%
CMS Energy Corp.	6.38%	5.72%	4.08%	3.38%	3.07%	1.46%
Commonwealth Edison Co.	6.22%	3.14%	4.19%			1.57%
Commonwealth Energy Sys	7.41%	9.43%	7.07%	9.35%	8.21%	1.08%
Delmarva Power & Light	7.81%	6.96%	9.46%	4.49%	12.42%	2.95%
Detroit Edison	5.55%	4.96%	5.20%	4.09%	5.73%	0.64%
Dominion Resources, Inc.	6.79%	8.57%	12.70%	9.00%	5.80%	2.65%
DPL Inc.	5.17%	4.66%	4.07%	4.29%	6.60%	1.01%
Duke Power	4.67%	5.80%	8.59%	3.81%	5.64%	1.80%
Duquesne Light	3.18%	3.70%	4.12%	3.28%	3.19%	0.41%
Eastern Utilities Assoc.	7.47%	6.60%	6.33%	5.03%	0.91%	2.59%
El Paso Electric Co.	6.23%	3.87%	5.32%	4.70%	4.26%	0.93%
Empire District Electric	7.06%	7.94%	9.19%	6.07%	7.09%	1.17%
Florida Progress Corp.	7.70%	7.95%	9.12%	12.29%	10.42%	1.90%
FPL Group, Inc.	6.88%	6.14%	6.81%	7.27%	5.59%	0.67%
General Public Utilities	7.43%	6.43%	6.32%	2.88%	6.06%	1.73%
Green Mountain Power	7.16%	6.16%	4.51%	2.19%	5.07%	1.88%
Gulf States Utilities	2.30%	-0.20%	-0.87%	4.62%	-11.16%	6.05%
Hawaiian Electric	6.79%	6.33%	14.26%	1.23%	7.50%	4.65%
Houston Industries	3.24%	-2.17%	-0.47%	4.99%	9.44%	4.59%
Idaho Power	5.17%	4.77%	-3.41%	9.18%	4.04%	4.57%
IE Industries Inc.	7.09%	2.24%	4.19%	0.09%	0.47%	2.89%
Illinois Power	2.69%	1.45%	4.25%	0.30%	4.74%	1.86%
Interstate Power	2.94%	2.47%	2.96%	3.96%	3.02%	0.54%
Iowa Resources Inc.	8.22%	2.98%	7.54%	1.94%	1.34%	3.23%
Iowa Southern	6.29%	1.83%	3.14%	1.27%	1.62%	2.06%
IPALCO	4.68%	-2.91%	8.68%	3.60%	8.62%	4.75%
Kansas City Power & Light	6.33%	6.15%	7.40%	4.94%	2.31%	1.95%
Kansas Gas & Electric	2.56%	1.39%	1.78%	2.71%	3.93%	0.98%
Kansas Power & Light	5.66%	4.44%	4.82%	3.57%	0.96%	1.80%
Kentucky Utilities	6.00%	6.48%	6.55%	3.57%	7.33%	1.43%
Louisville Gas & Electric	4.87%	3.86%	4.93%	4.62%	4.58%	0.43%
MDU Resources Group, Inc.	-8.12%	-14.16%	-3.05%	5.03%	1.39%	7.61%
Entergy (Middle South)	4.27%	1.33%	2.71%	6.84%	7.57%	2.65%
Midwest Energy Co.	5.14%	3.85%	1.00%	3.50%	-2.16%	2.89%
Minnesota Power & Light	5.31%	5.46%	4.27%	3.39%	3.35%	1.01%
Montana Power	5.78%	4.64%	-2.18%	3.57%	3.32%	3.07%

## KWSLS.XLS

Nevada Power	3.28%	16.06%	3.62%	7.06%	-6.29%	8.04%
New England Electric Sys	6.29%	7.83%	6.84%	5.63%	5.80%	0.89%
New York State E & G	6.49%	3.97%	3.51%	2.57%	2.96%	1.54%
Niagara Mohawk Power	4.33%	3.32%	4.71%	1.73%	3.75%	1.16%
NIPSCO	3.14%	3.65%				0.36%
Northeast Utilities	5.32%	6.19%	6.83%	4.07%	6.33%	1.08%
Northern States Power	6.57%	4.19%	3.72%	4.04%	6.59%	1.43%
Ohio Edison	4.81%	3.99%	5.58%	3.23%	0.10%	2.12%
Orange & Rockland Utilities	7.02%	5.59%	6.17%	2.23%	5.21%	1.82%
P S Enterprise Group	6.98%	6.18%	6.04%	6.92%	5.94%	0.50%
P S of Colorado	11.22%	1.58%	0.99%	5.04%	8.31%	4.38%
P S of New Mexico	4.64%	9.57%	3.63%	3.46%	6.62%	2.56%
Pacific G & E	5.73%	6.27%	1.11%	2.07%	7.09%	2.68%
Pacificorp	3.80%	3.78%	0.26%	5.51%	3.82%	1.92%
Pennsylvania P & L	6.37%	4.16%	6.41%	3.08%	6.67%	1.62%
Portland General Corp.	4.13%	3.87%	2.72%	4.04%	7.24%	1.69%
PSI Holdings, Inc.	3.15%	4.86%	6.18%	2.31%	5.68%	1.66%
Puget Sound P & L	5.00%	5.33%	2.01%	8.13%	9.45%	2.91%
Rochester Gas & Electric	3.40%	4.52%	4.15%	3.38%	3.22%	0.57%
S. Indiana Gas & Electric	3.17%	4.21%	9.20%	0.50%	7.24%	3.42%
SCANA Corp.	4.43%	5.13%	6.98%	7.06%	6.14%	1.15%
SCE Corp.	6.62%	7.27%	5.42%	4.12%	9.40%	1.99%
Sierra Pacific Resources	7.50%	6.94%	3.80%	3.95%	3.82%	1.85%
Southern Company	5.52%	5.90%	7.35%	8.15%	6.68%	1.07%
Southwestern Public Service	-0.04%	-0.41%	3.35%	3.10%	7.52%	3.20%
St. Joseph Light & Power	5.71%	1.74%	4.56%	0.30%	2.82%	2.16%
TECO Energy, Inc.	8.08%	6.39%	5.94%	11.82%	9.38%	2.39%
Texas Utilities	3.87%	4.06%	5.43%	6.95%	9.55%	2.35%
TNP Enterprises, Inc.	3.41%	-0.94%	1.43%	4.50%	8.00%	3.36%
Tuscon Electric Power	2.14%	4.85%	5.99%	6.59%	7.06%	1.96%
Union Electric	4.47%	2.96%	5.47%	4.53%	10.30%	2.81%
United Illuminating	6.26%	6.84%	5.80%	4.68%	4.35%	1.05%
Utilicorp United	23.69%	39.17%	6.29%	4.17%	5.01%	15.41%
Washington Water Power	2.51%	3.71%	0.21%	4.27%	7.44%	2.64%
Wisconsin Energy	6.04%	7.40%	1.29%	1.81%	5.71%	2.73%
Wisconsin Public Service	6.77%	5.49%	4.17%	3.03%	4.99%	1.40%
WPL Holdings, Inc.	6.60%	4.76%	1.89%	3.69%	3.24%	1.76%

Average 2.34%

Value Line Electric Utilities  
Industrial Kwh Sales Growth from Prior Year

	1988	1987	1986	1985	1984	Standard Deviation
Allegheny Power System	2.88%	5.65%	-1.35%	-3.27%	10.89%	5.64%
American Electric Power	6.75%	7.24%	-4.44%	-1.35%	16.55%	8.23%
Arizona Public Service	13.84%	3.99%				6.96%
Atlantic Energy, Inc.	1.13%	8.26%	1.49%	0.67%	-2.37%	3.90%
Baltimore Gas & Electric	4.70%	4.08%	6.67%	4.22%	7.35%	1.50%
Boston Edison	-0.76%	0.87%	0.77%	-2.46%	7.54%	3.80%
Carolina Power & Light	3.93%	3.81%	3.13%	0.95%	4.00%	1.28%
Centerior Energy Corp.	6.74%	5.05%	-0.01%	-0.27%	7.52%	3.71%
Central & South West	2.89%	-5.53%	-3.81%	0.03%	6.91%	5.03%
Central Hudson G & E	1.80%	2.39%	12.95%	11.76%	6.69%	5.16%
Central Illinois Public Serv.	3.32%	2.81%	-1.28%	-0.68%	0.03%	2.09%
Central Louisiana Electric	2.63%	0.73%	6.49%	3.94%	9.43%	3.40%
Central Maine Power	3.08%	3.46%	1.70%	2.04%	9.16%	3.03%
CILCORP Inc.	9.12%	5.11%	2.37%	-5.12%	20.68%	9.51%
Cincinnati Gas & Electric	1.52%	5.84%	1.28%	-0.98%	5.06%	2.84%
CMS Energy Corp.	4.12%	1.46%	-0.13%	1.17%	8.23%	3.32%
Commonwealth Edison Co.	4.35%	2.66%	1.12%			1.62%
Commonwealth Energy Sys	-9.34%	3.52%	-7.33%	-3.54%	3.46%	5.97%
Delmarva Power & Light	4.52%	-5.19%	5.68%	1.40%	-1.19%	4.40%
Detroit Edison	4.69%	5.71%	3.77%	1.77%	7.66%	2.19%
Dominion Resources, Inc.	2.93%	2.90%	9.31%	2.65%	2.11%	3.00%
DPL Inc.	5.91%	2.94%	1.45%	5.85%	9.78%	3.21%
Duke Power	0.72%	7.59%	6.30%	0.07%	4.37%	3.33%
Duquesne Light	13.16%	6.73%	-22.37%	-15.09%	11.60%	16.39%
Eastern Utilities Assoc.	0.70%	0.94%	2.64%	-2.69%	5.68%	3.05%
El Paso Electric Co.	9.92%	-3.50%	-5.60%	-5.94%	9.45%	8.11%
Empire District Electric	3.95%	6.11%	-16.11%	1.34%	4.01%	9.08%
Florida Progress Corp.	9.91%	7.24%	-1.36%	5.92%	10.66%	4.79%
FPL Group, Inc.	4.29%	-0.95%	2.96%	4.80%	4.60%	2.40%
General Public Utilities	5.44%	2.40%	1.27%	-0.54%	10.95%	4.50%
Green Mountain Power	6.67%	7.14%	7.98%	4.44%	4.96%	1.49%
Gulf States Utilities	2.20%	-2.85%	-10.53%	-14.66%	11.69%	10.43%
Hawaiian Electric	5.90%	1.21%	2.91%	-0.87%	1.25%	2.52%
Houston Industries	3.77%	4.76%	-4.47%	-10.67%	6.04%	7.20%
Idaho Power	1.30%	6.87%	-3.96%	-4.48%	4.19%	4.98%
IE Industries Inc.	6.40%	3.13%	3.15%	2.20%	5.89%	1.87%
Illinois Power	1.26%	-0.25%	5.88%	-0.50%	7.75%	3.76%
Interstate Power	11.77%	2.03%	3.07%	-3.50%	5.91%	5.59%
Iowa Resources Inc.	8.95%	5.80%	2.31%	-1.56%	5.26%	3.97%
Iowa Southern	5.55%	13.87%	7.81%	15.11%	2.75%	5.32%
IPALCO	5.23%	4.49%	2.08%	0.80%	4.44%	1.88%
Kansas City Power & Light	-3.76%	2.21%	0.76%	-1.01%	11.37%	5.74%
Kansas Gas & Electric	2.76%	7.19%	-0.85%	-2.04%	12.02%	5.83%
Kansas Power & Light	3.36%	-0.27%	-1.67%	4.22%	11.13%	4.99%
Kentucky Utilities	11.32%	4.59%	1.20%	0.53%	9.03%	4.75%
Louisville Gas & Electric	3.68%	0.60%	0.00%	-1.57%	5.77%	2.97%
MDU Resources Group, Inc.	13.22%	4.85%	-0.35%	0.35%	5.87%	5.44%
Entergy (Middle South)	3.24%	5.94%	-8.23%	-5.73%	6.69%	6.90%

## KWSLS.XLS

Midwest Energy Co.	18.64%	15.90%	2.65%	-9.01%	3.01%	11.21%
Minnesota Power & Light	24.11%	22.13%	-11.95%	-8.59%	25.22%	18.74%
Montana Power	4.12%	11.37%	9.80%	-2.22%	0.73%	5.80%
Nevada Power	4.51%	8.05%	9.79%	4.37%	14.34%	4.14%
New England Electric Sys	4.11%	2.77%	2.94%	0.66%	8.68%	2.98%
New York State E & G	4.67%	4.10%	3.13%	-0.74%	5.24%	2.38%
Niagara Mohawk Power	7.54%	1.12%	-0.78%	-2.75%	3.08%	3.94%
NIPSCO	11.06%	7.37%				2.61%
Northeast Utilities	1.58%	1.02%	2.04%	-1.64%	6.50%	2.94%
Northern States Power	5.57%	6.48%	6.03%	2.60%	7.05%	1.73%
Ohio Edison	8.88%	6.26%	-2.49%	-4.48%	9.24%	6.50%
Orange & Rockland Utilities	6.45%	6.90%	8.49%	2.33%	3.68%	2.50%
P S Enterprise Group	0.58%	-0.14%	-1.53%	-1.46%	1.56%	1.33%
P S of Colorado	-9.31%	5.76%	9.02%	2.30%	17.13%	9.70%
P S of New Mexico	14.21%	-6.41%	6.72%	3.54%	2.70%	7.45%
Pacific G & E	-0.74%	0.56%	-6.28%	5.79%	7.49%	5.49%
Pacificorp	8.34%	8.07%	1.62%	3.07%	4.61%	2.99%
Pennsylvania P & L	4.28%	5.66%	1.00%	-2.59%	6.48%	3.74%
Portland General Corp.	4.66%	3.59%	1.39%	-1.47%	2.30%	2.35%
PSI Holdings, Inc.	4.55%	2.02%	-3.71%	0.17%	10.61%	5.34%
Puget Sound P & L	8.62%	6.54%	5.34%	4.98%	6.21%	1.42%
Rochester Gas & Electric	4.88%	0.34%	-2.09%	1.74%	10.75%	4.95%
S. Indiana Gas & Electric	3.41%	5.27%	6.03%	-0.13%	7.49%	2.93%
SCANA Corp.	-0.76%	4.21%	0.71%	1.25%	4.38%	2.26%
SCE Corp.	-1.98%	0.89%	-0.76%	-0.95%	1.37%	1.38%
Sierra Pacific Resources	11.47%	12.40%	5.66%	-4.89%	19.12%	9.00%
Southern Company	3.71%	3.98%	1.76%	1.92%	9.65%	3.21%
Southwestern Public Service	2.91%	1.03%	-2.72%	-0.40%	12.88%	6.03%
St. Joseph Light & Power	8.52%	6.67%	0.61%	12.71%	-3.96%	6.60%
TECO Energy, Inc.	-13.43%	-1.37%	-26.26%	-5.90%	9.58%	13.41%
Texas Utilities	4.05%	1.94%	0.43%	2.84%	8.85%	3.21%
TNP Enterprises, Inc.	2.77%	-17.26%	-5.41%	9.93%	16.66%	13.25%
Tuscon Electric Power	7.15%	3.71%	10.95%	6.83%	5.99%	2.62%
Union Electric	2.43%	1.78%	0.44%	1.39%	6.02%	2.14%
United Illuminating	-4.05%	0.32%	-4.20%	-2.13%	4.62%	3.68%
Utilicorp United	43.22%	23.78%	4.57%	8.96%	9.61%	15.83%
Washington Water Power	10.42%	-5.71%	-3.80%	-3.66%	-4.74%	6.71%
Wisconsin Energy	41.96%	4.07%	1.67%	0.41%	5.51%	17.58%
Wisconsin Public Service	3.47%	6.66%	6.29%	-1.59%	5.30%	3.38%
WPL Holdings, Inc.	9.10%	11.21%	2.26%	4.15%	9.46%	3.82%

Average 5.16%

Stability of Residential, Commercial, and Industrial Sales  
In aggregate for U. S. Electric Utilities

	1986	1985	1984	1983	1982	1981	1980	1979	
KWH SALES, BY CLASS OF SERVICE(Millions of Kwh):									
Residential	822,423	794,404	780,679	750,293	732,678	730,479	734,411	695,996	
Commercial	632,811	613,155	583,422	545,601	516,959	521,698	524,122	494,723	
Industrial	817,533	821,661	835,989	782,984	770,398	819,641	793,812	817,617	
ANNUAL PERCENT CHANGE:									
Residential	3.53%	1.76%	4.05%	2.40%	0.30%	-0.54%	5.52%		Stand. Dev. 2.13%
Commercial	3.21%	5.10%	6.93%	5.54%	-0.91%	-0.46%	5.94%		3.15%
Industrial	-0.50%	-1.71%	6.77%	1.63%	-6.01%	3.25%	-2.91%		4.22%

Source of KWH sales:1989 Moody's Manual, Page a23

CERTIFICATE OF SERVICE  
Docket No. 891345-EI

I HEREBY CERTIFY that a true copy of the foregoing has been furnished by U.S. Mail\*, hand-delivery\*\*, or by facsimile\*\*\* to the following parties on this 27th day of April, 1990.

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