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TESTIMONY OF JAMES A. ROTHSCHILD

RE: PHILADELPHIA ELECTRIC COMPANY

OVERALL COST OF CAPITAL

Docket R-850152

JANUARY, 1986

TESTIMONY OF

JAMES A. ROTHSCHILD

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I. SUMMARY OF CONCLUSIONS

Q. Please summarize your conclusions on the cost of capital to Philadelphia Electric Company.

A. The overall cost of capital that should be allowed to Philadelphia Electric Company is 12.01%. This is based upon the estimated actual capital structure expected as of June 30, 1986 consisting of 38.50% Common Equity, 10.80% Preferred Equity, 50.70% Long-term Debt and a fair return on equity of 14.00% (See Schedule 1, Page 1).

The primary analysis I relied upon in this testimony is the DCF results as applied to a comparative group of non-nuclear construction electric utilities. I also present a DCF analysis of the data for Philadelphia Electric. However, the current results of the DCF analysis for Philadelphia Electric include the still outstanding risks associated with the Commission's eventual resolution of the Limerick #1 investment. The Limerick #1 investment should be resolved in this proceeding, removing the associated risks of this major unknown facing the Company. Also affecting the risks faced by Philadelphia Electric is the Limerick #2 ongoing construction. By excluding the impact of the Limerick #2 effect on the allowed return on equity, my recommended return takes into consideration the

directives of this Commission in its recent Limerick #2 decision. In that decision, the Commission stated that if PECO wishes to complete Limerick #2 "... it should be willing to accept various of the risks which are inherent in continuing construction of Limerick Unit No. 2, and not seek to absolve itself of certain risks and, thereby, to place them upon the ratepayers" (p. 85). Accordingly, my 14.0% allowed return on equity recommendation excludes the increment to the cost of equity caused by the possible continued construction of Limerick #2. If I had included all of the incremental risk caused by the Limerick construction, I would have recommended a return on equity for Philadelphia Electric of 14.75% instead of the 14.00% I have found appropriate. Therefore, although the overall cost of equity to Philadelphia Electric is 14.75%, the fair allowed return on equity for regulatory purposes is 14.00%.

The financial markets have been very strong in 1985. Late in 1985 the Dow Jones Industrial Average closed above 1500 for the first time in history. The utility index was also strong, setting all time highs in December, 1985. On December 31, 1984 the Moody's 24 electric utilities had an average dividend yield of 10.43%. By November 30, 1985, this yield had declined by 1.07% to 9.36%. Since November, yields have declined further. Dividend yields and

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essentially all money cost indicators are much lower now than a few years ago. Common stocks in the electric utility industry have done particularly well. As of November 30, 1985, the market-to-book ratio of the Moody's 24 electrics was a very healthy 1.3 (estimated based upon November 30 market prices and December 31,1984 book values) which is the highest market-to-book ratio achieved on average by these companies since 1971. Such a high market-to-book ratio indicates that investors perceive future earnings for the electric industry will exceed the levels deemed adequate. In 1984, the Moody's 24 earned 14.98% on equity and both Value Line and the return on equity derivable from Institutional Brokers Estimate System (I/B/E/S) show that investors anticipate the future return on equity will be lower than the 1984 actual results. Also, in its ongoing generic analysis of the cost of equity for electric utilities, the FERC found in its most recently issued quarterly report that the cost of equity for an average electric utility is 13.68%.

I restricted my analysis to market data through November 30, 1985. As of that date the common stock price of PECO was $15.75. It is worth noting that in recent weeks the common stock price of PECO has climbed to $17.50 (as of

December 23, 1985), making the dividend yield 12.57% and the market-to-book ratio close to 1.0.

All the available information supports my findings that a 14.00% return on equity for Philadelphia Electric Company without Limerick #2 risk and 14.75% with Limerick #2 risk is a fair and reasonable result.

II.   STATEMENT OF QUALIFICATIONS

Q. Please state your name and business address.

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

Q.   What is your occupation?

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

Q.   Please summarize your utility regulatory experience.

A.   I am president of Rothschild Financial Consulting and
have been a consultant since 1972.   From 1979 through
January, 1985 I was President of Georgetown Consulting
Group, Inc. Prior to that, from 1976 to 1979 I was the
President of J. Rothschild Associates. Both of these firms
specialized in utility regulation.   From 1972 through 1976
I was employed as a consultant at Touche Ross & Co., a "big
eight" accounting firm. Much of the consulting work done
while at Touche Ross related to utility regulation. While
associated with all of the above firms, I have worked for
various state Utility Commissions, Attorneys General, and
Public Advocates on matters relating to regulatory and

financial issues. These included rate of return, financial issues, and accounting issues.

Q. Please describe what consulting work you have done on nonutility matters.

A. I consulted in the preparation of bond prospecti for five hospitals, assisted a major European chemical company in deciding whether to acquire an American owned chemical plant, served as a consultant to a major corporation that had gone into a Chapter XI bankruptcy, and advised the City of New York about procedures and attendant savings related to its payroll disbursement systems.

Q. What did you do prior to becoming a management consultant?

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

Q. Please describe some of your other relevant experience.

A. I was the chairman of a one week seminar given by the American Management Association entitled "Accounting and Finance for NonFinancial Executives." Also, I have lectured to the managements of Union Carbide Corporation,

Celanese Corporation, and Olin Corporation. My topic was current value accounting applications in the chemical industry.

Q. What is your educational background?

A. I received an MBA in Banking and Finance from Case Western University (1971) and a BS in Chemical Engineering from the University of Pittsburgh (1967).

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III. RETURN ON COMMON EQUITY

A. Summary of Conclusions on Return on Equity

Q.   What is the return on equity that you are recommending for Philadelphia Electric Company?

A.   The return on common equity this Commission should allow Philadelphia Electric is 14.00%. This conclusion was arrived at by applying the DCF method to the financial data associated with the common stock of a group of electric utilities who are not engaged in nuclear plant construction. It was necessary to examine a group of utilities not engaged in nuclear construction in order to prevent current ratepayers from assuming the risk associated with the completion of Limerick #2.

For reasons that will be explained later in this testimony, the uncertainties surrounding Philadelphia Electric make the results of the specific DCF calculation for this Company less accurate than normal. Nevertheless, I did also apply the DCF method to the data on Philadelphia Electric Company.

I also applied the DCF method to a group of selected utilities engaged in nuclear construction. The answer was further checked for accuracy in two ways: 1) by computing

the cost of equity by use of the DCF method for groups of regulated telephone, and gas utility companies, and 2) by directly observing the earned returns on equity and market-to-book ratios of the groups of public utility companies.

B. Definition of Cost of Equity

Q. What is the definition of the cost of common equity?

A. The cost of equity is the profit opportunity rate investors require in order to be willing to exchange current cash for the right to future dividends and future capital appreciation.

Q. Is there ever a difference between the cost of equity and the fair return?

A. Yes. In certain cases such as this one the Commission may wish to distinguish between the market derived cost of equity and the fair return in order to shield current ratepayers from certain defined risks. To the extent that PECO has determined to go forward with Limerick #2, the resultant higher cost of equity needs to be segregated.

If the Company wishes to reflect a higher cost of equity resulting from its Limerick #2 investment, then it

should do so in its Limerick #2 AFUDC rate rather than through a subsidy from current ratepayers.

Q. What determines the market price of a utility's stock?

A. The perceived success of management in earning profits on assets, not the cost of the assets, determines the market price for essentially any stock. If profit expectations grow to where they exceed investors' requirements, market price will exceed book value, and if profit expectations fall below investor requirements, market price will be less than book value. The market price can properly be compared to the book value to determine the adequacy of the earnings prospects that investors expect management to achieve on the company's assets. The commonly used statistic to compare these factors is the market-to-book ratio.

Imprecision exists in the determination of equity cost because a company's market price is dependent upon investors' expectations of future average earnings levels. There is no way to determine with certainty those future earnings expectations. It is often helpful to look at historic returns on equity and other factors considered by investors in order to determine what returns on equity it is likely investors believe will be achieved in the future.

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It should be recognized that current perceptions of investors equate to current market prices. Regulators can only impact market prices by causing investors to re-evaluate expectations regarding what is likely to happen in the future.

C. Cost of Equity Computation

1. Introduction

Q. How have you computed the cost of common equity?

A. The cost of equity was computed by using the DCF method. This method was applied to the data of the Moody's 24 Electric Utilities and to Philadelphia Electric Company. Moody's 24 was analyzed by dividing it into two groups of companies. One group consists of only those companies that are not engaged in nuclear construction and another group consists of those companies that are engaged in nuclear construction. Regulated telephone utilities and gas distribution utilities were also examined. A check on the answer obtained from the DCF method was conducted by comparing the indicated cost of equity directly to market data.

Q. Is it possible to compute the cost of equity with absolute precision?

A. No. Determining the cost of equity requires the quantification of investors' future expectations, an amount which can only be estimated. However, I believe the methods used in developing this testimony result in an objective and accurate estimation of investors' future expectations.

2. DCF Method

Q. Please explain the DCF Method.

A. The DCF, or Discounted Cash Flow, method is the most prevalent equity costing method used today. It is based upon the fact that there is a time value associated with money.

When an investor buys stock in a company, he or she gives up cash today in exchange for the right to future dividends plus the right to the proceeds once the stock is finally sold. Therefore, it is correct to interpret today's stock price as the present worth to the investor of the future dividends, the final dividend being the investor's sales proceeds. The rate of return that makes the future anticipated dividends and future anticipated

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selling price, once discounted, equal to the present market price is the cost of equity. Generally, in utility ratemaking proceedings the simplified version of the DCF formula is used. This formula is $k = D/P + g$ where k equals the cost of equity, D equals current dividend, P equals current market price and g equals the future anticipated rate of growth in dividends. This simplified version of the formula can only be used if it is reasonable to assume that growth in dividends will be constant and that the growth in stock price will be equal to the growth in dividends. If for any reason it is not believed that this constant growth scenario is appropriate, then the future anticipated cash flow must be individually discounted and the $D/P + g$ formulation of the DCF method would have no meaning. For reasons that will be explained later, it is usually acceptable to use the simplified version of the DCF method provided that the b x r approach is used to compute growth. If some other technique is used, it probably is not acceptable to use the simplified form of the DCF equation. The simplified version of the DCF method is applied by computing D/P(dividend yield), determining g and then adding these two results together. The only reason this simplified version is acceptable is because in the special case of anticipated constant growth,

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it produces the same answer as if the cash flow from each year were discounted separately and is mechanically easier to implement.

Q.   Why do you believe it is generally possible to use the simplified version of the DCF method in public utility rate proceedings?

A.   For most electric utilities, business conditions are relatively stable. Earnings fluctuate to a certain degree based upon local economic conditions, certain extraordinary events and the timing of rate cases. However, results generally tend to be brought back to a reasonable profit allowance based upon Commission rate increase awards. This is in contrast to a non-utility company that might have a fad product with a profit expectation for only a few years or a developing company which might be expected to have several years of poor earnings before its product is to become successful. One common mistake that must be avoided in the implementation of the DCF method for public utilities is to compute a compound annual growth rate from some historic period as a starting point and to apply that "g" to the simplified D/P + g formulation. Such an approach is incorrect because as a general rule such growth is not sustainable and is not reflected in stock price movement. It is not sustainable unless the historic base

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period contained earnings and dividend rates that are normal. For example, if a utility company only earned 10.0% on its equity in 1984, but investors believed the company was capable of earning 13.0% on equity in the future, the increase in earnings necessary to bring the 10.0% to 13.0% would show up as a very high historic growth rate. This growth rate is not sustainabale because the earned return on equity cannot realistically be expected to increase to 16%, then 19%, then 21% etc. Furthermore, if investors were already anticipating the increase in earnings to 13.0% on equity, such an increase would already be built into the current stock price and therefore the realization of a 13.0% return on equity would not be accompanied by any further stock price increment.

Q. How should one estimate the future cash flows for discounting?

A. An approach would be to independently forecast year by year the dividends it is believed a company will pay. Such a forecast could be carried out for a number of years. At the end of the period it would be necessary to estimate the anticipated selling price of the stock. Then, each of the cash flows (the individual dividend payments and the final selling price of the stock) would all be discounted back to its present value at whatever discount rate is required to

make the value of these future payments equal the current market price of the stock. Such an approach may be cumbersome, but would be required if there is reason to believe that future dividend increases will be erratic and/or it is believed that the market price of the stock will grow at a rate different from dividend growth expectations. However, for most public utility companies, it is generally acceptable to assume that earnings at the end of a current rate case will stabilize at some reasonable level, that dividends will be maintained at a constant relationship to earnings and that stock price will grow at the same rate that dividends grow. In making such an assumption, it is not necessary to believe that each of these factors will grow in the future at exactly the same rate. It is merely necessary to believe that it is not more likely that the growth for one item will be at a slower or faster rate than for the other items. Based upon both historical performance and practical knowledge of the future, it can be said with safety that these items will virtually never actually grow at the same rate. This fact is not a problem as long as there is no expectation of a bias. It must be just as likely that the future growth actually achieved will be higher than the average expected growth as it is that the growth will be lower than the

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average expected growth. Note that in its recent generic rate of return order FERC pointed out that the use of this constant growth form of the DCF model "... does not require, however, that dividends in reality grow at a constant rate from one year to the next, but only that one use a constant growth rate for purposes of implementation. This might entail, for instance, converting a variable growth rate to a mathematically equivalent average growth rate."

Q. How is the forward looking growth rate computed?

A. The future growth rate is dependent upon the future earnings a utility will achieve. The future growth rate, or "g" is properly determined by multiplying the future earned return on equity by the portion of these future earnings that are retained in the business (retention rate). This results in the ongoing, sustainable growth rate which is appropriate for use in the simplified version of the DCF method because earnings retained in the business are what is available for reinvestment in the used and useful utility assets.

Q. To what does the growth component of the DCF formula refer?

A. The formula refers to the determination of the

discounted value of future dividends. This stream of dividends includes the final liquidating dividend, or final stock sale proceeds. Since this final liquidating dividend is part of the overall DCF formula, and since both dividends and capital appreciation are derived from earnings, the DCF method when applied to the common stock of regulated public utilities becomes more accurate if the only growth rate considered is the growth in earnings per share. Dividends per share growth if examined without regard to the liquidating dividend can be misleading. For example, if management were to allocate a lower portion of earnings to dividends in the future, the lower resultant dividend growth would be offset by a higher growth in book value and hence higher stock price sale proceeds when the investor liquidates. By orienting the growth computation to earnings per share rather than to dividends this and other similar potential factors which could distort the accuracy of the DCF method are eliminated.

Exactly how retained earnings and earned return on equity combine to produce growth can be seen in the following example:

Assume a company with a book value of $20.00 per share at the beginning of a year earns 10% on equity and pays a dividend of $1.50 per share. Its earnings in that year

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will be $2.00 (the $20.00 book value multiplied by 10%).
Retained earnings will be $2.00 less $1.50 of dividends, or
$0.50. Since the $0.50 represents a permanent increase in
equity capital, the book value of the company at the end of
the year will be $20.50 per share. In this way, the common
equity holder has, in fact, invested an additional $.50 in
the business.

If the company is anticipated to continue to earn 10%,
then earnings in the next year will be anticipated to be
$2.05 ($20.50 multiplied by 10%). In this example the
growth in earnings is $2.05/$2.00 - 1.025 or 2.5% growth.
Mathematically, it is possible to express the growth caused
by retained earnings as b times r where b equals the
retention rate and r equals the future anticipated return
on equity. Note that the cause of growth in earnings per
share for a utility may properly be compared to the cause
of growth of earnings in a savings account. If an investor
has $100 in a savings account paying 6% interest, in the
first year earnings will be $6. At the end of one year the
account will contain $106. If the investor decides to
leave the $6 in the account (or retain all earnings), then
earnings in the next year will grow from $6 to $6.36 (106 x
6%). Conversely, if the investor decides to withdraw the
$6 of first-year earnings, earnings in the second year will
not grow to $6.36, but will remain at $6. Exactly the same

principle holds for a common stock investment. If earnings are retained, they will be reinvested in the business and become available for future earnings growth, but if they are paid out as dividends, they will not be available for reinvestment.

Q. Is there anything other than earnings and dividends which can influence the book value growth of a company?

A. Yes. If a company sells new common stock equity, the amount received per share is essentially equal to market price, not book value. But, rate base approximates book value. Therefore, it is book value and not market price upon which the allowed return is applied. When a company sells new common stock, the proceeds from the sale of new stock are added to the total common stock equity at the same time the number of shares outstanding is increased. Book value per share is equal to total common equity divided by total shares outstanding. Therefore, if a new common equity sale is accomplished at a price above the book value, the book value per share will increase and if that sale is made below book value, the book value per share will decrease.

Q. How does this change in book value per share impact

earnings?

A. As stated earlier, the return allowed by commissions in a rate proceeding is essentially a return on book value. When the book value changes, earnings per share and dividends per share change. Earnings per share is equal to the book value per share times earned return on equity. Therefore, anything that causes the book value per share of a utility company to decrease will tend to cause the earnings per share to decrease and anything that causes the book value per share to increase will tend to cause the earnings per share to increase.

Q. Please summarize what has to be determined in order to be able to correctly apply the DCF method to arrive at an indicated cost of equity?

A. To properly apply the DCF Method, four determinations need to be made:

1. Dividend Yield

2. The return on equity rate which investors anticipate a Company will earn in the future

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

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

If one is going to use the D/P +g simplified version of the DCF method, it is essential that the above determinations be internally consistent. For example, assume:

Market Price   = $ 9.00/share
Book Value   =   10.00/share
Dividend   =   1.00/share

Then Dividend Yield   = $ 1.00/9.00 = 11.1%

If an analyst felt that investors anticipated this hypothetical company to be able to earn 13.0% on its equity in the future, the important fact to note is that the only consistent payout ratio that can be correctly used with the above assumptions is determined as follows:

Anticipated Return on Equity of 13.0% x
Book Value of $10.00 = $1.30 earnings per share

$$\frac{\text{Dividend Rate of } 1.00}{\text{Earnings per Share of } 1.30} = 0.769 \text{ Payout Ratio}$$

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

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the business to provide a growth in earnings for the future cash flow benefit of investors.

3. Implementation of DCF Method

Q.   To what company or companies did you apply the DCF method in this case?

A.   In order to determine the cost of equity component of the overall rate of return to be applied to the Company's rate base, I have performed a DCF analysis on the data from two subsets of the Moody's 24 electric utilities (one made up of companies engaged in nuclear construction and the other made up of companies that are not engaged in nuclear construction), and to Philadelphia Electric Company. As a check, I also applied the DCF method to a group of regulated telephone utilities, and Moody's group of regulated gas distribution companies.

Q. Why have you separated the Moody's 24 into companies with and companies without nuclear construction?

A.   Over the last several years, events associated with nuclear construction have caused investors to perceive a higher risk associated with investments in nuclear construction electric utilities. This fact has had a material negative impact on the stock price of electric

utilities engaged in nuclear construction.

Q.   Have you conducted any studies to show that the existence of nuclear construction activity does influence the cost of equity?

A. Yes. These studies are shown on Schedule 5, pages 8 and 9. Schedule 5, page 8, shows how the market-to-book ratios of the nuclear construction electric utilities have compared to the non-nuclear construction electric utilities by year since 1980. Note that the market-to-book ratios of the nuclear construction electrics have been consistently lower than the market-to-book ratios of the non-nuclear construction electric utilities. This difference began increasing in 1983 and recently has been between 0.20 and 0.26.   It has been in this latter period that key events such as the probable disallowance of major portions of the costs in late 1983 of the Marble Hill Nuclear Plant owned by Public Service of Indiana, and the disallowance of over $1 billion of costs from each of the Shoreham nuclear plant owned by LILCO and the Wolf Creek Nuclear plant owned by Kansas Gas & Electric have occurred.   Several substantial dividend cuts by electric companies engaged in nuclear construction have also added to investor concern over the issue.

Schedule 5, Page 9, shows that the severity of the problem of being engaged in nuclear construction does appear to be related to the level of a company's involvement in the problem. My group of nuclear construction electric utilities was sub-divided into two groups, one group consisting of the nuclear construction companies that have a market-to-book ratio above the median and the other group consisting of companies with the market-to-book ratio below the median. For each group, the average "New Nuclear Construction Expected Total Investment as a Percent of Equity" was computed. As would be expected if nuclear construction activity does influence the measured cost of equity for an electric utility, the group with the lower market-to-book ratios had a significantly higher level of new nuclear construction as a percent of equity than did the group with the higher market-to-book ratios.

Schedule 2 summarizes the results of the various DCF analyses I conducted. As shown on that schedule, the results of the various DCF analyses were as follows:

	Dec.31,1984	Nov.30,1985
1. DCF based upon Moody's 24 excluding Nuclear Construction	13.65%	12.96%
2. DCF based upon Moody's Gas Distribution Companies	14.68%	14.58%
3. DCF based upon Telephone Companies	13.76%	12.89%
4. DCF based upon Philadelphia Electric Company	14.58%	14.00%
5. DCF based upon electric utilities engaged in nuclear construction	15.09%	14.12%

Q.   Why have you relied upon a DCF method that computes a cost of equity for other companies in addition to Philadelphia Electric?

A.   The cost of equity experienced by a company is a function of the unique business and financial factors experienced by that company.   Therefore, ideally, it would generally be best to compute the cost of equity by examining data from only the subject Company.   However, the answer obtained for the cost of equity is highly dependent upon the accuracy of the estimate of investors' future expectations.   Furthermore, in the case of Philadelphia Electric, the cost of equity is influenced by its nuclear construction activities.   By examining other companies separately, it is possible to estimate the impact nuclear

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construction has on the cost of equity. Furthermore, since investors buy a stock for the right to share future dividends and capital appreciation, it is necessary to estimate the future in order to compute the cost of equity. Estimating the future is an inexact science that is made all the more difficult given Philadelphia Electric's current situation. Investors are aware that a major rate base reduction from the original cost of Limerick No. 1 is possible and that, based upon the most recent decision of this Commission, cost overruns experienced at Limerick #2 could be borne by investors. Investors are also aware that several companies engaged in nuclear construction have cut their dividends. Therefore, determining the actual "average" dividend yield expected by investors for Philadelphia Electric is imprecise at best. By examining numerous different companies, the likelihood exists that the high estimates for some companies will be offset by low estimates for other companies, resulting in an answer which is more accurate than is possible when analyzing the data from but one company. Because of the averaging process, the cost of equity answer for a group of utilities will almost always be more accurate for the group than for any individual company. This higher accuracy is valuable but must be tempered by the fact that no company is a perfect proxy for the subject company. Therefore, ideally the

indicated cost of equity for both the subject company and representative groups of companies should be examined. In this case, the use of a group of comparable companies is essential so that the effects of the nuclear construction risk may be determined.

Q. How did you decide what groups to examine?

A. Philadelphia Electric is a company that provides a basic commodity and has a territorial monopoly on that product. These factors mean that representative regulated public utility companies are the appropriate comparison companies. They are the companies that best match the business risks faced by Philadelphia Electric. Naturally, regulated electric utilities provide a better match than do regulated telephone, or gas distribution companies. However, since the essential characteristics of territorial monopoly and the provision of a basic commodity are also present for telephone and gas utilities, the DCF computations based on these other kinds of utilities is also worth examining.

Q. How did you select the electric companies to compare to Philadelphia Electric?

A. My goal was to select a group of electric utilities that would be appropriately representative of the electric

utility industry. I therefore started with the Moody's 24 electric utilities. These are mostly large electric utilities for which it is easy to obtain much financial data and can generally be relied upon to have a representative stock price on every trading day of the year. From these Moody's 24 it was necessary to separately study those companies which are engaged in nuclear construction. The risks associated with nuclear construction have become substantial in recent years and can dominate the cost of equity computations for those companies.

Q. Are the non-nuclear Moody's 24 that you have examined perfectly comparable to Philadelphia Electric?

A. No. All have certain unique characteristics that make them in one way or another different. However, the important factors that influence the cost of equity are comparable; they are regulated public utilities that obtain the majority of their income by selling electricity under the protection of a territorial monopoly.

Q. How should the dividend yield used with the DCF method be obtained?

A. Ideally, the dividend yield that is typical of the near

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term future should be used in implementing the DCF analysis for regulatory purposes. Some experts feel that a spot dividend yield is the best possible estimate because that yield reflects the most current aggregate estimate of investors. Others feel that a current dividend yield might contain market irregularities which might temporarily distort the dividend yield result. I have presented the DCF analyses based upon both current spot dividend yield data and historic 1984 data. My recommended result is based upon both observing historical trends and examining the current spot actual dividend yields. In this way some weight is given to the fact that dividend yields have been declining, but yet an allowance is provided for the possibility that the recent decline might not last. In the current financial environment, I believe this results in a conservatively high estimate for the cost of equity.

Q. The DCF theory requires the use of next year's dividend rate rather than the current dividend rate. How have you allowed for this requirement?

A. In my DCF computations, I increased the dividend yield by an amount equal to one-half of a year's growth in dividends. In this way, the DCF computations presented herein are based upon the average dividend rate expected

for the next year.

Q.   How have you computed the growth rate for use in the
DCF model?

A.   As mentioned previously, the critical number to the
DCF analysis is the future return on equity level
anticipated by investors. For purposes of applying the DCF
method to the financial data of my comparable companies,
three possible earned return on equity expectations were
used:

1. Historic actual earned return on equity for 1984

2. The earned return on equity forecast by Value Line
    for 1987-89.

3. The earned return on equity consensus of investment
    analysts as compiled by the Institutional
    Brokers Estimate System (I/B/E/S).

These sources have the advantage of providing three
separate viewpoints, and at least in the current
environment are all reasonable estimates of future investor
expectations.

Q. Is the historic actual earned return on equity always a good proxy for investors' future expectations?

A. No, not necessarily. However, I believe it is usually an important starting point to at least one of the inputs to the DCF computations. This is because historic earned returns on equity are reviewed by investors and are used as a gauge to determine what likely level of future earned returns on equity might be. Furthermore, the earned returns achieved, on average, by groups of regulated electric utility companies are relatively stable from one year to the next.

In the current environment, the historic actual earned returns on equity are probably somewhat higher than investors expect will be maintained. Long-term interest rates have been on a downtrend and utility common stock prices have been rallying for many months now. These factors can logically be expected to result in public utility commissions responding by lowering the allowed returns on equity. Furthermore, earnings from public utilities did relatively well because of favorable economic conditions in 1984. As the rates for more and more utility companies are based upon post-recession test years, abnormally high earnings will become less common.

Q.   Why did you use Value Line as a source to provide the future earned return on equity?

A.   Value Line provides an analysis of many different companies.   To my knowledge, it is the only source that provides longer-term estimates of earned return on equity for a broad range of companies.   Futhermore, I have found the projected earned returns on equity to be reasonably close to my own estimates in the past.   It provides a helpful balance to the historical earned return study and the shorter-term return on equity estimates presented in I/B/E/S.   It should be cautioned, however that it would not be appropriate to use the growth rates in earnings per share or dividends per share as published in Value Line in the simplified D/P + g formulation of the DCF method.   This is because such growth rates as computed by Value Line are not constant growth rates.   The reason why this is true will be explained below.

Q.   Why have you chosen I/B/E/S as one of your sources for the return on equity expectations of investors?

A.   I/B/E/S is a service that compiles the results of numerous earnings forecasts made by major investment bankers and other professional analysts.   It therefore provides the consensus view of what professional investors expect short-term future earnings prospects are for many

different companies.

Q.   Both Value Line and I/B/E/S show growth rates as well
as future earnings projections.   Did you use the growth
rates as shown by these organizations?

A. No. In the case of Value Line, it would be improper to
use the growth rates they indicate because they are not the
kind of growth to which the DCF formula is referring.
Value Line describes its growth rate as the annual rates of
change from 1981-83 to 1987-89.   This means that to the
extent the 1981-83 base period had abnormally low or
abnormally high earnings, the growth rate computed based
upon it would not be reflective of the future sustainable
growth rates.   Growth from the 1981-83 period up to current
expectations has already occurred and would have to be
excluded from the Value Line published "g" so as to avoid
duplication.   Therefore, the growth rate as published in
Value Line would be inappropriate for use in the simplified
D/P + g version of the DCF formula. In the case of I/B/E/S,
the actual period for growth is not stated.   Since it is a
composite result, there must be a lack of consistency on
how that growth rate is computed. Without an understanding
of from when to when that growth rate has been computed, it
is impossible to know to what use the growth rate might be

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1 put in the DCF formula.

2

3 Q.   Did you use the same cost of equity approach for

4 Philadelphia Electric as for your groups of regulated

5 utilities?

6 A.   The approach is very similar, but is not identical.

7 For example, a one-year historic earned return on equity

8 for a single company has much less meaning than for a group

9 of companies.   The historic results for a group of

10 companies has the advantage of being able to blend earnings

11 of companies that had an atypically poor year with those

12 companies that had an atypically good year.   In addition,

13 special consideration has to be given to investors'

14 perceptions with regard to potential disallowance from rate

15 base resulting to the Company's Limerick investment.

16

17 Q.   You said that growth rate is properly computed by

18 multiplying the future anticipated earned return on equity

19 by the future anticipated retention rate.   You have also

20 explained how you obtained the future anticipated earned

21 return on equity. How did you arrive at the retention rate

22 used to compute growth?

23 A.   By definition, the retention rate is the portion of a

24 company's total earnings that are not paid out as

25 dividends.   In order to determine the retention rate, I

37

started with the dividend rate used to compute dividend yield in the D/P portion of the DCF formula. Then, I computed the earnings which would result based upon my estimate of the future return on equity anticipated by investors. Since retention rate is, by definition, earnings minus dividends all divided by earnings, the retention rate as anticipated by investors is merely a direct mathematical derivation of the dividend rate and the anticipated earnings rate.

Q. Is retention rate growth the only source of growth experienced by a utility company?

A. No. In addition to retention rate growth, future growth in earnings and dividends can be influenced by sales of new common stock at a level other than book value. This is because the new book value is equal to the weighted average of the old book value and the selling price of the new stock offering. If the new stock offering or offerings take place at above book value, then these sales result in an increment to growth and if the sales take place at below book value, then these sales result in a reduction of future growth.

Q. Please explain your final recommended return on equity for Philadelphia Electric.

A. For reasons explained earlier in this testimony, the return on equity for Philadelphia Electric should be based primarily upon data from the Moody's 24 non-nuclear construction electric utilities. As shown on Schedule 5, Page 1, at December 31, 1984, the dividend yield achieved by the non-nuclear construction segment of the Moody's 24 electric utilities was 8.71%. The increase in the dividend yield to allow for growth to next year was between 0.19% and .23%. The indicated growth rate for these electric utilities was between 4.33% and 5.22%, which includes an allowance for growth due to sales of new stock above book value of 0.38%.

Three different approaches were used to obtain a range of 13.23% to 14.15% as the indicated cost of equity on December 31, 1984, without financing costs. One method was to base the future growth as anticipated by investors to be derived from a continuance of the return on equity level actually achieved in 1984; another method was to base the future growth to be derived from the future level of earned return on equity to be equal to the return on equity derivable from the I/B/E/S consensus forecast; and the third method was to base the future growth anticipated by investors on the earned return on equity as forecast by Value Line.

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The results from these three methods were averaged to arrive at an overall growth rate of 4.94%, which, based upon the average dividend yield at December 31, 1984, produced an indicated cost of equity for the non-nuclear electric utility companies of 13.65% before allowance for financing costs.

The next step in my analysis was to consider the impact of the change in dividend yields since December, 1984. Dividend yields of electric utilities have been declining almost without pause since mid-1982. Therefore, it is probably most appropriate to give complete effect to the most current dividend yield, rather than averaging the dividend yield with the 12/31/84 result. However, to be conservative, I have averaged the December, 1984 dividend yield with the November, 1985 dividend yield in forming my final recommendation. As shown on Schedule 1, Page 2, the 13.65% DCF result from December, 1984 was updated by modifying the result by one-half of the change in dividend yield actually achieved by the non-nuclear construction electric utility companies between December 31, 1984 and November 30, 1985. Between December 31, 1984 and November 30, 1985 dividend yields for the non-nuclear companies declined from 8.71% to 8.03%. Therefore, one-half of the change in dividend yield is -0.34%. Also, as explained

40

later, a .40% allowance for financing costs was included in the final recommendation. The overall result thus obtained is a return on equity of 13.71% (13.65% plus 0.40% minus 0.34%). In order to provide an additional measure of conservatism to the computations, I have concluded that an appropriate rate of return on equity conclusion is 14.00%.

Q.   How have you applied the DCF method to Philadelphia Electric?

A.   I observed that Philadelphia Electric earned 15.08% on equity in 1984 and earned 13.90% on average for the three years ended 12/31/84.   I also considered that 1984 was an abnormally good year for electric utilities because of the economic turnaround.   For example, the Kwh sales of Philadelphia Electric were up 6.6% over 1983 (See Value Line, p. 203, September 27, 1985).   Furthermore, interest rates and dividend yields are down from 1984 meaning that future allowed returns on equity are likely to decline. These factors combine to lead me to believe that investors would expect the future earned return on equity of Philadelphia Electric to be materially less than the recent historic 15.08% even without any disallowances from Limerick #1 or Limerick #2.   In view of these observations, the 14.0% earned return on equity expectation shown in the September 27th edition of Value Line and 14.5% derived from

41

the I/B/E/S forecast are probably higher than the consensus of investors could reasonably expect for the long-term future of Philadelphia Electric. Furthermore, it must be considered that investors are well aware that a partial disallowance of the Limerick #1 investment is quite possible. For each $100 million disallowed, the earned return on equity will drop by about 0.22% (See Schedule 4, Page 3). This means, for example, that if $500 million were disallowed from rate base, the earned return on equity would fall by about 1.1%, and if $1 billion were disallowed from rate base, the earned return on equity would fall by about 2.2%.

If it is assumed that investors expect the eventual disallowance from rate base of Limerick #1 will be between $500 million and $1 billion, round down the 1.10% to 2.20% to 1% to 2% and use these figures as reductions to the midpoint of the range between Value Line and I/B/E/S, then the future anticipated earned return on equity will be between 13.25% and 12.25%. These are the return on equity expectations I used in calculating my DCF growth rate.

Q. What growth rates did you obtain?

A. As shown on Schedule 4, Page 1, my total estimate of investors' anticipated growth for Philadelphia Electric

1   based upon an expected return on equity of 13.25% was 0.32%

2   as of December 31, 1984 and had grown to 0.57% as of

3   November 30, 1985. Based upon the 12.25% low end of my

4   range for future investor anticipated earned return on

5   equity, the total growth rate obtained was a negative 0.75%

6   based upon December 31, 1984 conditions and was a negative

7   0.50% based upon November 30, 1985 conditions. In all of

8   these cases, growth includes a negative allowance for

9   future equity sales below book value.

10

11 Q.   How did you obtain your final recommendation of the

12 cost of equity for Philadelphia Electric?

13 A.   I averaged the midpoint of the high and low results

14 obtained from the data from December 31, 1984 of 14.58%

15 with the midpoint of the high and low results obtained from

16 the data from November 30, 1985 of 14.04% to obtain a cost

17 of equity for Philadelphia Electric of 14.31% before

18 allowing for financing costs. To this 14.31%, I added a

19 0.40% allowance for financing costs to obtain 14.71%. The

20 14.71% was rounded up to 14.75%

21

22 Q.   Is there any overview analysis you conducted to check

23 the validity of your recommendation?

24 A.   Yes. As shown on Schedule 3, I observed that as of

25 the end of December, 1984, the non-nuclear electric

43

utilities had achieved a market-to-book ratio of 1.14 and earned about 14.8% on equity. Since 1.14 is above the appropriate goal for a regulated public utility, this suggests that 14.8% might be above the required return on equity as of the end of 1984. I am also aware that since 1984 the market-to-book ratios have increased even further showing that future anticipated earned returns on equity are higher than levels deemed adequate by investors. Similarly, I observed that the telephone regional holding companies achieved a market-to-book ratio of 1.04 as of the end of 1984. 1.04 is a desired regulatory result, and was achieved at a time when the companies earned 13.8% on equity. Since 1984, the market-to-book ratios of the regional holding companies have also increased. I believe these observations confirm the reasonableness of my recommended cost of equity. Furthermore, I would point out that FERC in its quarterly report for the third quarter of 1985 on the cost of equity for electric utilities concluded that the cost was 13.68%.

D. Financing Costs and Market Pressure

Q. You stated earlier that you included in the cost of equity an allowance for financing costs. Please explain

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what these costs are.

A.   When a utility company issues common stock, there are certain expenditures incurred. While other methods are possible, the usual way that ratepayers are charged for financing costs, in juridictions which recognize such costs, is to add an increment to the cost of equity.

Q. If the PUC chooses to include an allowance for financing costs, have you determined what the appropriate allowance for financing costs should be?

A.   The actual financing costs incurred by a company are a function of the size of its common stock issues. The larger the issue, the more dollars over which the costs can be spread. It should be recognized that not all common equity that the company obtains has a financing cost associated with it. The common equity amounts raised as a result of retained earnings do not incur any financing cost. Therefore, in order to obtain an overall actual cost of externally raised capital, it is necessary to weight the zero cost of obtaining retained earnings equity with the cost incurred to raise external common equity.

Q.   How much of the total equity is raised externally for the typical electric company?

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A. Based upon the data on page a23 of the 1985 Moody's manual, for the most recent year shown, about 70% of the total common equity was raised externally. This means that on average no cost was incurred on about 30% of the common equity raised. Based upon the data on Schedule 8, it can be seen that an external financing cost of 4% or less is appropriate. A 4% cost of acquiring 70% of the equity blended with a 0% cost of acquiring 30% of the equity produces an overall appropriate allowance for financing costs of about 2.8%. This increment should be used to determine the target market-to-book ratio. Thus, a 2.8% allowance would mean that the Commission should set rates which would result in a market-to-book ratio of 102.8%.

Q. In addition to the financing costs paid to underwriters, are there any costs associated with "market pressure" at the time of issue?

A. Probably not. Dr. Sholes of the Massachusetts Institute of Technology conducted a thorough study which concluded that there was no depressant effect on the stock price of a public utility merely because it issued new common stock. However, I conducted my own study which did conclude that some slight market pressure, amounting to approximately 0.6%, might be present. Therefore, to be conservative, I recommend that a market pressure allowance of 0.4% (0.6%

from my study x 70% for external financing) be added to the 2.8% allowance for financing costs, making the total allowance for financing costs be equal to 3.2% increment to the appropriate market-to-book ratio, making the final market-to-book ratio target 1.032.

In order to increase the market-to-book by 3.2%, sufficient incremental earnings need to be provided to increase only the dividend yield portion of the DCF equation. Growth need not change. Based upon the December 31, 1984 dividend yield for the Moody's non-nuclear electrics of 8.71%, the allowance for financing costs should be 8.71% x 3.2%, or 0.28%. To be conservative, I rounded this up to 0.40%, or 40 basis points.

IV. CAPITAL STRUCTURE AND EMBEDDED COSTS

Q. What capital structure do you recommend as appropriate for establishing the overall cost of capital for Philadelphia Electric Company?

A. I have adopted the capital structure as requested by Philadelphia Electric for purposes of computing the overall cost of capital. I am aware that some updates are contemplated to reflect a slightly changed financing plan.

Q. How have you computed the embedded cost of debt?

A. I started with the amount proposed by the Company, but modified it slightly to reflect the new debt issues actually made and the effects of premature redemption of several high-coupon bonds issued by Philadelphia Electric a few years ago. This number should be further updated based upon actual experience with the bond redemption and any other reasonable debt transactions by the Company during this case.

Q. How did you arrive at the embedded cost of preferred stock?

A. I adopted the figure as proposed by the Company.

V. TESTIMONY EVALUATION

Q. Have you reviewed the testimony of Mr. Brennan as filed in this rate proceeding?

A. Yes.

Q. Please summarize his testimony.

A.   Mr.   Brennan   has recommended that   Philadelphia Electric's cost of common equity is between 16.9% and 17.4%.   He arrived at this conclusion by applying the DCF method and the risk-premium method, giving equal weight to both.

Q. Do you agree with his testimony?

A.   No.   His DCF method contains serious algebraic errors. Furthermore, many problems that have been defined by FERC to cause an upward bias to cost of equity conclusions are present in the analysis performed by Mr. Brennan.

Q.   Is Mr. Brennan's recommendation reflective of market conditions?

A.   It cannot be.   As he has stated, the goal of a DCF derived result is to obtain a market-to-book ratio approximating 1.0. Note that even the 14 of the Moody's 24 electric utilities that are the troubled nuclear

construction companies had a market-to-book ratio of 1.04 as of November 30, 1985 and are expected by Value Line and I/B/E/S to earn 13.79% and 14.17% respectively in the future. Assuming that the Value Line and I/B/E/S are reflective of investor expectations, a return on equity anywhere near the 16.9% to 17.4% recommended by Mr. Brennan would result in a market-to-book ratio greatly in excess of 1.04 and therefore 16.9% to 17.4% is well above the market indicated cost of equity. The observations merely confirm the accuracy of FERC's statement that a DCF method that uses many of Mr. Brennan's assumptions causes an upward bias to the computed cost of equity.

Q. Please elaborate on how Mr. Brennan's DCF method creates an upward bias to the computed cost of equity.

A. Mr. Brennan applied the DCF method two ways and both of these ways contain upward biases. One way was to rely upon the historic five year dividend per share growth, the other way was to rely upon the average of the Merrill Lynch projected growth and the Value Line Projected Growth.

In its Order No. 420, the Generic Determination of Rate of Return on Common Equity for Public Utilities, FERC said:

> Given the increasing earned rates of
> return on common equity during the
> last five years, the Commission
> believes that the five year historical
> dividend growth rates are upwardly
> biased as a reflection of investors'
> long-term growth expectations. (p. 77)

Q. Has Philadelphia Electric experienced the increasing earned return on equity which results in the upward bias?

A. Yes. As shown on Schedule 4, Page 2, the earned returns on equity in each of the last five years for Philadelphia Electric were:

1980	10.59%
1981	12.22
1982	13.27
1983	13.36
1984	15.08

Q. Why does an increasing earned return on equity create an upward bias to the historic growth rate?

A. The growth rate that is appropriate for use in the DCF method is one that is reflective of investors' future expectations. An historic period that contains an increasing return on equity profile has a growth rate in earnings per share (and probably dividends per share) which is only sustainable into the future if the earned return on

equity continues to increase in the future at the same rate as in the past. In the case of Philadelphia Electric, this would mean in order for the five year historic growth rate to be sustained into the future, the earned return on equity in five years would have to grow from 15.08% to 21.47% in the next five years. Since few if any rational investors could be expecting at this time that Philadelphia Electric will earn 21.47% on equity in five years, the use of the five year historic dividend growth rates produces an unfair, upwardly biased cost of equity.

Q. Are there problems with relying on the Value Line and Merrill Lynch growth rates for application in the DCF method?

A. Yes. First, as FERC points out, those analysts' forecasts are only for time periods up to five years and therefore " ..... may not capture investors' long run expectations " (p. 79). FERC also points out that the use of analysts' growth forecasts " ..... overstated investors' long-term growth expectations during the base year " (p. 83). As a result, FERC decided not to use analysts' growth forecasts in preparing its cost of equity determination.

Q. Are there any other problems with using the analysts' growth rates in the DCF formula?

A. Yes. A short term growth rate forecast actually has the same mathematical problems as does the five-year historical growth rate. This is because a short term growth rate is computed by making a compound annual rate of growth from a base period to a future period. For example, in the case of the Value Line 2% growth, Value Line refers to the growth as the annual rate of increase from 1982-84 to 1988-90. For example, for Philadelphia Electric Value Line shows historic earned returns of 12.3%, 12.5%, and 14.1% respectively, for an average of 12.97%. If the 1982-84 base period had a lower earned return on equity then anticipated for the future (as was the case for Philadelphia Electric), then the growth rate as forecast by the investment advisors would not be typical of the future. It would therefore produce a growth rate that would overstate the appropriate "g" in the DCF formula.

Q. Please comment on the risk premium analysis as presented by Mr. Brennan.

A. It is relatively common for experts to present a cost of equity computation based upon the relationship between the cost of debt and cost of equity. Indeed, prior to 1980

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I used to present such a method. Unfortunately, in the capital markets of the 1980's this method is invalid. Bonds and stocks have many different characteristics. Unless the factors that make up these differences remain relatively constant, the results obtained for a cost of equity from any debt based costing technique will be unreliable.

Q.   Do you have any evidence to show that there is an instability in the relationship between the cost of debt and the cost of equity?

A.   Yes.   Please refer to my Schedule 9. On that schedule, the average return on equity allowed to electric utilities and the average cost of Aa utility debt is shown. In Column 5 the difference between the allowed return on equity and the cost of Aa debt is shown (Risk Premium Allowed).   Note that the risk premium allowed hovered around 4% until 1980.   Then, it declined rapidly, touching a low of .33% in 1981.   Since 1981 it has been up and down in an unpredictable pattern.   The appropriate risk premium for 1985 can only be computed by first determining the cost of equity, not vice-versa.   Therefore, the method has no application in the current financial environment.

Q.   What has caused this instability in the cost relationship between debt and equity?

A. The basic reasons are changes in the federal income tax laws and greater uncertainty about future inflation rates.

Q.   How do changes in the income tax laws affect the cost relationship between debt and equity?

A.   The only return an investor is concerned about is the total after tax return. Debt and equity are taxed in different ways. The interest payments made on debt are fully taxable at regular income tax rates. During the 1970's, these interest payments were subject to federal income taxation at rates up to 70 %. Common dividends are sometimes taxed at full federal income tax rates, and are sometimes taxed at greatly reduced rates. A corporation that receives dividends may exclude 85% of those dividends from the tax it pays. No such exclusion exists in the case of debt interest earned. Furthermore, the dividends are only a portion of the total return received by equity investors. The other portion comes from capital gains. These capital gains receive a favorable tax treatment in two ways: first, no tax is due at all until the stock is sold and then (assuming the holding period has been sufficiently long) the gain is taxed at the lower capital gains rate. In the early 1980's the capital gains maximum

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rate was lowered to 20%. During the 1970's, it had been much higher. Since taxing policies affect the total return received by bondholders and equity holders in different ways, every time the tax law changes, the appropriate risk premium also changes.

Q. How does an unstable outlook for inflation influence the cost relationship between debt and equity?

A. The interest rate paid on debt is generally fixed over the life of the bond. If future interest rates decline or rise, the bondholders still receive the original coupon rate. A bondholder that purchases a low coupon bond loses if interest rates rise. This is true because the investor could have earned a higher interest rate if he had waited and because he would suffer a capital loss in the event the bond is sold. Interest rates tend to move in the same direction as future anticipated inflation rates. Therefore, the more uncertain future inflation rates, the more uncertain future bond prices.

Common equity prices are not as vulnerable to future changes in the inflation rate. This is because the return earned by common equity holders is not a fixed rate over a long period of time. It is readjusted by regulators or by competitive pressures as needed. Therefore, as the level

of uncertainty with regard to future changes in inflation or interest rates vary, the required risk premium between debt and equity also varies.

Q. Did FERC comment on the use of the risk premium method in Order #420?

A. Yes. First, FERC noted that it was only utility companies or their representatives who were willing to propose the risk premium method (p. 86). Then, it concluded:

> The obvious problem with any risk premium approach is that it is so difficult to determine what the risk premium actually is. Not only is it unknown, but it is likely to vary over time as well. (p. 89)

> The Commission also agrees with WCG that the accuracy of the risk premium analysis using a DCF is entirely dependent upon the accuracy of the required rate of return estimates. Since commenters generally used the same kind of DCF approach as in their primary analyses, and the Commission has already found the results of such analyses to be upwardly biased, it follows that the same finding must be made regarding the results of these alternative risk premium approaches. (p. 92)

Q. Do you agree with FERC's criticisms?

A. Yes.

Q. Do you believe that FERC's criticisms are applicable to Mr. Brennan's risk premium analysis?

A. Yes. Mr. Brennan's risk premium analysis relies upon his DCF analysis to arrive at prior required risk premiums.

Q. What risk premium did FERC find to be reasonable in its Order No. 420?

A. On Page 27 of the decision, FERC concluded that a risk premium of 2% for the cost of equity in excess of public utility bonds is reasonable. Philadelphia Electric just issued a long-term first mortgage bond at 11.75%. This means at a 2% risk premium, the cost of equity would be 13.75%. This observation and all of the other facts outlined in this testimony show that the 16.9% to 17.4% equity recommendation made by Mr. Brennan is unreasonable.

Q. Does this conclude your testimony?

A. Yes.

Appendix

Case by case listing of experience:

ALABAMA

Continental Telephone of the South; Docket No. 17968
(Rate of Return), Filed 1981

ARIZONA

Sun City West Utilities, Accounting, January, 1985

CONNECTICUT

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

Connecticut American Water Company; PUCA; Docket 800614
(Rate of Return), Filed 1980

Connecticut Natural Gas; Public Utilities Control
Authority; 780812; 3-79; Accounting and Rate of Return,
Filed 1979

DELAWARE

Diamond State Telephone Co., Docket No. 82-32, Rate of
Return, Filed November, 1982

Diamond State Telephone Co., Docket No. 83-12, Rate of
Return, Filed October, 1983

FLORIDA

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

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

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

Florida Power & Light Company, Docket No. 820097-EU, Rate of Return and CWIP, Filed July, 1982

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

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

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

Alltel of Florida, Accounting, Filed September, 1985.

KENTUCKY

West Kentucky Gas Company, Case No. 8227, 8-81 (Rate of Return)

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

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

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

MAINE

Bangor Hydro-Electric Company, (Rate of Return); 81-136; Filed 1982

MARYLAND

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

MASSACHUSETTS

Boston Edison Company, DPU 906. (Rate of Return); Filed 1981

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

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

MINNESOTA

Minnesota Power & Light Co.; Office of Consumer Services;
EO15/GR-80-76, (Rate of Return), Filed 1980

NEW JERSEY

Atlantic City Sewerage; NJ Bd. of PUC; 774-315; 5-77;
(Rate of Return), Filed 1977

Elizabethtown Water Company; NJ Bd. of PUC; 781-6; 4-78
(Accounting)

Elizabethtown Water Company; NJ Bd. of PUC; 802-76; (Rate
of Return)

Hackensack Water Company; NJ Bd. of PUC; 776-455; 10-77;
2-79; (Accounting)

Hackensack Water Company; NJ Bd. of PUC; 787-847
(Accounting and Interim Rate Relief)

Hackensack Water Company; NJ Bd. of PUC; 804-275 (Rate of
Return)

Hackensack Water Company; NJ Bd. of PUC; 8011-870; I-81
(CWIP)

Middlesex Water Company; NJ Bd. of PUC; 793-254; (Tariff
Design)

Middlesex Water Company; NJ Bd. of PUC; 793-269 (Rate of
Return)

Mount Holly Water Company; NJ Bd. of PUC; 805-314 (Rate
of Return)

National Association of Water Companies; (Tariff Design)

New Jersey Bell Telephone; NJ Bd. of PUC; 7711-1047; 9-78; (Tariff Design)

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

New Jersey Natural Gas; NJ Bd. of PUC; 7812-1681; 4-79; (Rate of Return)

Rockland Electric Company; NJ Bd. of PUC; 795-413; 1079; (Rate of Return)

South Jersey Gas Company; NJ Bd. of PUC; 769-988; 2-77; (Accounting)

West Keansburg Water Company; NJ Bd. of PUC; Docket No. 838- 737, December, 1983, (Rate of Return)

United Artists Cablevision; NJ Bd. of PUC; Docket No.CTV-9924- 83, April, 1984 (Rate of Return)

NEW YORK

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

Consolidated Edison Company; NY PSC; 27353; 10-78; (Accounting and Rate of Return) (twice)

Consolidated Edison Company; NY PSC; case 27744 (Accounting and Rate of Return)

Long Island Lighting Company; NY PSC; case 27136; 6-77 (Accounting and Rate of Return)

Long Island Lighting Company; NY PSC; case 27774 (Rate of Return), Filed 1980

New York Telephone; NY PSC; case 27469; 4-79

New York Telephone; NY PSC; case 27710 (Accounting); Filed 1981

Long Island Lighting Company, NY PSC, Case No. 28176 and 28177, (Rate of Return and Revenue Forecasting), Filed June, 1982

Long Island Lighting Company, NY PSC, Case No. 28553
(Rate of Return and Finance), Filed March, 1984

OHIO

Columbia Gas Company of Ohio; Ohio PUC; 78-1008-GA-CMR;
4-79; (Accounting and Rate of Return) (4 cases), Filed 1978-79

Ohio Utilities Company; Ohio PUC; 78-1421-WS-AIR; 9-79;
(Rate of Return)

PENNSYLVANIA

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

ATTCOM - Pennsylvania, PA PUC, Filed March, 1984 (Rate of
Return)

Bethel and Mt. Aetna Telephone & Telegraph Co., PA PUC;
LR-770090452; 1-78; (Accounting and Rate of Return)

Big Run Telephone Company; PA PUC; R-79100968
(Accounting and Rate of Return)

Columbia Gas of Pennsylvania; PA PUC; R-78120724; 5-79;
(Rate of Return)

Dauphin Consolidated Water Company; PA PUC; R-780-50616;
8-78; (Rate of Return)

Duquesne Light Company; PA PUC; RID-373; (Accounting and
Rate of Return)

Duquesne Light Company; PA PUC; R-80011069; (Accounting
and Rate of Return)

Duquesne Light Company, PA PUC; R-821945; (Rate of
Return) Filed August, 1982

Duquesne Light Company, PA PUC; Docket No. 850021; (Rate
of Return) Filed August, 1985

Equitable Gas Company; PA PUC; R-780040598; 9-78; (Rate
of Return)

General Telephone Company of Pennsylvania; PA PUC; R-
811512; (Rate of Return)

Metropolitan Edison and Pennsylvania Electric Company; PA PUC; 12/80 (Rate of Return)

National Fuel Gas Company; PA PUC; R-77110514; 9-78; (Rate of Return)

Peoples Natural Gas Company; PA PUC; R-78010545; 8-78; (Rate of Return)

Pennsylvania Electric Company; PA PUC; 9-80; (Rate of Return)

Pennsylvania Gas and Water Company; PA PUC; R-80071265 (Accounting and Rate of Return)

Pennsylvania Gas and Water Company; PA PUC; R-78040597; 8-78; (Rate of Return)

Pennsylvania Power Company; PA PUC; R-78040599; 5-78; (Accounting and Rate of Return)

Pennsylvania Power Company; PA PUC; R-811510; 8-81; (Accounting)

Pennsylvania Power Company, Case No. 821918, (Rate of Return), Filed July, 1982

Pennsylvania Power & Light Company; PA PUC; R-80031114 (Accounting and Rate of Return)

Pennsylvania Power & Light Company; PA PUC; R-822169; (Rate of Return), Filed March, 1983

Philadelphia Suburban Water Company; PA PUC; R-79040824; 9-79; (Rate of Return)

UGI Luzerne Electric; PA PUC; R-78030572; 10-78; (Accounting and Rate of Return)

West Penn Power; PA PUC; R-78100685; 7-79

West Penn Power; PA PUC; R-80021082 (Accounting and Rate of Return)

Williamsport vs Borough of S. Williamsport re Sewage rate dispute

RHODE ISLAND

Blackstone Valley Electric Co.; (Rate of Return), Filed 1980

Bristol & Warren; (Rate of Return), Docket No. 1395

Narragansett Electric; RI PUC, Docket 1591, Filed 1981

Newport Electric Co.; RI PUC; 1410; 7-79; (Accounting)

Newport Electric Co.; Docket 1510 (Rate of Return)

Newport Electric Co.; Docket 1801, (Rate of Return) Filed June, 1985

Bristol & Warren Gas Company, Docket No1 1395R, Rate of Return Filed June, 1982

Blackstone Valley Electric Co.; (Rate of Return), Filed 1982 in Docket No. 1605

Narragansett Electric Company, Docket No. 1719, Filed December, 1983 (Rate of Return)

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

SOUTH CAROLINA

South Carolina Electric & Gas Company; Consumer Advocate; 79-196E, 79-197-G; (Accounting)

Small Power Producers and Cogeneration Facilities, Docket 80-251-E, cogeneration rates, Filed August, 1984

VERMONT

New England Telephone; Dept. of Public Service; 3806 (Accounting)

New England Telephone; Dept. of Public Service; 4366 (Accounting)

Green Mountain Power Company, Filed 1982 (Accounting)

WASHINGTON, D.C.

Railroad Cost of Capital, Ex Parte No. 436, Rate of
Return, Filed January 17, 1983

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

Report on the Valuation of Nemours Corporation, filed on
behalf of IRS, October, 1983

New England Power Company, February, 1984, CWIP

Philadelphia Electric Company
Overall Cost of Capital

	Percent	Cost Rate	Weighted Cost
Long-term debt	50.70%	10.81%[A]	5.48%
Preferred Stock	10.80%	10.54%[A]	1.14%
Common Stock	38.50%	14.00%[B]	5.39%
	100.00%		12.01%

Source:

[A]   Exhibit, Schedule 1, Page 1 of Testimony of Mr. Brennan
Embedded cost of long-term ' debt was lowered from 10.84% to
10.81% to reflect actual interest cost incurred by Philadelphia
Electric on new debt.

The embedded cost of preferred stock was
obtained from Mr. Brennan's Exhibit, Schedule 1,
page 1.

[B]   Schedule 1, Page 2

Cost of Equity
for
Philadelphia Electric Company

Cost of Equity Indicated for Non-Nuclear const.   13.54%[A]
Initial Estimate [A]   13.65%

Change in Dividend Yield
from 1984 to Present

Non-Nuclear Electrics
    Year-end 1984 Average Yield [B]   8.71%
    Average 11/30/85 Yield [D]   8.03%

                          Yield Change   -0.68%

Half of Average Yield Change From Dec. '84 to Nov. '85   -0.34%

Financing Costs [C]   0.40%

                     Indicated Cost of Equity   13.71%

                     Recommended Cost of Equity   14.00%

Source
    [A]   Schedule 2, Page 2
    [B]   Schedule 5, Page 3
    [C]   See text.

Utility Company
Dividend Yields
At Nov. 30, 1985

Electric

Non-Nuclear

	Dividend	Market Price	Yield
Baltimore G&E (Split)	$1.70	$23.38	7.27%
Boston Edison	$3.44	$42.00	8.19%
Con Edison of New York	$2.40	$36.50	6.58%
Delmarva Power & Lt.	$1.92	$25.88	7.42%
Florida Progress	$2.28	$28.25	8.07%
Idaho Power	$1.72	$21.38	8.05%
IPALCO Enterprises	$3.04	$36.13	8.42%
Public Service of Col.	$2.00	$20.25	9.88%
TECO	$2.36	$33.13	7.12%
Utah Power & Light	$2.32	$25.00	9.28%
Sub-tot. Non-Nuc.	$2.32	$29.19	8.03%

Nuclear Const.

	Dividend	Market Price	Yield
Carolina Power & Lt.	$2.60	$28.88	9.00%
Central Hudson G&E	$2.96	$28.25	10.48%
Central Maine Power	$1.40	$13.13	10.67%
Cincinnati Gas & Elect.	$2.16	$19.25	11.22%
Cleveland Electric	$2.64	$23.25	11.35%
Commonwealth Edison	$3.00	$28.88	10.39%
Dayton Power & Lt.	$2.00	$19.63	10.19%
Detroit Edison	$1.68	$15.25	11.02%
Houston Industries	$2.64	$27.88	9.47%
Northeast Utilities	$1.58	$17.38	9.09%
Pacific Gas & Elect.	$1.84	$19.50	9.44%
[A]Pennsylvania Power & Lt.	$2.56	$27.25	9.39%
Philadelphia Elect.	$2.20	$15.75	13.97%
Southern California Ed.	$2.16	$24.88	8.68%
Sub-tot. Nuc.	$2.24	$22.08	10.31%

Telephone

Regional Hold.

	Dividend	Market Price	Yield
Amer. Info. Tech.	$6.60	$99.13	6.66%
Bell Atlantic	$6.80	$99.50	6.83%
Bellsouth	$2.80	$44.63	6.27%
Nynex	$6.40	$91.88	6.97%
Pacific Telesis	$5.72	$79.38	7.21%
S.W. Bell	$6.00	$80.25	7.48%
U.S. West	$5.72	$83.13	6.88%
	$5.72	$82.55	6.90%

Other Telephone

	Dividend	Market Price	Yield
Alltel	$1.96	$28.50	6.88%
Cincinnati Bell	$3.12	$50.50	6.18%
Rochester Telephone	$2.44	$37.50	6.51%
Southern New England Tell	$2.72	$43.13	6.31%
United Telecom	$1.92	$22.00	8.73%
	$2.43	$36.33	6.92%

Gas Distribution

	Dividend	Market Price	Yield
Atlanta Gas Light	$2.80	$35.75	7.83%
Brooklyn Union Gas	$3.12	$40.88	7.63%
Indiana Gas Co.	$2.04	$26.25	7.77%
Laclede Gas Co.	$1.90	$28.25	6.73%
Diversified Energies	$1.40	$21.63	6.47%
NICOR	$3.04	$28.00	10.86%
Northwest Natural Gas	$1.52	$19.13	7.95%
Washington Gas Light	$1.66	$21.00	7.90%
Sub-tot.	$2.19	$27.61	7.89%

Source: New York Times, November 30, 1985

[A] Susquehanna 2 is now in service. To be conservative, and to continue consistency with prior years, PP&L was left as a nuclear construction company. Recategorizing PP&L would not change any recommendations.

SUMMARY OF DCF COMPUTATIONS
OF PUBLIC UTILITY COMPANIES

ESTIMATED RESULTS BASED
UPON 11/30/85 MARKET DATA

	[1]	[2]	[3]	[4]
				Estimated
	Indicated			Indicated
	Cost	Dividend	Dividend	Cost
	as of	Yield	Yield	as of
	12/31/84	12/31/84	11/30/85	11/30/85
	[A]	[B]	[C]	[D]

Telephone
Reg. Hold Co's	13.80%	7.85%	6.90%	12.85%
Other	13.71%	7.71%	6.92%	12.92%
Average	13.76%	7.78%	6.91%	12.89%

Non-Nucl. Const. Electrics	13.60%	8.72%	8.03%	12.91%
Gas Distribution Companies	14.68%	7.99%	7.89%	14.58%
Philadelphia Electric Company	14.58%			14.00%
Nuclear Const. Electrics	15.09%	11.28%	10.31%	14.12%

Source:
[A] Schedule 2, Page 2
[B] Schedule 4
[C] Schedule 1, Page 3
[D] Column 1- Column 2 + Column 3

SUMMARY OF DCF COMPUTATIONS
OF PUBLIC UTILITY   COMPANIES

BASED UPON MARKET DATA
AS OF 12/31/84

Amount

Philadelphia Elect. [D]
        High Est.   15.11%
        Low Est.   14.04%

                                  14.58%

Telephone [A]
        Reg. Hold. Co's   13.80%
        Other   13.71%

        Average   13.75%

Non-Nucl. Const. Electrics[B]   13.65%

Gas Distribution Companies[C]   14.68%

Nucl. Const. Electrics[B]   15.09%

Source:
        [A]   Schedule 6, Page 1
        [B]   Schedule 5, Page 1
        [C]   Schedule 7, Page 1
        [D]   Schedule 4, Page 1

Summary of Financial
Data for Public Utility Companies

	Dividend Yield	Market-to-Book Ratio	Return on Equity	1985 Est. Value Line Return on Expected Equity Return on based on Equity IBES	
Average Data for 1983	Actual	Actual	Actual		
Moody's 24 Electrics					
Non-Nucl. Const.	10.70%	1.02	13.28%		
Nucl. Const.	13.02%	0.93	15.22%		
Telephone Companies					
Regional Holding Cos					
Other Tel. Co's	7.52%	1.18	14.00%		
Gas Distribution Co's	11.44%	0.90	11.81%		
Average Data for 1984					
Moody's 24 Electrics					
Non-Nucl. Const.	9.36%	1.06	14.79%		
Nucl. Const.	13.09%	0.82	14.91%		
Telephone Companies					
Regional Holding Cos	8.68%	0.96	13.65%		
Other Tel. Co's	7.79%	1.08	13.81%		
Gas Distribution Co's	8.52%	1.04	16.65%		
Year End Data for 1984					
Moody's 24 Electrics					
Non-Nucl. Const.	8.71%	1.14	14.79%	14.24%	13.90%
Nucl. Const.	11.66%	0.90	14.91%	14.17%	13.79%
Telephone Companies					
Regional Holding Cos	7.85%	1.04	13.65%	13.89%	13.79%
Other Tel. Co's	7.71%	1.15	13.81%	14.52%	14.80%
Gas Distribution Co's	7.99%	1.17	16.65%	15.09%	14.79%

PHILADELPHIA ELECTRIC COMPANY
ESTIMATED COST OF EQUITY
BASED UPON THE DCF METHOD
AND CURRENT DIVIDEND RATE

HIGH ESTIMATE

	Based on Dec. 1984 Hi/Lo 1984 Market	Based on Dec. 31, 1984 Market	Based on Nov. 30, 1985 Market
Market [A] Price			
High	$15.25		
Low	$14.13		
Average	$14.69	$17.81	$17.86
Dividend[A]	$2.20	$2.20	$2.20
Book [G]	$14.69	$14.38	$15.75
1. Dividend Yield on Market Pr. [A]	14.98%	14.78%	13.97%
2. Retention Ratio:			
a) Market-to-Book	0.825	0.835	0.882
b) Dividend Yield on Book[B]	12.35%	12.35%	12.32%
c) Return on Equity [F]	13.25%	13.25%	13.25%
d) Retention Rate(1-2b/2c)	6.77%	6.77%	7.03%
3. Reinvestment Growth(L2c+L23)	0.90%	0.90%	0.93%
4. New Financing Growth [C]	-0.64%	-0.59%	-0.41%
5. Total Estimate of Investor Anticipated Growth(L3 + L4)	0.26%	0.30%	0.53%
6. Dividend Yield:			
a) Current	14.98%	14.78%	13.97%
b) Growth to Next Yr [D]	0.02%	0.02%	0.04%
7. Indicated Cost of Equity (L5 + L6a + L6b)	15.25%	15.11%	14.53%

LOW ESTIMATE

	Based on Dec. 1984 Hi/Lo 1984 Market	Based on Dec. 31, 1984 Market	Based on Nov. 30, 1985 Market
1. Dividend Yield on Market Pr. [A]	14.98%	14.78%	13.97%
2. Retention Ratio:			
a) Market-to-Book	0.825	0.835	0.882
b) Dividend Yield on Book[B]	12.35%	12.35%	12.32%
c) Return on Equity [A]	12.25%	12.25%	12.25%
d) Retention Rate(1-2b/2c)	-0.84%	-0.84%	-0.56%
3. Reinvestment Growth(L2c+L20)	-0.10%	-0.10%	-0.07%
4. New Financing Growth [C]	-0.64%	-0.59%	-0.41%
5. Total Estimate of Investor Anticipated Growth(L3 + L4)	-0.74%	-0.70%	-0.47%
6. Dividend Yield:			
a) Current	14.98%	14.78%	13.97%
b) Growth to Next Yr [D]	-0.06%	-0.05%	-0.03%
7. Indicated Cost of Equity (L5 + L6a + L6b)	14.18%	14.04%	13.46%

SOURCES:

[A] Standard & Poors Stock Guide
[B] Line 1 x Line 2a
[C] Estimated impact of dilution or premium due to sale of
    equity at other than book value. Computation based upon one-half
    of mathematically derived result based upon the
    historical external financing rate.

    $M/B + Ext. Fin. Rate)-1$
    (Line 1 x Line 5)/2
    $M/B \times (1+ext. fin rate)/$ Rate used=   6.50%Nom-M Jc. [E]

[D] Schedule 5, Page 6
[E] See text.
[F] Value Line, Sept. 27, 1985. Book for 9.30/85 derived from average of
    12/31/84 and 12/31/85 figures.
[G]

PHILADELPHIA ELECTRIC COMPANY
Historical Financial Information

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	11/30/85
Market Price, High	$15.50	$18.00	$21.30	$19.80	$17.60	$17.00	$14.40	$17.50	$18.30	$16.00	
Market Price, Low	$11.10	$14.90	$17.10	$15.00	$13.50	$11.40	$11.90	$13.00	$13.50	$9.00	
Market Price, Average	$13.30	$16.45	$19.20	$17.40	$15.55	$14.20	$13.15	$15.25	$15.90	$12.50	$15.75
Book Value, Y/E	$19.05	$19.13	$19.26	$19.28	$19.06	$18.72	$18.10	$17.93	$17.99	$17.81	
Book Value, Average	$19.09	$19.20	$19.27	$19.17	$18.89	$18.41	$18.02	$17.96	$17.90	$17.86	
Market-to-Book Ratio [A]		0.86	1.00	0.90	0.81	0.75	0.71	0.85	0.89	0.70	0.88
Dividend, Actual for Yr.	$1.64	$1.64	$1.76	$1.80	$1.80	$1.80	$1.90	$2.06	$2.12	$2.20	$2.20
Earnings Per Share	$1.86	$1.91	$1.87	$1.87	$1.86	$2.00	$2.25	$2.39	$2.40	$2.70	
Dividend Yield	12.33%	9.97%	9.17%	10.34%	11.58%	12.68%	14.45%	13.51%	13.33%	17.60%	
Return on Equity	10.01%	9.74%	9.70%	9.70%	10.59%	12.22%	13.27%	13.36%	15.08%	13.97%	

Source: Value Line, Sept. 27, 1985, Page 203.

[A] Based upon average price and average book.

Philadelphia Electric
Estimated Reduction in Earned Return on Equity
For Each $100 Million of Limerick Disallowance

Overall

1.	Cost of Capital, est.	12.0%
2.	Rate Base Disallowance	$100,000,000
3.	Pre-tax Income Disallowance	$12,000,000
4.	Income Tax Rate	51.13% (1)
5.	After-Tax Income Disallowance	$6,135,600
6.	Shares Outstanding 12/31/84	162,300,000
7.	Earnings per Share Disallowance (Line 5/Line 6)	$0.04
8.	Book Value per Share 12/31/85 (Estimated by Value Line)	$17.90
9.	Estimated Reduction in Earned Return on Equity for Each $100 Million of Limerick Disallowance	0.22%

(1) State tax rate of 9.5%, combined with Federal tax rate of 46.0%

ELECTRIC UTILITY COMPANY
ESTIMATED COST OF EQUITY
BASED ON DCF METHOD
AND MARKET PRICES AS OF
DECEMBER 31, 1984

	With Nuclear Construction			Average of Est.	Without Nucl. Const.			Average of Est.
	Return Expectation Assumption				Return Expectation Assumption			
	Hist. Eq.	IBES	Value Line		Hist. Eq.	IBES	Value Line	
1. Dividend Yield on Market Pr. [A]	11.66%	11.66%	11.66%	11.66%	8.71%	8.71%	8.71%	8.71%
2. Retention Ratio:								
a) Market-to-Book [A]	0.898	0.898	0.898		1.143	1.143	1.143	
b) Dividend Yield on Book [B]	10.47%	10.47%	10.47%		9.95%	9.95%	9.95%	
c) Return on Equity [A]	14.91%	14.17%	13.79%		14.79%	14.24%	13.90%	
d) Retention Rate(1-2b/2c)	29.75%	26.06%	24.02%		32.68%	30.07%	28.38%	
3. Reinvestment Growth(L2c×L2d)	4.44%	3.69%	3.31%		4.83%	4.28%	3.95%	
4. New Financing Growth [C]	-0.58%	-0.58%	-0.58%		0.38%	0.38%	0.38%	
5. Total Estimate of Investor Anticipated Growth(L3 + L4)	3.86%	3.11%	2.73%		5.22%	4.67%	4.33%	
6. Dividend Yield:								
a) Current	11.66%	11.66%	11.66%		8.71%	8.71%	8.71%	
b) Growth to Next Yr [D]	0.22%	0.18%	0.16%		0.23%	0.20%	0.19%	
7. Indicated Cost of Equity (L5 + L6a + L6b)	15.74%	14.96%	14.56%	15.07%	14.15%	13.58%	13.23%	13.65%

SOURCES:

[A]   Schedule 5, Page 3

[B]   Line 1 x Line 2a

[C]   Estimated impact of dilution or premium due to sale of
      equity at other than book value. Computation based
      of mathematically derived result based on the
      historical external financing rate. [(M/B x (Ext.
      M/B + Ext. Fin. Rate)]-1   Rate used= 8.50%Non-Nucl. [E]

[D]   (Line 1 x Line 5)/2   11.50%Nucl.

[E]   Schedule 5, Page 6
      Schedule 5, Page 7

ELECTRIC UTILITY COMPANY
ESTIMATED COST OF EQUITY
BASED ON DCF METHOD
AND AVERAGE OF HIGH AND LOW
MARKET PRICES IN 1984

	With Nuclear Construction			Average of Est.	Without Nuc. Const.			Average of Est.
	Return Expectation Assumption				Return Expectation Assumption			
	Hist. Eq.	IBES	Value Line		Hist. Eq.	IBES	Value Line	
1. Dividend Yield on Market Pr. [A]	13.09%	13.09%	13.09%		9.36%	9.36%	9.36%	
2. Retention Ratio:								
a) Market-to-Book [A]	0.815	0.815	0.815		1.063	1.063	1.063	
b) Dividend Yield on Book[B]	10.67%	10.67%	10.67%		9.94%	9.94%	9.94%	
c) Return on Equity [A]	14.91%	14.17%	13.79%		14.79%	14.24%	13.90%	
d) Retention Rate(1-L2b/L2c)	28.44%	24.69%	22.61%		32.77%	30.18%	28.49%	
3. Reinvestment Growth(L2c*L2d)	4.24%	3.50%	3.12%		4.85%	4.30%	3.96%	
4. New Financing Growth [C]	-1.14%	-1.14%	-1.14%		0.18%	0.18%	0.18%	
5. Total Estimate of Investor Anticipated Growth	3.10%	2.35%	1.97%		5.03%	4.48%	4.14%	
6. Dividend Yield:								
a) Current	13.09%	13.09%	13.09%		9.36%	9.36%	9.36%	
b) Growth to Next Yr [D]	0.20%	0.15%	0.13%		0.24%	0.21%	0.19%	
7. Indicated Cost of Equity (L5 + L6a + L6b)	16.39%	15.60%	15.19%	15.73%	14.62%	14.04%	13.69%	14.12%

SOURCES:
[A]   Schedule 5, Page 4
[B]   Line 1 x Line 2a
[C]   Estimated impact of dilution or premium due to sale of
       equity at other than book value. Computation based
       of mathematically derived result based on the
       historical external financing rate. [(M/B x (Ext.
       M/B + Ext. Fin. Rate)]-1   Rate used=   6.50%Non- Nuc. [E]
[D]   (Line 1 x Line 5)/2   11.50%Nuc.
[E]   Schedule 5, Page 6
       Schedule 5, Page 7

FINANCIAL DATA ON
MOODY'S 24 ELECTRIC UTILITIES
BASED ON 12/31/84 STOCK MARKET DATA

Company	[1] Nuclear Const.? [A]	[2] Book Per Share 12/31/83 [A]	[3] Book Per Share 12/31/84 [A]	[4] Market Price 12/31/84 [B]	[5] Market-to-Book Ratio 12/31/84 [C]	[6] Dividend Rate 12/31/84 [B]	[7] Dividend Yield 12/31/84 [D]	[8] E.P.S. 12/31/84 [A]	[9] Equity Return E.P.S. 12/31/84 [E]	[10] E.P.S. 12/31/83 [A]	[11] Value Line Estimated Future Return on Eq. [A]	[12] Estimated Eq. for 85 Derived from IBES [F]
Baltimore Gas & Electric	No	$17.04	$18.24	$20.31	1.11	$1.60	7.88%	$2.77	15.70%	$2.48	14.50%	14.86%
Boston Edison	No	$32.21	$32.21	$33.89	1.05	$3.12	9.26%	$4.95	15.05%	$3.60	12.50%	14.21%
Con Edison of New York	No	$28.54	$30.99	$30.75	1.00	$2.12	6.89%	$4.48	15.08%	$4.16	13.00%	13.59%
Delmarva Power & Light	No	$16.87	$17.70	$22.00	1.24	$1.92	8.73%	$2.63	15.22%	$2.45	13.00%	12.60%
Florida Progress Corp.	No	$19.61	$20.03	$23.75	1.19	$2.16	9.09%	$2.71	13.67%	$2.71	15.00%	15.03%
Idaho Power Corp.	No	$15.77	$16.74	$19.13	1.14	$1.64	8.58%	$2.64	17.29%	$2.64	14.50%	14.62%
IPALCO Enterprises	No	$27.13	$28.46	$33.13	1.16	$2.92	8.82%	$4.22	15.18%	$4.17	14.50%	13.69%
Public Service of Colorado	No	$16.70	$17.31	$19.38	1.12	$1.92	9.91%	$2.56	15.05%	$2.25	13.50%	14.56%
TECO	No	$23.48	$24.26	$29.75	1.23	$2.20	7.39%	$3.72	15.58%	$3.14	14.00%	13.73%
Utah Power & Light	No	$18.86	$18.42	$22.00	1.19	$2.32	10.55%	$2.41	12.93%	$2.39	13.00%	14.61%
Sub-total Non-Nuclear Const.		$21.62	$22.43	$25.39	1.14	$2.19	8.71%	$3.32	14.79%	$2.91	13.90%	14.24%
Carolina Power & Light	Yes	$25.39	$25.33	$25.38	0.96	$2.60	10.25%	$3.58	13.84%	$3.21	12.50%	13.66%
Central Hudson Gas & Elect.	Yes	$27.40	$27.91	$25.38	0.91	$2.84	11.19%	$4.43	16.02%	$3.94	13.50%	15.27%
Central Maine Power	Yes	$16.69	$16.17	$9.75	0.60	$1.40	14.36%	$2.50	15.22%	$2.51	15.00%	12.60%
Cincinnati Gas & Elect.	Yes	$20.35	$20.44	$14.75	0.72	$2.16	14.64%	$2.45	12.01%	$2.94	15.00%	12.54%
Cleveland Electric	Yes	$20.79	$21.51	$19.50	0.91	$2.52	12.92%	$2.94	17.21%	$3.28	15.00%	15.53%
Commonwealth Edison	Yes	$27.54	$28.71	$27.88	0.97	$3.00	10.76%	$3.64	15.75%	$4.39	15.00%	14.87%
Dayton Power & Light	Yes	$19.07	$19.05	$15.25	0.80	$2.00	13.11%	$4.43	11.54%	$2.80	15.00%	11.73%
Detroit Edison	Yes	$16.84	$17.11	$16.00	0.94	$1.68	10.50%	$2.20	12.96%	$2.21	12.50%	12.83%
Houston Industries	Yes	$23.79	$24.94	$22.50	0.90	$2.48	11.02%	$3.85	15.80%	$3.54	11.50%	15.92%
Northeast Utilities	Yes	$13.84	$15.07	$14.25	0.95	$1.48	10.39%	$2.62	18.96%	$2.37	15.00%	16.75%
Pacific Gas & Electric	Yes	$16.39	$17.18	$16.38	0.95	$1.72	10.50%	$2.37	15.61%	$2.59	14.50%	15.44%
Pennsylvania Power & Light	Yes	$25.14	$25.46	$25.13	0.99	$2.48	9.87%	$3.06	13.33%	$3.06	15.00%	10.67%
Philadelphia Electric	Yes	$17.99	$17.81	$14.88	0.84	$2.20	14.79%	$2.70	15.08%	$2.40	13.00%	14.54%
Southern California Edison	Yes	$18.83	$19.96	$22.75	1.14	$2.04	8.97%	$3.18	16.40%	$3.11	15.00%	15.98%
Sub-total Nuclear Const.		$20.72	$21.26	$19.27	0.898	$2.19	11.66%	$3.12	14.91%	$3.03	13.79%	14.17%
Average All Companies		$21.09	$21.75	$21.82	1.00	$2.19	10.43%	$3.20	14.98%	$2.98	13.83%	14.20%

Sources:

[A] Value Line, Mar. 29, 1985, Apr. 26, 1985 and March 8, 1985. Updates from est. to actual taken from more recent Value Lines.
[B] Standard & Poor's Stock Guide, Jan. 1985
[C] Column 4/ Column 3
[D] Column 6/ Column 4
[E] Column 9/(avg of Col 2 and Col. 3)

FINANCIAL DATA ON
MOODY'S 24 E ELECTRIC UTILITIES
BASED ON 12/31/84 STOCK MARKET DATA
AVERAGE FOR YEAR

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
	Nuclear	Book	Book	Market	Price	12/31/84	1984	Dividend		Equity	
Company	Const. ?	Per Share	Per Share	1984		Market-to-Book	Dividend	Yield	E.P.S.	Return	E.P.S.
		12/31/83	12/31/84	High	Low	Ratio	Rate			12/31/84	12/31/83
	[A]	[A]	[A]	[A]	[A]	[B]	[A]	[C]	[A]	[D]	[A]
Baltimore Gas & Electric	No	$17.04	$18.24	$20.30	$15.20	1.01	$1.55	8.73%	$2.77	15.70%	$2.48
Boston Edison	No	$32.21	$32.21	$35.50	$24.90	0.94	$3.12	10.33%	$2.85	15.06%	$3.60
Con Edison of New York	No	$28.54	$30.89	$31.30	$22.60	0.91	$2.12	7.87%	$4.48	15.08%	$4.16
Delmarva Power & Light	No	$16.87	$17.70	$22.40	$17.10	1.14	$1.83	9.27%	$2.63	15.22%	$2.45
Florida Progress Corp.	No	$19.61	$20.03	$24.30	$18.80	1.09	$2.07	9.61%	$2.71	13.67%	$2.64
Idaho Power Corp.	No	$15.77	$16.74	$19.30	$15.40	1.07	$1.59	9.16%	$2.81	17.29%	$2.25
IPALCO Enterprises	No	$27.13	$28.46	$33.80	$26.00	1.08	$2.88	9.63%	$4.22	15.18%	$4.17
Public Service of Colorado	No	$16.70	$17.31	$19.60	$16.30	1.06	$1.92	10.70%	$2.56	15.05%	$1.86
TECO	No	$23.48	$24.26	$30.50	$24.00	1.14	$2.16	7.93%	$3.72	15.58%	$3.14
Utah Power & Light	No	$18.86	$18.42	$24.50	$20.40	1.20	$2.32	10.33%	$2.41	12.93%	$2.39
Sub-total Non-Nuclear Const.		$21.62	$22.43	$26.15	$20.07	1.06	$2.16	9.36%	$3.32	14.79%	$2.91
Carolina Power & Light	Yes	$25.39	$26.33	$26.10	$19.30	0.89	$2.54	11.19%	$3.58	13.84%	$3.21
Central Hudson Gas & Elect.	Yes	$27.40	$27.91	$25.60	$16.10	0.75	$2.78	13.33%	$4.43	16.02%	$3.94
Central Maine Power	Yes	$16.69	$16.17	$14.80	$7.90	0.69	$1.58	14.80%	$2.50	15.22%	$2.51
Cincinnati Gas & Elect.	Yes	$20.35	$20.44	$15.40	$8.90	0.60	$2.16	17.78%	$2.45	12.01%	$2.94
Cleveland Electric	Yes	$20.79	$21.51	$20.30	$13.30	0.81	$2.43	14.25%	$3.64	17.21%	$3.29
Commonwealth Edison	Yes	$27.54	$28.71	$28.90	$21.50	0.90	$3.00	11.90%	$4.43	15.75%	$4.39
Dayton Power & Light	Yes	$19.07	$19.06	$16.30	$11.60	0.73	$2.00	14.34%	$2.20	11.54%	$2.80
Detroit Edison	Yes	$16.84	$17.11	$16.10	$11.50	0.81	$1.68	12.17%	$2.20	12.98%	$2.21
Houston Industries	Yes	$23.79	$24.94	$22.50	$17.60	0.82	$2.44	12.17%	$3.85	15.80%	$3.54
Northeast Utilities	Yes	$13.84	$15.07	$14.80	$10.60	0.88	$1.48	11.65%	$2.74	10.96%	$2.37
Pacific Gas & Electric	Yes	$16.39	$17.18	$17.30	$12.40	0.88	$1.69	11.38%	$2.62	15.61%	$2.59
Pennsylvania Power & Light	Yes	$25.14	$25.46	$25.60	$19.50	0.89	$2.48	11.00%	$3.12	12.33%	$3.06
Philadelphia Electric	Yes	$17.99	$17.81	$16.00	$9.00	0.70	$2.20	17.60%	$2.70	15.08%	$2.40
Southern California Edison	Yes	$18.83	$19.96	$24.40	$17.10	1.07	$2.01	9.69%	$3.18	16.40%	$3.11
Sub-total Nuclear Const.		$20.72	$21.26	$20.29	$14.06	0.82	$2.18	13.09%	$3.12	14.91%	$3.03
Average All Companies		$21.09	$21.75	$22.73	$16.56	0.92	$2.17	11.53%	$3.20	14.97%	$2.98

Sources:

[A] Value Line, Mar.29, 1985, Jan 25,1985 and March 8, 1984
[B] (Col.4+ Col.5/(Col.2+ Col.3)
[C] Col. 7 /(Average of Col. 4 and Col. 5)
[D] Col. 9 / (Average of Col. 2 and Col. 3)

FINANCIAL DATA ON
MOODY'S 24 E ELECTRIC UTILITIES
BASED ON 12/31/83 STOCK MARKET DATA
AVERAGE FOR YEAR

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Nuclear Const.?	Book Per Share 12/31/82	Book Per Share 12/31/83	Market Price 1983 High	Market Price 1983 Low	Market-to-Book Ratio 12/31/83	Dividend Rate 12/31/83	Dividend Yield 12/31/83	E.P.S. 12/31/83	Equity Return 12/31/83	E.P.S. 12/31/82
	[A]	[A]	[A]	[A]	[A]	[B]	[A]	[C]	[A]	[D]	[A]
Baltimore Gas & Electric	No	$16.12	$17.04	$17.20	$13.90	0.94	$1.46	10.50%	$2.48	14.96%	$2.04
Boston Edison	No	$31.71	$32.21	$29.50	$25.00	0.85	$2.91	11.64%	$3.18	9.95%	$3.18
Con Edison of New York	No	$26.32	$28.54	$25.90	$19.00	0.82	$1.88	9.88%	$4.16	15.17%	$3.55
Delmarva Power & Light	No	$16.11	$16.87	$19.60	$15.50	1.06	$1.68	10.84%	$2.45	14.86%	$2.13
Florida Progress Corp.	No	$18.93	$19.61	$22.60	$18.00	1.05	$1.95	10.83%	$2.64	13.70%	$2.20
Idaho Power Corp.	No	$15.01	$15.77	$17.50	$14.30	1.03	$1.49	10.42%	$2.25	14.62%	$2.36
IPALCO Enterprises	No	$25.58	$27.13	$30.60	$25.60	1.07	$2.76	10.78%	$4.17	15.82%	$3.41
Public Service of Colorado	No	$16.69	$16.70	$19.00	$16.10	1.05	$1.84	11.43%	$1.86	11.14%	$3.17
TECO	No	$21.35	$23.48	$26.90	$20.80	1.06	$2.00	9.62%	$3.14	14.01%	$2.49
Utah Power & Light	No	$18.66	$18.86	$25.00	$20.80	1.22	$2.29	11.01%	$2.39	12.74%	$2.38
Sub-total Non-Nuclear Const.		$20.55	$21.62	$23.38	$18.90	1.02	$2.03	10.70%	$2.87	13.28%	$2.59
Carolina Power & Light	Yes	$24.85	$25.39	$25.10	$20.40	0.91	$2.46	12.06%	$3.21	12.78%	$3.17
Central Hudson Gas & Elect.	Yes	$26.78	$27.40	$26.10	$21.50	0.88	$2.63	12.23%	$3.94	14.54%	$3.91
Central Maine Power	Yes	$16.20	$16.89	$17.00	$14.40	0.95	$1.90	13.19%	$2.51	15.26%	$2.02
Cincinnati Gas & Elect.	Yes	$19.70	$20.35	$19.40	$11.90	0.78	$2.16	18.15%	$2.75	13.73%	$2.94
Cleveland Electric	Yes	$19.86	$20.79	$23.00	$16.60	0.97	$2.31	13.92%	$3.28	16.14%	$3.01
Commonwealth Edison	Yes	$26.25	$27.54	$29.30	$24.50	1.00	$3.00	12.24%	$4.39	16.32%	$3.75
Dayton Power & Light	Yes	$18.35	$19.07	$19.10	$11.30	0.81	$2.00	17.70%	$2.80	14.97%	$2.65
Detroit Edison	Yes	$16.92	$16.84	$16.00	$13.00	0.86	$1.88	12.92%	$2.21	13.09%	$1.75
Houston Industries	Yes	$22.79	$23.79	$24.30	$19.00	0.93	$2.28	12.00%	$3.54	15.20%	$3.77
Northeast Utilities	Yes	$12.96	$13.84	$13.90	$11.80	0.96	$1.38	11.69%	$2.37	17.49%	$1.76
Pacific Gas & Electric	Yes	$15.87	$16.39	$16.80	$13.90	0.95	$1.58	11.37%	$2.59	16.06%	$2.46
Pennsylvania Power & Light	Yes	$24.73	$25.14	$24.50	$20.00	0.89	$2.40	12.00%	$3.06	12.27%	$3.35
Philadelphia Electric	Yes	$17.93	$17.99	$18.30	$13.50	0.89	$2.12	15.70%	$2.40	13.36%	$2.39
Southern California Edison	Yes	$17.54	$18.83	$21.40	$17.20	1.06	$1.83	10.64%	$3.11	17.10%	$2.57
Sub-total Nuclear Const.		$19.32	$20.02	$20.66	$16.08	0.93	$2.06	13.02%	$2.98	15.22%	$2.75
Average All Companies		$20.30	$21.09	$22.00	$17.42	0.96	$2.08	12.20%	$2.95	14.35%	$2.72

Sources:
[A] Value Line, Mar.29, 1985, Jan 25,1985 and Dec. 7, 1984. BG&E and Idaho Power Adjusted for 2 for 1 split.
[B] (Col.4+ Col.5/(Col.2+ Col.3)
[C] Col. 7 /(Average of Col. 4 and Col. 5)
[D] Col. 9 /(Average of Col. 2 and Col. 3)

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

Common Stock Outstanding:	1979	1980	1981	1982	1983	1984	Compound Annual Growth
Baltimore G & E	63.38	65.38	67.67	74.70	77.21	78.62	4.40%
Boston Edison	13.63	13.93	14.22	14.67	15.15	15.75	2.93%
Con Edison	125.15	125.98	126.91	128.53	129.75	129.90	0.75%
Delmarva Power	24.30	24.93	27.91	29.05	29.84	30.48	4.64%
Florida Progress	29.16	32.62	36.49	38.30	41.72	44.10	8.63%
Idaho Power	24.10	27.31	27.64	31.58	32.55	33.25	6.65%
Ipalco	13.15	13.26	14.40	15.87	17.21	17.63	6.04%
P.S. of Colorado	32.33	39.99	44.90	47.02	49.18	51.63	9.81%
TECO	15.29	15.36	16.47	21.40	23.35	26.97	12.02%
Utah P & L	35.30	39.83	44.64	50.79	52.27	53.80	8.79%
	-------	-------	-------	-------	-------	-------	-------
	37.58	39.86	42.13	45.19	46.82	48.21	

Source:
      Value Line

Average   6.47%

Round to   6.50%

NUCLEAR CONSTRUCTION
EXTERNAL FINANCING RATE
(Millions of Shares)

Common Stock Outstanding:	1979	1980	1981	1982	1983	1984	Compound Annual Growth
Carolina Power	41.39	51.21	56.14	58.84	62.49	66.65	10.00%
Central Hudson	5.37	6.54	7.46	8.51	9.62	11.01	15.44%
Central Maine Power	12.07	13.95	16.23	17.13	18.40	21.30	12.03%
Cincinnati Gas	27.23	31.47	34.47	40.46	42.04	43.03	9.58%
Cleveland Electric	41.27	46.29	51.05	61.77	65.2	74.04	12.40%
Commonwealth Edison	87.88	108.3	122.51	148.74	167.24	176.21	14.93%
Dayton P & L	23.84	27.5	31.4	36.72	38.05	39.64	10.70%
Detroit Edison	74.46	84.03	95.09	111.39	130.34	139.08	13.31%
Houston Industries	53.93	63.97	73.90	80.18	93.35	99.46	13.02%
Northeast Utilities	66.59	68.21	79	89.5	98.39	104.53	9.44%
Pacific G & E	227.25	247.7	259.1	284.53	300.52	316.91	6.88%
Pennsylvania P & L	43.5	50.63	58.45	66.46	70.33	74.51	11.36%
Philadelphia Electric	82.88	92.63	108.51	125.77	142.81	162.3	14.39%
Southern Calif. Ed.	129.79	151.71	175.21	193.38	201.48	212.55	10.37%
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	65.53	74.58	83.47	94.53	102.88	110.09	

Source:
    Value Line

Average   11.70%

Round to   11.50%

Comparison of Market-to-Book Ratios
of Non-Nuclear Const. Electrics with
Nuclear Const. Electrics

Year	Market-to Book Ratio Non-Nucl. Electrics	Market-to Book Ratio Nuclear Electrics	Difference
Nov. 30, 1985 *	1.30	1.04	0.26
12/31/84	1.14	0.94	0.20
12/31/83	1.02	0.93	0.09
12/31/82	0.98	0.93	0.05
12/31/81	0.82	0.75	0.07
12/31/80	0.74	0.69	0.05

* Based upon 11/30/85 market price and
  12/31/84 book values

NUCLEAR

FINANCIAL DATA ON
MOODY'S 24 ELECTRIC UTILITIES
BASED ON 12/31/84 STOCK MARKET DATA

Company	[1] Nuclear Const. [A]	[2] Book Per Share 12/31/83 [A]	[3] Book Per Share 12/31/84 [A]	[4] Market Price 12/31/84 [B]	[5] Market-to-Book Ratio 12/31/84 [C]	[6] Dividend Rate 12/31/84 [B]	[7] Dividend Yield 12/31/84 [D]	[8] E.P.S. 12/31/84 [A]	[9] Equity Return E.P.S. 12/31/84 [E]	[10] E.P.S. 12/31/83 [A]	[11] Value Line Estimated Future Eq. Return [A]	[12] Estimated Eq. Return Derived from IBES [F]	[13] Dividend Payout Ratio As Percent of Equity	[14] Estimated New Nucl. Const. Expected Total Inv. As Percent of Equity [F]
Lower Market-to-book Group:														
Central Maine Power	Yes	$16.69	$16.17	$9.75	0.60	$1.40	14.36%	$2.50	15.22%	$2.51	12.00%	12.88%	0.56	136.00%
Cincinnati Gas & Elect.	Yes	$20.35	$20.44	$14.75	0.72	$2.16	14.64%	$2.45	12.01%	$2.94	15.00%	16.99%	0.88	163.00%
Dayton Power & Light	Yes	$19.07	$19.06	$15.25	0.80	$2.00	13.11%	$2.20	11.54%	$2.80	12.50%	15.26%	0.91	116.00%
Philadelphia Electric	Yes	$17.99	$17.81	$14.88	0.84	$2.20	14.79%	$2.70	15.08%	$2.40	14.00%	13.31%	0.81	170.00%
Houston Industries	Yes	$23.79	$24.94	$22.50	0.90	$2.48	11.02%	$3.85	15.80%	$3.55	14.50%	14.90%	0.84	97.00%
Cleveland Electric	Yes	$20.79	$21.51	$19.50	0.91	$2.52	12.92%	$3.64	17.21%	$3.28	15.00%	13.00%	0.69	163.00%
Central Hudson Gas & Elect.	Yes	$27.40	$27.91	$25.38	0.91	$2.84	11.19%	$4.43	16.02%	$3.94	13.50%	16.07%	0.64	174.00%
Average		$20.87	$21.12	$17.43	0.83	$2.23	13.15%	$3.11	14.70%	$3.06	13.79%	15.34%	0.73	145.57%
Higher Market-to-book Group:														
Detroit Edison	Yes	$16.84	$17.11	$16.00	0.94	$1.68	10.50%	$2.20	12.96%	$2.21	11.50%	12.88%	0.76	113.00%
Northeast Utilities	Yes	$13.84	$15.07	$14.25	0.95	$1.48	10.39%	$2.74	18.96%	$2.37	15.00%	16.99%	0.54	183.00%
Pacific Gas & Electric	Yes	$16.39	$17.18	$16.38	0.95	$1.72	10.50%	$2.62	15.61%	$2.59	14.50%	15.26%	0.66	100.00%
Carolina Power & Light	Yes	$25.39	$26.33	$25.38	0.96	$2.60	10.25%	$3.58	13.84%	$3.21	12.50%	13.31%	0.73	127.00%
Commonwealth Edison	Yes	$27.54	$28.71	$27.88	0.97	$3.00	10.76%	$4.43	15.75%	$4.39	15.00%	14.90%	0.68	161.00%
Pennsylvania Power & Light	Yes	$25.14	$25.86	$25.13	0.99	$2.48	9.87%	$3.06	12.33%	$3.06	13.00%	12.94%	0.79	107.00%
Southern California Edison	Yes	$18.83	$19.96	$22.75	1.14	$2.04	8.97%	$3.18	16.40%	$3.11	16.00%	16.07%	0.64	39.00%
Average		$20.60	$21.37	$21.11	0.99	$2.14	10.18%	$3.12	15.12%	$2.99	13.79%	14.62%	0.69	118.57%
Average All Companies		$20.74	$21.24	$19.27	0.90	$2.19	11.66%	$3.12	14.91%	$3.03	13.79%	14.98%	0.71	132.07%

Sources:

[A] Value Line, March 29, 1985, April 26, 1985 March 8, 1985 Sept. 6,1985, and Sept. 27, 1985

[B] Standard & Poor's Stock Guide, Jan. 1985

[C] Column 4/ Column 3

[D] Column 6/ Column 4

[E] Column 8/avg of Col 2 and Col. 3)

[F] Salomon Brothers, Nuclear Power in the United States, July, 1984.

TELEPHONE UTILITY COMPANIES
ESTIMATED COST OF EQUITY
BASED ON DCF METHOD
AND MARKET PRICES AS OF
DECEMBER 31, 1984

	Regional Holding Companies			Average of Est.	Other Telephone Companies			Average of Est.
	Return Expectation Assumption				Return Expectation Assumption			
	Hist. Eq.	IBES	Value Line		Hist. Eq.	IBES	Value Line	
1. Dividend Yield on Market Pr. [A]	7.85%	7.85%	7.85%		7.71%	7.71%	7.71%	
2. Retention Ratio:								
a) Market-to-Book [A]	1.036	1.036	1.036		1.153	1.153	1.153	
b) Dividend Yield on Book[B]	8.13%	8.13%	8.13%		8.89%	8.89%	8.89%	
c) Return on Equity [A]	13.65%	13.89%	13.79%		13.81%	14.52%	14.80%	
d) Retention Rate(1-L2b/L2c)	40.48%	41.49%	41.05%		35.59%	38.77%	39.92%	
3. Reinvestment Growth(L2c*L2d)	5.53%	5.76%	5.66%		4.91%	5.63%	5.91%	
4. New Financing Growth [C]	0.07%	0.07%	0.07%		0.29%	0.29%	0.29%	
5. Total Estimate of Investor Anticipated Growth(L3 + L4)	5.60%	5.84%	5.73%		5.20%	5.92%	6.19%	
6. Dividend Yield:								
a) Current	7.85%	7.85%	7.85%		7.71%	7.71%	7.71%	
b) Growth to Next Yr [D]	0.22%	0.23%	0.22%		0.20%	0.23%	0.24%	
7. Indicated Cost of Equity (L5 + L6a + L6b)	13.67%	13.91%	13.80%	13.80%	13.12%	13.86%	14.15%	13.71%

SOURCES:
[A]   Schedule 6, Page 3
[B]   Line 1 x Line 2a
[C]   Estimated impact of dilution or premium due to sale of
        equity at other than book value. Computation based on one half
        of mathematically derived result based on the
        historical external financing rate. M/B x (Ext. fin. rate)/
        M/B + Ext. Fin. Rate. Rate used =   4.50%[E]
[D]   (Line 1 x Line 5)/2
[E]   Schedule 6, Page 6

TELEPHONE UTILITY COMPANIES
ESTIMATED COST OF EQUITY
BASED ON DCF METHOD
AND AVERAGE OF HIGH AND LOW
MARKET PRICES IN 1984

	Regional Holding Companies			Average of Est.	Other Telephone Companies			Average of Est.
	Return Expectation Assumption				Return Expectation Assumption			
	Hist. Eq.	IBES	Value Line		Hist. Eq.	IBES	Value Line	
1. Dividend Yield on Market Pr. [A]	8.68%	8.68%	8.68%		7.79%	7.79%	7.79%	
2. Retention Ratio:								
a) Market-to-Book [A]	0.962	0.962	0.962		1.080	1.080	1.080	
b) Dividend Yield on Book[B]	8.35%	8.35%	8.35%		8.42%	8.42%	8.42%	
c) Return on Equity [A]	13.65%	13.89%	13.79%		13.81%	14.52%	14.80%	
d) Retention Rate(1-L2b/L2c)	38.85%	39.89%	39.43%		39.04%	42.04%	43.13%	
3. Reinvestment Growth(L2c*L2d)	5.30%	5.54%	5.44%		5.39%	6.10%	6.38%	
4. New Financing Growth [C]	-0.09%	-0.09%	-0.09%		0.16%	0.16%	0.16%	
5. Total Estimate of Investor Anticipated Growth(L3 + L4)	5.22%	5.45%	5.35%		5.55%	6.26%	6.54%	
6. Dividend Yield:								
a) Current	8.68%	8.68%	8.68%		7.79%	7.79%	7.79%	
b) Growth to Next Yr [D]	0.23%	0.24%	0.23%		0.22%	0.24%	0.25%	
7. Indicated Cost of Equity (L5 + L6a + L6b)	14.13%	14.37%	14.26%	14.25%	13.56%	14.30%	14.59%	14.15%

SOURCES:

[A]   Schedule 4, Page 4
[B]   Line 1 x Line 2a
[C]   Estimated impact of dilution or premium due to sale of
        equity at other than book value. Computation based on one half
        of mathematically derived result based on the
        historical external financing rate. M/B x (Ext. fin. rate)/
        M/B + Ext. Fin. Rate. Rate used =   4.50%[E]
[D]   (Line 1 x Line 2a)/2
[E]   Schedule 6, Page 6

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GAS DISTRIBUTION UTILITY COMPANIES
ESTIMATED COST OF EQUITY
BASED ON DCF METHOD
AND MARKET PRICES AS OF
DECEMBER 31, 1984

	Basis for Future Expected ROE			Average of Estimates
	Hist. Eq.	IBES	Value Line	

1. Dividend Yield on Market Pr.[A]		7.99%	7.99%	7.99%	
2. Retention Ratio:					
a) Market-to-Book [A]		1.171	1.171	1.171	
b) Dividend Yield on Book [B]		9.36%	9.36%	9.36%	
c) Return on Equity [A]		16.65%	15.09%	14.79%	
d) Retention Rate(1-L2b/L2c)		43.79%	37.96%	36.69%	
		------	------	------	
3. Reinvestment Growth(L2c*L2d)		7.29%	5.73%	5.42%	
4. New Financing Growth [C]		0.28%	0.28%	0.28%	
		------	------	------	
5. Total Estimate of Investor Anticipated Growth(L3 + L4)		7.57%	6.01%	5.71%	
6. Dividend Yield:					
a) Current		7.99%	7.99%	7.99%	
b) Growth to Next Yr [D]		0.30%	0.24%	0.23%	
		------	------	------	
7. Indicated Cost of Equity (L5 + L6a + L6b)		15.87%	14.24%	13.93%	14.68%
		======	======	======	======

SOURCES:

[A]   Schedule 7, Page 3
[B]   Line 1 x Line 2a)
[C]   Estimated impact of dilution or premium due to sale of
       equity at other than book value. Computation based on one-half of
       of mathematically derived result based on the
       historical external financing rate. [(M/B x (Ext.
       M/B + Ext. Fin. Rate)]-1   Rate =   4.00%[E]
[D]   (Line 1 x Line 5)/2
[E]   Schedule 7, Page 6

GAS DISTRIBUTION UTILITY COMPANIES
ESTIMATED COST OF EQUITY
BASED ON DCF METHOD
AND AVERAGE OF HIGH AND LOW
MARKET PRICES IN 1984

	Basis for Future Expected ROE			Average of Estimates
	Hist. Eq.	IBES	Value Line	

1. Dividend Yield on Market Pr.[A]	8.52%	8.52%	8.52%	
2. Retention Ratio:				
a) Market-to-Book [A]	1.042	1.042	1.042	
b) Dividend Yield on Book [B]	8.87%	8.87%	8.87%	
c) Return on Equity [A]	16.65%	15.09%	14.79%	
d) Retention Rate(1-L2b/L2c)	46.71%	41.19%	39.98%	
3. Reinvestment Growth(L2c*L2d)	7.78%	6.22%	5.91%	
4. New Financing Growth [C]	0.08%	0.08%	0.08%	
5. Total Estimate of Investor Anticipated Growth(L3 + L4)	7.86%	6.29%	5.99%	
6. Dividend Yield:				
a) Current	8.52%	8.52%	8.52%	
b) Growth to Next Yr [D]	0.33%	0.27%	0.26%	
7. Indicated Cost of Equity (L5 + L6a + L6b)	16.71%	15.08%	14.76%	15.52%

SOURCES:
[A]   Schedule 7, Page 4
[B]   Line 1 x Line 2a
[C]   Estimated impact of dilution or premium due to sale of
         equity at other than book value. Computation based on one-half of
         of mathematically derived result based on the
         historical external financing rate. [(M/B x (Ext.
         M/B + Ext. Fin. Rate)]-1   Rate =   4.00%[E]
[D]   (Line 1 x Line 5a)/2
[E]   Schedule 7, Page 6

Common Stock Cost of Floatation
For the Utility Industry

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

Source: Cost of Floatation of Registered Issues 1971-1972, December, 1974, Securities and Exchange Commission Table A-8.

Risk Premium Analysis

Year	[1] Allowed Return on Equity [A]	[2] Earned Return on Equity [B]	[3] Average Yield on Aa Ut. Bonds [B]	[4] Risk Premium Earned by Equity over Aa Yield Col.2-Col.3	[5] Risk Premium Allowed to Equity over Aa Yield Col.1-Col.3	[6] Average Market-to-Book Ratio [B]
Y/E 1984 Excl. Nucl.		14.79%	12.90%	1.89%		1.14
Avg. 1984 Excl. Nucl.		14.79%	13.64%	1.15%		1.06
1984	15.51%	14.98%	13.64%	1.34%	1.87%	0.92
1983	15.58%	14.34%	12.83%	1.51%	2.75%	0.89
1982	16.08%	13.24%	14.79%	-1.55%	1.29%	0.77
1981	15.63%	12.26%	15.30%	-3.04%	0.33%	0.67
1980	14.33%	10.86%	13.00%	-2.14%	1.33%	0.68
1979	13.43%	11.07%	10.22%	0.85%	3.21%	0.75
1978	13.32%	10.81%	9.10%	1.71%	4.22%	0.80
1977	13.77%	11.09%	8.43%	2.66%	5.34%	0.87
1976	13.23%	10.67%	8.92%	1.75%	4.31%	0.79
1975	13.28%	10.43%	9.44%	0.99%	3.84%	0.69
1974	13.06%	10.53%	9.04%	1.49%	4.02%	0.67
1973		10.63%	7.72%	2.91%		1.00
1972		11.30%	7.60%	3.70%		1.17
1971		10.95%	8.00%	2.95%		1.29
1970		11.06%	8.52%	2.54%		1.27
1969		11.68%	7.34%	4.34%		1.60
1968		11.82%	6.35%	5.47%		1.74
1967		12.45%	5.66%	6.79%		1.90
1966		12.24%	5.25%	6.99%		2.00
1965		11.88%	4.52%	7.36%		2.35
1964		11.35%	4.44%	6.91%		2.28

Source:

[A]   Merril Lynch Utility Industry Quarterly Regulatory Report, Dec.,1984 p.38

[B]   1984 Moody's Public Utility Manual, pages a6 thru a13.

Data for 1984 is obtained from Schedule 5.

Aa average bond yield for 1984 was estimated by averaging month-end

actuals as reported in Moody's Newsreports.