ORIGINAL

2208

BEFORE
THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

- - - - -

In re: R-79060865, etc. - Philadelphia Electric Company. Investigation into a requested $123 million annual rate increase. Evidentiary hearing.

- - - - -

Harrisburg, Pennsylvania

November 21, 1979

RECEIVED
'79 NOV 26 PM 4:18
SECRETARY'S OFFICE
PUBLIC UTILITY
COMMISSION

- - - - -

Pages 2038 to 2087

- - - - -

MOHRBACH & MARSHAL, INC.
27 N. Lockwillow Avenue
Harrisburg, Pennsylvania

DOCKETED
NOV 28 1979

DOCUMENT
FOLDER

BEFORE
THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

- - - - -

In re: R-79060865, etc. - Philadelphia Electric Company. Investigation into a requested $123 million annual rate increase.

- - - - -

Stenographic report of hearing held in Hearing Room No. 2, North Office Building, Harrisburg, Pennsylvania,

Wednesday,
November 21, 1979,
at 10:09 o'clock a.m.

- - - - -

JOSEPH KLOVEKORN, ADMINISTRATIVE LAW JUDGE

- - - - -

APPEARANCES:

WALTER R. HALL, II, ESQ.
Morgan, Lewis & Bockius, Esqs.
123 South Broad Street
Philadelphia, Pennsylvania 19109
For - Philadelphia Electric Company

GREGG C. SAYRE, ESQ.
G-28 North Office Building
Harrisburg, Pennsylvania
For - Public Utility Commission Trial Staff

MARK B. SEGAL, ESQ.
Community Legal Services
Juniper and Locust Streets
Philadelphia, Pennsylvania 19107
For - CEPA, ACORN, Action Alliance

APPEARANCES: (Continued)

CRAIG BURGRAFF, ESQ.
14th Floor, Strawberry Square
Harrisburg, Pennsylvania 17127
For - Office of Consumer Advocate

INDEX TO WITNESSES

WITNESS:	DIRECT	CROSS	RE-DIRECT	RE-CROSS
Donald H. Muth	2041	2044	2075	2081

INDEX TO STATEMENT

TRIAL STAFF:	IDENTIFIED
Statement No. DHM-1 - Direct Testimony of Donald H. Muth concerning Fair Rate of Return	2043

INDEX TO EXHIBIT

TRIAL STAFF:	
Exhibit No. DHM-1A - Exhibit to Accompany the Direct Testimony of Donald H. Muth concerning Fair Rate of Return . .	2043

THE ADMINISTRATIVE LAW JUDGE: Are we ready to begin?

MR. SAYRE: Mr. Muth has not yet been sworn.

DONALD H. MUTH, called as a witness on behalf of the Pennsylvania Public Utility Commission, was sworn and testified as follows:

DIRECT EXAMINATION

BY MR. SAYRE:

Q Could you please, for the record, state your name, your business address, your employer and your position?

A My name is Donald H. Muth. My business address is 210 North Office Building, Harrisburg, Pennsylvania. I'm employed by the Bureau of Rates, Pennsylvania Public Utility Commission. My present position is supervisor of Rate of Return and Taxes.

Q Do you have before you a document entitled "Trial Staff Statement No. DHM-1," including Appendix A, which has 27 pages in its main portion and 3 pages in its appendix; and further, a document entitled "Trial Staff Exhibit No. DHM-1A," consisting of 26 schedules with various pages per schedule?

A I do.

Q Were these documents prepared by yourself and

under your direct supervision and control?

A Yes, they were.

Q Have corrections been distributed to the parties and to the Administrative Law Judge of page 8 of Statement DHM and on DHM-1A, page 1 of Schedule 10 and page 1 of Schedule 16?

A Yes, that's correct.

Q Apart from these corrections, do you have any other corrections that you wish to make to the Statement or the exhibit?

A Yes. I have several cosmetic changes.

Page 5, Line 21, the word "understated" should be "overstated."

MR. HALL: Excuse me, Mr. Muth. I already have "overstated" in mine. Do you mean change it from "overstated" to "understated"?

MR. SAYRE: I think that's been changed. I've got that, too.

THE WITNESS: I am sorry. It's the reverse. The word "overstated" should be "understated." Excuse me.

On page 8, Line 18, the rate of 15 per cent stated there is now 15.75 per cent, or at least it was this morning.

On page 10, Line 26, the words "material effect" should be "materially affect."

MR. HALL: What lines were those?

THE WITNESS: That was Line 26. The way it reads now is "material effect". It should be "materially affect."

And one more change. On page 14, Line 5, the word "theoretical" should be "theoretically."

That's all the changes I have.

MR. SAYRE: Apart from the changes made just now on the witness stand, the copies that I'm now handing to the court reporter do have the revised pages that we identified. I will hand 3 copies of DHM-1 and Exhibit DHM-1A to the court reporter and ask that they be so marked as Trial Staff Statement and Exhibits.

THE ADMINISTRATIVE LAW JUDGE: Without objection, they will be so identified.

(Trial Staff Statement No. DHM-1, a multi-page document entitled, "Direct Testimony of Donald H. Muth concerning fair rate of return," and Appendix A attached thereto, was produced and marked for identification.)

(Trial Staff Exhibit No. DHM-1A, a multi-page document entitled, "Exhibit to Accompany the Direct Testimony of Donald H. Muth concerning Fair Rate of Return," and consisting of various schedules, was produced and marked for identification.)

MR. SAYRE: Mr. Muth is available for -- strike that. I have one more question.

BY MR. SAYRE:

Q Mr. Muth, in the Trial Staff's prehearing memorandum there was stated that the Trial Staff would put on some testimony regarding the Capital Asset Pricing Model with respect to rate of return. Has that analysis been made and will it be submitted?

A No, it will not be submitted, unfortunately, because of the large amount of computer data necessary or the use of the computer for this particular model. We did not get it finished for this case, and we will not be presenting it.

MR. SAYRE: Mr. Muth is now available for cross examination.

THE ADMINISTRATIVE LAW JUDGE: Mr. Hall?

CROSS EXAMINATION

BY MR. HALL:

Q Good morning, Mr. Muth.

A Good morning, sir.

Q Mr. Muth, am I correct that your work experience with public utilities begins with your employment by General Waterworks Corporation in 1969?

A Yes, that's correct.

Q And was the nature of your employment on

behalf of that corporation and subsequently until you joined the Commission in 1973 principally in the field of accounting

A Yes, sir.

Q And from 1973 through 1978 you were employed, were you not, by the Commission and charged with the responsibility of analyzing utility claim operating revenue, expense tax, rate base, and rate structure in proposals, is that not correct?

A Yes, that's correct.

Q Now, since January 1 of this year you have been supervisor for the Tax and Rate of Return Section of the Bureau of Rates, is that not correct?

A Yes, that's correct.

Q And in that capacity you have testified on rate of return on one prior occasion, is that not correct?

A Yes, that's correct.

Q Did you, Mr. Muth, in that proceeding prepare a complete equity cost study, or rather was that testimony in the nature of a critique of the study prepared by the Company's consultant?

A It was more in the nature of a critique or rebuttal-type testimony.

Q Referring you to Schedule 4 of your exhibit, could you state for me the reason why you have chosen to provide as the starting point in the development of your

imbedded debt cost recommendation the Schedule attachment 2-A-6-A in Volume II of Peco Exhibit 1, rather than Schedule 10 of Exhibit JFB-1?

A Schedule Number 4, which is a copy of the Company's exhibit, indicates a cost rate as calculated by the Company. In determining imbedded cost of debt, there are various ways it can be calculated. It can be calculated on an average term of issue basis, yield to maturity, an internal rate of return basis, or it can be used on a current basis. And I think that various of these methods are employed and are acceptable.

The methods that average the interest, so to speak, to some extent may be out of step with reality because the interest rate really changes each year. The yield changes somewhat each year, and I think that this 831 as calculated by the Company is probably a more current cost, although I would admit that the difference generally is not material, whichever method is chosen, from my experience.

Q Would you agree, Mr. Muth, that the yield to maturity method of calculating imbedded debt costs gives greater reflection to the time value of money than does certain of the other -- and I believe principally the one that we've been speaking of here -- methods of imbedded debt cost computation?

A It would probably give more recognition to the

time value of money, although I think perhaps an internal rate of return analysis might be more accurate than the yield to maturity, although I doubt that the difference would be material.

Q Mr. Muth, do I understand correctly that the purpose of your equity cost recommendation is to present to the Administrative Law Judge and the Commission your opinion of the equity return required by Philadelphia Electric Company investors during the period the rates here under consideration will be in effect?

A Yes, that's correct. I am trying to make a recommendation that will be consistent with what I anticipate the economic conditions to be during that prospective year the rates will be in effect. Or perhaps you might say a year or a year and a half, depending on the timing of a new increase if one should be necessary.

Q And is it further your opinion that one of the factors that must be considered over this next year or year and a half period that you have referred to is the anticipated future inflation rate as viewed by investors?

A Most definitely, yes.

Q And is it further your testimony, Mr. Muth, that the Company should be given a fair opportunity to achieve the equity return rate which you have recommended?

A Yes, that's correct.

Q At page 7 of your prepared statement, Mr. Muth, you refer to a selection process in which you analyzed 30 of these 100 largest electric utilities in the country in order to identify these eight companies which have been included in your barometer group. Upon what basis were the remaining 70 companies out of these 100 eliminated from your consideration?

A As I state in my testimony on page 7, the basic reasons for eliminating these other companies were that some of the hundred are holding companies. Many of them were located in different parts of the country. Many of them were not of comparable size. And there were also some that had operating revenue mixes which I felt consisted -- or had too much gas revenues to be considered solely electric utilities.

They were the basic reasons.

Q Do I understand your answer to be, Mr. Muth, that in fact the factors which you mentioned in Lines 2 through 6 on page 7 were in fact the factors that you employed to eliminate the companies from the entire hundred and that you in fact analyzed the entire hundred?

A Yes. For certain basic things, such as size, operating revenue mix, location -- things of that nature -- yes.

Q And am I correct that your analysis would then go beyond to other factors for the remaining 30? Is that the

distinction?

A Yes. Well, perhaps I shouldn't say that. I think on the basis of size the great majority of these hundred were eliminated. The remaining 30 were then analyzed on the basis I have set forth on page 7.

Q Mr. Muth, how many companies did you eliminate because they did not have a Double A, A, or Baa bond rating by Moody's?

A Excuse me. Let me check my sheet here. Could I have the question again, please?

MR. HALL: Read it back, please.

(Reporter read back the last question as follows: "Mr. Muth, how many companies did you eliminate because they did not have a Double A, A, or Baa bond rating by Moody's?")

THE WITNESS: I would say I did not eliminate any companies for that specific reason. That was really not one of my major concerns as to the elimination process.

BY MR. HALL:

Q Is it not true, Mr. Muth, that in fact virtually the entire electric industry would fit into a Baa to Double A range?

A That is correct.

Q How many companies did you eliminate, Mr. Muth, as the result of their not possessing common stock ratings

by Standard & Poor's in the A minus or B+ category?

A None. Again, I did not specifically eliminate any for that particular reason. Of the top 30 there were a few that had A ratings. They did not -- the final eight that I selected did not have other than an A- or B+ rating. I did not specifically eliminate any because of the A rating.

Q Mr. Muth, I note that Commonwealth Edison is not included in the eight companies which you have included in your barometer group. Could you explain to me the reason for that Company's elimination from the barometer group?

A Basically, size. I don't think in my testimony I stated an upper limit to size, but Commonwealth Edison is considerably larger than the majority of the companies, considerably larger than Philadelphia Electric, and that was -- I think that was probably the basic reason for eliminating that one.

Q And would Commonwealth Edison's size be in the order of 7.1 billion of investor-supplied capital, which would fit under your Column two on your Schedule No. 8?

A On this particular schedule I don't have that figure. I know it's gross utility plant is in excess of $8 billion.

Q Mr. Muth, could you tell me why you eliminated Florida Power and Light from your group?

A The only reason I eliminated Florida Power and

Light was its location. I considered it basically a southern company. I tried to stick mostly to eastern companies that had at least some winter weather. Florida Power and Light would have met all the remaining criteria.

Q Finally, Mr. Muth, why have you eliminated Consolidated Edison from your consideration?

A Several reasons. Number one, again, it's somewhat larger than Philadelphia Electric. The gross utility plant is in excess of $7 billion. And as you know, Consolidated Edison has had -- has omitted a dividend in, I believe it was, 1974. And its data I do not think was reflective of utilities in general.

(Continued on page 2052.)

Q However, would you agree, Mr. Muth, that Consolidated Edison's common stock rating by Standard & Poor's and its bond rating by Moody's fit within the criteria that you have stated for that risk measurement?

A Yes, that is correct.

Q Mr. Muth, have you made any projection as to what the prime rate of interest will be at March 30, 1980?

A No, I have not. I would certainly hope that it is lower than it is now, and I would expect it to be, but at this time it is relatively uncertain.

Q Mr. Muth, to your knowledge, are the relative capital structure ratios of utility and industrial companies the same today as they were in the 1960's, if you know?

A I really don't know. I haven't analyzed back that far.

Q Would you agree, Mr. Muth, that bond interest rates are determined by investor perceived total investment risk in much the same manner as equity cost rates are determined?

A Yes.

Q Would you also agree, Mr. Muth, that companies with higher investment risks require higher equity returns in order to obtain and support equity investments?

A Yes.

Q Mr. Muth, would you agree with me that a dividend yield is computed by dividing the annual dividend

rate by an appropriate market price?

A Yes.

Q And I believe you have used an average of the high and low market price during the year.

A Yes, that is correct.

Q Would you further agree with me that an earnings/price ratio is computed by dividing annual earnings by an appropriate market price, in fact the same market price in your methodology?

A Yes, that is correct.

Q Referring to page 14 of your testimony, lines 2 and 3, do you not there state that an earnings/price ratio represents a general measurement of a firm's equity cost over time? I believe I have quoted you in the last several words of my question.

A Yes, I think it indicates the broad general measurement. I think it almost has to be used on an average basis because of some of the effects of an earnings/price ratio so I think it is a broad general measurement over time, yes, more of an average, I would say, than anything else, an average measurement of equity cost.

Q Is it not true, Mr. Muth, that the higher the earnings/price ratio, the higher the indicated equity cost of the firm involved is, and also the investment risks to which investment in that firm would be subject?

A If the earnings/price ratios are accepted on face value, I would agree with you, yes. I think I have indicated in my testimony that my analysis seems to indicate that investors do not quickly adjust to price of a stock for indicated future earnings. Several of the companies that I have analyzed which have had very good book earnings seem to carry higher earnings/price ratios than companies like, I think, for instance, Ohio Edison or PECO who have had low book earnings, and I think sometimes this can be misleading. I think it seems to be the reverse of what one would expect to find in the situation.

Q Do I understand your answer to be that to the extent in your judgment earnings/price ratios can be used as a direct measurement of equity costs, it would be true that when you had a higher earnings/price ratio you would expect to find higher investment risks?

A Again I would say you must be careful with how you use them. That is why I have indicated, I think, you almost have to average them over a period of time.

Normally you would expect higher investment risk. That does not seem to be the case at all times. So I think you have to use them carefully.

Q Referring to Schedule 10, Column 1 of your exhibit, would you agree that under your DCF analysis the higher the dividend yield, the higher the DCF indicated cost

rate, assuming an equal growth rate?

A Yes.

Q Would you agree that a high dividend yield for one company as opposed to another is the result of the fact that the dividend and/or earnings of the first company are not sufficiently attractive to investors to induce them to value the first company's stock at the same relative level to the dividend as in the case of the second company?

A Could I have that question read back, please?

(Question read.)

THE WITNESS: Yes, I think that is generally true.

BY MR. HALL:

Q Would that occur because the first company had greater investment risks than the second company?

A The price that the investor is willing to pay for a share of stock generally is a reflection of its investment risk or the difference in investment risks between firms

Q Would not your answer indicate that a high dividend yield would, as in the case of a high earnings/price ratio, normally indicate a higher investment risk?

A Yes, over a period of time I think that is true. However, I think in my one risk analysis I indicated that a high dividend yield would be attractive to investors,

and I think if you are looking at it at a point in time, a new investor coming into the market who would be concerned with income rather than growth in stocks would value a high dividend yield of a given company, even though in the long run I think a high dividend yield does perhaps indicate a fundamental weakness of a particular company.

Q You are referring to your Schedule 11 with respect to that response, and do I understand correctly that you are focusing your attention upon a new investor, is that not correct?

A Yes. I don't believe it was Schedule 11.

Q No, I believe that is an error. It was Schedule --

A 16.

Q I wish to refer to the summary of your comparative risk analysis, Mr. Muth, which I believe is on Schedule No. 11, page 1 of 1.

A That is correct.

Q And you show a dividend yield analysis and that is in the 6th line, I believe, with the backup schedule being Schedule No. 16.

A That is correct.

Q Now in this dividend yield analysis you have ascribed highest risk to a low dividend yield and lowest risk to a high dividend yield, is that not correct?

A That is correct, as I just explained, looking at a new investor coming in, looking at only that particular issue alone, I think that they would consider a high dividend yield very highly because of the income basis.

I do not show it on the schedule, but I have made a calculation reversing that particular indice assuming that a high dividend yield indicates a higher risk. It does not have an effect on my estimation of the overall risk of Philadelphia Electric.

I think on this schedule Philadelphia Electric comes out 7th. If you reverse that particular risk factor it still would come out 7th.

Q Is that true of the 1978 schedule as well?

A I believe that it would change one place. It is 5th on the 1978 schadule. If you reverse that dividend yield, assuming a high risk for a high yield, it would go to 6th in riskiness.

That particular risk analysis can be interpreted both ways. It is just a matter of the viewer, which way they would view it.

Q You would agree with me, would you not, Mr. Muth, that dividend yield does not in any way indicate the absolute dollar value of the dividend which the individual is receiving, it is only the relationship of the dividend to the market price?

A That is correct.

Q And if one was an existing investor, one could be damaged by a high dividend yield in the eventuality that that yield was produced by a reduction in market price relative to an earlier price, is that not correct?

A Could I have that question back, please?

Q Let me try and rephrase that. I think that was unclear. Now in the case of Philadelphia Electric Company, Mr. Muth, would you agree that the high dividend yield is the result of the price of the company's stock selling at less than book value?

A In the case of Philadelphia Electric I believe that would be correct, yes.

Q Would you say that is advantageous or disadvantageous to an existing investor?

A Disadvantageous.

Q Referring to your risk analysis with respect to compound growth in electric sales, which is the second from the bottom on page 1 of Schedule 11, you there indicate Philadelphia Electric to have a risk level of 2, which is a low risk level if I understand your schedule correctly, is that not correct?

A That is correct.

Q Would you agree with me, Mr. Muth, that lack of electricity demand or kilowatt hour growth would be a

factor indicating high investment risk where a utility is committed and has expended substantial money on a long-term construction program on the basis of anticipated growth?

A If it has no alternative ways of selling that power I think that would be correct.

Q Would you further agree with me that in fact Philadelphia Electric Company is in that position today?

A It appears to be, although as we know, it has sold the capacity of Salem-2. Limerick-1 and 2 I believe are scheduled for 1985 and 1987. That is several years in the future and it may be at that time if they don't need the capacity they will be able to do something similar.

So I would not be willing to give you an unqualified yes to that question.

Q Referring to your Schedule 5, Mr. Muth, do you have available or can you provide me with the earnings/price ratios at October 30, 1979 calculated in the same manner as those shown for June 30, 1979?

A What schedule was that?

Q Schedule 5, but that does not sound right.

A No, I agree. Schedule 19, I believe. What was your question again, sir?

Q Schedule 9. Could you provide for me, in the form of an additional column on that schedule, -- you see at the end of that schedule you have the column at June 30, 1979?

A Yes.

Q I would like you to provide me a column which would say at October 30, 1979, and which would be computed in the same manner as the at June 30, 1979 column.

A I can give you one at 9-30-79. I don't have October's right now. I can provide it later.

Q I will accept that. 9-30 is fine.

A Do you want me to read them off to you?

Q Yes.

A For Carolina Power and Light, 16.7. Duke Power Company, 15.9. Niagara Mohawk Power Corporation, 15.6. Ohio Edison, 10.9. Detroit Edison Company, 15.4. Long Island Lighting Company, 17.5. Pennsylvania Power & Light Company, 18.9. Virginia Electric and Power Company, 15.4. Average, 15.8. Philadelphia Electric Company, 12.98.

Q Mr. Muth, am I correct, that the DCF analysis contained in your Schedule 10 is developed from historic data as to dividend yields and earnings?

A Yes, this particular analysis is basically from historical yields, although, as you note for 1979, I have estimated a growth rate, and while I have not shown it, I think, on any schedules, I have estimated a growth rate as well as a dividend yield for the prospective year for both PECO and the barometer group. But this particular schedule is basically from historical data.

Q With respect to the historical data that you have employed, would you agree that during the five-year analysis period which is contained in Schedule 10 the stocks of PECO and the barometer groups which you have employed were selling at a market price which was less than book value.

A In most of those years, that is correct. I believe in 1977 there were four companies that exceeded book value, but I believe that was the only time during that period.

Q Bearing this fact in mind, Mr. Muth, is it your opinion that investors were satisfied with the dividend yield and growth levels obtained during this period?

A Well, these were the levels that they required based on the knowledge of the company's earnings, the regulatory situation, and all the other factors I have analyzed, so the rate of return that they require recognizes all these factors and this is my determination or estimation of what those return requirements were during those periods, given all these factors.

Q This historical data, would you not agree, Mr. Muth, is what occurred, that is in fact what the dividend yield was and what the growth was during that period, is that not correct?

A Yes.

Q How do we know that that is what investors

desired or required during that period.

A The dividend yield is determined by the price an investor is willing to pay for a share of stock. The yields that I have used here resulted from the price that the investors paid and was an indication of what they felt the future earnings and dividends were worth of each of these individual companies.

So I think it is reflective of investors' feelings during those periods.

Q That would be true with respect to the dividend yield, but the investors' expected growth rate is not necessarily in fact the growth rate that occurred during this period, is that not correct?

A The growth rates that I show in Column 2 are the actual growth rates that occurred during those periods. The first set of figures was really a five-year compound growth rate and each succeeding period was four, three, two and one. They were the actual growth rates that occurred during those periods and when combined with the actual dividend yields they provide my estimation of the total cost of equity required by the investor during those periods.

Q Have you made any additional analyses of these historical growth rates to determine to what extent they were the growth rates anticipated by investors at the

time the dividend yields that you have employed occurred?

A No, I have not made any other studies than what I have shown here. Again, as I stated previously, I think that that would have been determined by the price the investor was willing to pay.

For instance, in 1975 if he was dissatisfied with the growth rate in 1974 as actually occurred, I would suspect he would adjust that price in some manner. So I think it is intuitively considered in my calculations.

Q You have provided on Schedule 10 an estimated growth rate for 1979 of 2 percent for Philadelphia Electric Company. Where did you obtain that growth rate?

A It is basically my estimation. It may be generous. I looked at the historical growth rate over various time periods. I reviewed estimates of future growth rates by various investment surveys. They varied from .5 to 1.5.

My estimation is 2 percent based on the assumption that they will receive some additional revenues through this proceeding, and with good management they will obtain a reasonable return on their invested property.

Q I believe you indicated that the average current yield which you show is an estimated yield, is that correct?

A No, that was an average current yield.

Q That is a historical current yield?

A Yes, I believe that was at June 30.

Q Is that a spot yield, Mr. Muth?

A As I recall, that was the yield at June 30, 1979 or an average of the yields of June 30, 1979 for these companies as reported by Salomon Brothers.

Q This is Philadelphia Electric Company, so that was only one.

A That would be for Philadelphia Electric Company. Which one are you referring to?

Q 10.99 on page 1.

A That would have been, I think, the June 30 yield as reported by Salomon Brothers. I can verify that.

Q Would that be a spot yield?

A It would have been based on June 30th earnings and book value, an average of the market value during the same period, so I guess you could refer to it as a spot yield.

Q A spot yield in my lexicon indicates a relationship of earnings to a market price on a particular day.

A No, it would not be a spot yield then.

Q It would be a yield for the year ended June 30?

A Yes.

3-1

Q Mr. Muth, would you have available to you the average dividend yield over the past twelve months ended October 1979?

A Again, I would be able to give it to you for 9-30-79 for the same companies.

Q I only wish it for Philadelphia Electric Company, and I do have a value that I can give you subject to check.

A For Philadelphia Electric Company at June -- or excuse me, at September 30th, 1979, I have a yield of 12.20 per cent. That is again from Salomon Brothers Reporting Service.

Q Mr. Muth, I would like now briefly to discuss with you the mechanics which underlie your application of the Earnings-Price and DCF methodologies. Referring to page 18 of your testimony, you there show a range of earnings-price ratios, is that not correct?

A Yes.

Q And these ranges consist, do they not, of the following numbers, and I'd like to read you a list of numbers and obtain your agreement as to whether the numbers are as I have identified them or not. Referring to page 18, the first number shown is 12.15 per cent as coming from Schedule 9. That is, is it not, a two-year average, 19 being the average for 1977 to 1978 of the earnings-price ratio for the

T-3-2

barometer group?

A Yes, that's correct.

Q The second number shown is 13.48 per cent. That is, is it not, the June 30, 1979 earnings-price ratio for the barometer group?

A Yes.

Q The next number shown is 12.06 per cent, and that is, is it not, a 1977 average earnings-price ratio taken from Schedule 19 for the barometer group?

A That's correct.

Q And the final number shown is 15.25 per cent, which is, is it not, a 1975 average earnings-price ratio taken from Schedule 19 for the same barometer group?

A That's also correct.

Q Now, you have taken these values, have you not, and added the two ranges together and, in essence, divided by 2 to obtain an average? And that is what is reflected in the 12.11 and the --

A Yes, that's correct.

Q Now, referring to page 23 of your statement, you there provide a range of equity cost based upon your DCF methodology. This range consists, does it not, of the following numbers, and again I'd like to identify them and obtain your agreement as to whether I have done so correctly.

The first number is 12.34 per cent, and is that

3-3

not the barometer group's 1977 dividend yield plus the 1976 to 1978 dividend growth rate? And that's taken from Schedule 10, page 1.

MR. SEGAL: I'm sorry. That was 1976 to what year?

MR. HALL: Nineteen seventy-eight.

THE WITNESS: Yes, that's correct.

BY MR. HALL:

Q And the 14.67 per cent figure -- is that not the Philadelphia Electric Company's 1975 dividend yield plus the 1974 to 1978 dividend growth rate?

A That's correct.

Q Now, still at page 23 and referring you to lines 21 to 23, is it not correct that your recommended equity cost of 13.49 per cent can be obtained from the earnings-price and discounted cash flow equity ranges which are shown there by taking the mid point of the two ranges, adding .11 to that mid point, adding your resulting two figures together, which are the 13.35 and the 13.62, and then dividing by 2? That is the methodology that gives you the 13.49 per cent, is that not correct?

MR. SAYRE: May I have that question back, please?

(Reporter read back the last question as follows: "Now, still at page 23 and

referring you to lines 21 to 23, is it not correct that your recommended equity cost of 13.49 per cent can be obtained from the earnings-price and discounted cash flow equity ranges which are shown there by taking the mid point of the two ranges, adding .11 to that mid point, adding your resulting two figures together, which are the 13.35 and the 13.62, and then dividing by 2? That is the methodology that gives you the 13.49 per cent, is that not correct?")

THE WITNESS: I have not made that calculation. I'll accept your calculation, subject to check. I have not made the calculation of that nature.

BY MR. HALL:

Q Mr. Muth, how did you obtain, then, the 13.35 per cent, then, for the earnings-price ratio?

A Through the utilization of judgment based upon all the factors that I have set forth in my testimony, which are the particular risk of Peco as compared to the barometer group through my comparative risk analysis, my estimation of the economic conditions that will be in effect during the prospective year, basically, with concerns related to interest rates and inflation.

Q Mr. Muth, would you do the calculation to

determine whether or not the 13.35 per cent is .11 per cent above the mid point of the 12.11 to 14.36 per cent range?

A I don't have a calculator, but I see there's one here and I will use it.

Q Do you trust strange calculators?

A No. I'm not sure I'll be able to make the calculation in the manner which you set forth. How was that calculation made, again?

Q Well, add 12.11 plus 14.36, divide by 2, and then add .11.

A 12.11 plus 14.36, divided by 2, and add --

Q Point one one.

A Point one one. I don't think this calculator works. I'll have to do it by hand.

Q Do you want to borrow mine? It got the number.

(Off the record momentarily at 11:01 a.m.)

THE WITNESS: Yes, that calculation -- mathematical calculation does come out to the answer of 13.35.

BY MR. HALL:

Q And could you do the same for the 13.62 per cent indicated DCF value? Would that not also be the mid point of the DCF indicated range plus .11 per cent?

(Off the record momentarily at 11:02 a.m.)

THE WITNESS: Yes, that's correct.

BY MR. HALL:

Q And would you agree that the 13.49 per cent is the mid point between the 13.35 and the 13.62?

A Yes. It is the average of those two figures, that's correct.

Q Mr. Muth, you have testified, have you not, that Peco's investment risk is somewhat higher than the average of the barometer group, is that not correct?

A Yes, that's correct.

Q And I take it you would agree that it would follow that Peco's equity cost is somewhat higher than the average of the barometer group?

A Yes.

Q Would you agree, Mr. Muth, that 1977 and 1978 were years of low inflation and low capital costs?

MR. SEGAL: What years were those?

MR. HALL: Seventy-seven and seventy-eight.

THE WITNESS: In comparison to anything in particular? They were lower than 1974 and 1975 and were higher than 1976.

BY MR. HALL:

Q In comparison to the average during the five-year analysis period which you have provided.

A Yes.

Q Conversely, Mr. Muth, would you agree that 1975

and 1979 are years of high inflation and unsettled capital markets?

A Yes.

Q Referring you to Schedule 11, Mr. Muth -- Schedule 10, excuse me, page 1, would you agree that the average DCF indicated equity cost for Peco for the average of the periods that you have provided as shown at the bottom of the second series of columns -- Column 6 is the specific one -- is 13.43 per cent?

A Yes.

Q Am I correct that that has been determined, Mr. Muth, by summing the figures above it and then dividing by the appropriate number?

A Yes, that's correct.

Q Mr. Muth, at page 24, Lines 21 to 23, of your prepared statement you encourage the Administrative Law Judge and the Commission to consider a lower cost of equity allowance for Peco than that which you recommend, should the economy show greater improvement than you anticipate prior to the time of the respective decisions of those eminent bodies.

Conversely, do you also recommend that there be considered a greater equity allowance should indicated cost rates increase during that period?

A Yes. If the economy or the duration of our

present unsettled conditions -- it looks like these are going to continue for an extended period of time, and I would encourage a higher cost of equity if all other things indicate that it should be higher.

MR. BURGRAFF: May I have the last part of that answer, please? I couldn't hear it.

(Reporter read back the end of the last answer as follows: "...and I would encourage a higher cost of equity if all other things indicate that it should be higher.")

BY MR. HALL:

Q Referring to pages 26 to 27 of your prepared statement, Mr. Muth, you there recommend that the Commission should adjust your recommended return level downward proportionately to the extent that the Commission employs a fair value rate base in excess of original costs. Would you agree that the practical effect of this recommendation is to render the Commission's fair value finding without any effect or meaningless as regards its finding of net utility income and, ultimately, the rates in this proceeding?

THE WITNESS: May I have that question repeated, please?

(Reporter read back the last question as follows: "Referring to pages 26 to 27 of your prepared statement, Mr. Muth, you

there recommend that the Commission should adjust your recommended return level downward proportionately to the extent that the Commission employs a fair value rate base in excess of original costs. Would you agree that the practical effect of this recommendation is to render the Commission's fair value finding without any effect or meaningless as regards its finding of net utility income and, ultimately, the rates in this proceeding?")

THE WITNESS: Well, the practical effect would be to provide a fair return as determined in the marketplace if they accept my recommendation.

BY MR. HALL:

Q And I take it an additional practical effect would be to provide the same dollar income to the utility regardless of what the Commission's fair value finding would be?

A That dollar income that I've recommended is a result of my analysis of investors' expectations of equity cost, as well as imbedded cost --

Q Mr. Muth, I don't want to cut you off, but I don't think you're answering the question at all, and the question's very simple.

MR. SAYRE: Your Honor, I object to the witness'

answer being cut off, and I would request that he be permitted to finish.

MR. HALL: I haven't heard an answer to the question yet. If he wishes to explain it once he answers the question, that's fine.

THE ADMINISTRATIVE LAW JUDGE: Perhaps he could do both.

THE WITNESS: The practical effect -- well, perhaps you should ask the question again.

MR. HALL: Could we have the question re-read?

(Reporter read back the last question as follows: "And I take it an additional practical effect would be to provide the same dollar income to the utility regardless of what the Commission's fair value finding would be?")

THE WITNESS: My recommendation would produce a given level of income. That level of income would not necessarily change, regardless of what rate base in excess of O.C. is found by the Commission.

BY MR. HALL:

Q In other words, the income would be the same regardless of what the fair value finding would be?

A Based on my recommendation, yes.

Q Mr. Muth, in your position as supervisor of the Rate of Return Section of the Bureau of Rates, did you

review at any time during the course of this proceeding any development of Peco's equity cost based on the Capital Asset Pricing Model?

A No, I have not.

MR. HALL: Your Honor, that's all the questions I have.

THE ADMINISTRATIVE LAW JUDGE: Let's take a ten-minute recess.

(The recess began at 11:11 a.m.)

(Continued on page 2075.)

THE ADMINISTRATIVE LAW JUDGE: Mr. Burgraff, do you have any questions?

MR. BURGRAFF: No, the Consumer Advocate has no questions of this witness, Your Honor.

THE ADMINISTRATIVE LAW JUDGE: Mr. Segal?

MR. SEGAL: No questions.

MR. SAYRE: I have a brief amount of redirect, Your Honor.

REDIRECT EXAMINATION

BY MR. SAYRE:

Q Mr. Muth, do you recall stating on cross-examination that although your figures in your testimony with respect to yield and growth rate under the DCF method were based on historical data, you also have made a calculation of what you estimate for the period which the rates will be in effect?

A Yes, that is correct.

Q Could you please state what your estimate is for the barometer group?

A I did not specifically state in my testimony, but my recommendation of 13.49 really considers for the barometer group an estimate of approximately 10.5 percent dividend yield in that prospective period and approximately 3 percent growth rate.

For PECO as compared to the barometer group during that prospective period I would estimate that their dividend yield will probably range in the area of 11½ and their growth rate would be approximately 2 percent during that prospective period. That is what investors would anticipate it would be during that prospective period.

Q You were asked whether you made an analysis of what growth rate was expected by the investors in the historical periods you considered. Do you have any idea how such an analysis could be made?

A No, I really don't, and if anyone has such analysis or knows how it would be made, I would certainly appreciate seeing a copy of it.

Q In response to cross-examination by Mr. Hall you provided a figure of PECO's dividend yield for the year ended September 30, 1979. Do you expect that figure to remain at that level for the prospective period during which the rates will be in effect?

A No, I do not. As I just indicated, in my estimate of 13.49 cost of equity for PECO I would anticipate that their dividend yield would be in the area of 11½ percent during that prospective period. That estimate is based on an improvement in both the historical high interest rates and inflation which we are now incurring.

MR. HALL: Could I have that question and

answer read again, please?

(Question and answer read.)

BY MR. SAYRE:

Q Could you turn to page 18 of your testimony. You have explained on cross-examination how you got the specific figures from Schedule 9 and Schedule 19 to Mr. Hall, or rather what those figures were. Can you explain why you chose those particular figures that you used on the top of page 18 that you have used there? On what basis did you select them from the two schedules?

A Those figures are simply the high and low ranges of equity costs for the period which I have analyzed. I did not pick them because they relate to a specific year. It was just to set a particular range of equity cost during the period to show that does fluctuate during the periods of high inflation and periods of prosperity.

Q On page 23 of your testimony you have also explained to Mr. Hall where the figures for discounted cash flow on line 22 came from on Schedule 10. Can you also elaborate as to how you chose the particular figures that you chose to use from Schedule 10?

A The answer would be the same, that I just simply chose the high and low values of equity costs during that time period, again to show the range of equity costs

during different periods of the business cycle.

Q Also on page 23, lines 21 and 22, did you calculate the 13.35 percent and 13.62 percent figures by taking the midpoint of the respective equity range and then adding .11?

A No, I did not make that calculation except upon request of Mr. Hall.

Q How did you come up with the 13.35 and 13.62 percent figures?

A Basically, again, it was made on judgment of all the factors I have analyzed during this case, PECO's risk relative to the barometer group as measured by my comparable risk analysis and also my estimation of the economic conditions that are presently prevailing and which will prevail in the future.

Q Can you now explain why you recommend the same dollar amount of return on fair value debt as compared with the portion of original cost that is debt?

A Well, I think the reason would be obvious. The long-term debt and preferred stockholders have agreed to receive a certain amount. It is a contractual amount that PECO is required to pay, and there would be no reasonable basis for paying them any more than that contractual amount.

Perhaps I can give an example of how an investor could be over-compensated if these embedded rates

were applied to a value other than the investment made by the investor.

Let's assume an individual went into business and he borrowed 50,000 from the bank and the banker was very future oriented, and he said, all right, I will loan it to you for a given amount, the interest rate will be tied to inflation, therefore I will be paid for loaning you the money.

Let's assume maybe 10 years down the road the banker notices that the value of that plant has doubled or the value of that investment has doubled, basically because of inflation, and he writes to the individual who he has loaned the money and he says, look, I want you to start paying me an interest rate on double the amount of the debt because it is now worth double the amount what it was when I loaned it to you.

Well, obviously I think the banker could be granted a very good imagination but I think he would be rather foolish to expect that he would be getting paid on an amount of money that he has not advanced.

Q Can you also explain why you recommend the same dollar amount of return on fair value equity as opposed to the portion of original cost rate base financed by equity?

A Again, it would be for the same reason. The investor expects a return on the amount of money he has invested in the stock of the company. That return is determined

by many things -- inflation, interest rates -- the risk analysis that I have shown in my testimony.

If the return I recommend based on my analysis of a market required cost is applied to any other value than the book value or the original cost amount, it is going to over-compensate that investor.

For example, let's assume that today every share of stock that PECO has changes hands, that none of the old investors are remaining. Whenever the investors that purchased that stock determined how much they were going to pay for the price, they would have considered current inflation and predominantly prospective inflation as well as many other factors, that would have determined what price they would have set in the marketplace, and they would only expect to be reimbursed to the extent of their investment that they had made.

If that determined return or cost that they would require would be applied in a rate-making function to some other basis other than original cost, the investor would be over-compensated for an amount of dollars which he never expected to receive nor deserves to receive.

Q If you were, on the other hand, to assume that all of PECO's shareholders bought their stock 10 years ago, at the time of that decision, in your opinion, what types of inflation would the investors have taken into account?

A At that time period as well as every time period before or since that an investor purchased stock he would have considered prospective inflation in the amount he would have required as a return on his investment.

MR. SAYRE: I have no further questions, Your Honor.

MR. HALL: I have some recross, Your Honor.

RECROSS-EXAMINATION

BY MR. HALL:

Q Mr. Muth, the DCF analysis which you gave in response to counsel's questions indicating a 13.5 percent cost rate for both the barometer and for PECO: could you indicate for me where in your exhibits or testimony that analysis is provided?

A I believe I indicated that those specific figures were not indicated in my testimony. Intuitively in my recommended rate of 13.49 I would anticipate a yield to the barometer group during that prospective period of 10.5 and an estimated growth of about 3 percent.

Looking at PECO alone I would anticipate a yield in the area of 11.5 and a growth of 2 percent.

So it was not stated in my testimony. Intuitively in my calculation.

Q In other words, Mr. Muth, this is an additional

basis for your equity cost recommendation which you did not see fit to put forth in your initial prepared statement?

A It was not stated in my testimony in those particular terms, that is correct.

Q Could you state for me the basis of your estimation that PECO's dividend yield during the next year to, say, 18 months would be 11.5 percent?

A Again, it is based on my review of prior similar periods such as 1974 and 1975, my estimation of the duration of our present unsettled conditions, my estimation of future interest rates and inflation rates.

Q Could you state precisely what you relied upon in making these estimations?

A Well, I reviewed a number of projections made by economists as far as the future inflation rates. I can quote that source. We receive a statistical bulletin from the Conference Board, which is an independent nonprofit business research organization which has existed for approximately 60 years. In their recent bulletin they have summarized the economic forecast of eight major economic forecasters.

For the year 1979 the average of these eight economic forecasters has estimated that the inflation rate -- this is based on the implicit price deflator of GNP rather than the Consumer Price Index -- they have estimated 9 percent for 1979 and for 1980 they have estimated 8.4 percent.

Q Would you agree with me --

MR. SAYRE: Your Honor, I would request that the witness be asked if he is finished.

THE WITNESS: I am sorry, I was going to say in revieving these forecasts, of the eight a number of them have indicated that they expect the decrease in the gross national product to turn around in approximately the second quarter of 1980, some of them have estimated the first quarter.

This particular sheet I have is based on August figures. I am not sure whether they have updated these forecasts.

Based on a summary of these economic forecasts as well as other data I have read, that is how I determined my estimate of dividend yield, dividend growth for the prospective period.

BY MR. HALL:

Q Could you state for me when this particular forecast that you have stated was made?

A The one that I just quoted from was made in August. As I recall, we just received the updated one in November, on November 15th. I don't think that these figures have changed materially.

This is based on September, 1979, and the inflation as determined by the implicit price deflator is

estimated to be 9 percent for 1979 and 8.4 percent projected for 1980.

So the forecast has increased slightly, I believe, for 1979 and remained about the same for 1980.

Q Are you aware, Mr. Muth, of other economic projections other than the one that you have mentioned which estimate higher and longer continuance of double digit inflation rates into the future?

A No. This is basically what I relied on. As I say, it is a summary of eight major economic forecasters. I will be glad to give you the names of these organizations if you like.

Q No, I am aware of what they are. I note that in your new analysis, Mr. Muth, you have determined a 13.5 percent equity cost for both PECO and the barometer group, is that not correct?

A Yes, that is an approximate figure. I think my initial recommendation was 13.49 and to make it simple, for purposes of this discussion, I made it 13.5.

But my 13.49 is still my recommendation before adjustment for flotation costs.

Q That is despite the fact that you have previously testified that PECO's equity cost rate is higher than the barometer group?

A Yes. When I determined my final recommendation,

where it should fall within that particular range, I took in consideration that PECO's risk is somewhat higher than the average of the barometer group.

MR. HALL: Your Honor, that is all the questions that I have.

MR. SAYRE: I have one final re-redirect, Your Honor.

BY MR. SAYRE:

Q Mr. Muth, are you aware of any forecasts anywhere of double digit inflation in 1980 that are based on the implicit GNP deflator as opposed to the Consumer Price Index?

A I am not aware of any.

MR. SAYRE: That is all, Your Honor.

MR. HALL: I will ask the follow-up question.

BY MR. HALL:

Q Are you aware of any that are based upon the Consumer Price Index, Mr. Muth?

A The most recent figures that I can recall -- and I think this was probably in yesterday's Wall Street Journal -- estimated in the range of 9.3 for the Consumer Price Index for 1980. I have not done a lot of research relative to the Consumer Price Index. I don't specifically know of any double digit figures for the Consumer Price Index.

MR. HALL: Thank you, that is all I have, Your Honor.

THE ADMINISTRATIVE LAW JUDGE: Does any other party have any questions for this witness?

(No response.)

MR. HALL: Your Honor, I have one other thing before we break up. I had indicated, I believe last week, that the company would have certain additional accounting materials to distribute at this time. I have those and will distribute them to the opposing parties. They involve basically certain adjustments which the company believes to be appropriate to reflect current conditions as they impact upon the company's accounting presentation.

MR. SAYRE: Am I correct that Mr. Williams sponsors this exhibit?

MR. HALL: Different witnesses sponsor the the different adjustments. Mr. Williams sponsors two of them, Mr. Rimerman sponsors one, and Mr. Carroll sponsors one.

MR. SAYRE: Could we go off the record for a moment, Your Honor?

THE ADMINISTRATIVE LAW JUDGE: Off the record.

(Discussion off the record.)

THE ADMINISTRATIVE LAW JUDGE: If there is

nothing further, this hearing will stand adjourned until Monday, November 26 at 10:00 a.m. in Philadelphia.

- - - - -

(The hearing was adjourned at 11:46 o'clock a.m.)

- - - - -

I hereby certify that the proceedings and evidence are contained fully and accurately in the notes taken by me during the hearing of the within cause, and that this is a true and correct transcript of the same.

MOHRBACH & MARSHAL, INC.

By Deborah K. Hickey
Deborah K. Hickey

By James P. O'Hara
James P. O'Hara

11-21-79

(The foregoing certification of this transcript does not apply to any reproduction of the same by any means unless under the direct control and/or supervision of the certifying reporter.)

Date

Trial Staff Statement No. DHM-1
Witness: D. H. Muth

Pennsylvania Public Utility Commission

vs.

Philadelphia Electric Company
Docket No. R-79060865

Direct Testimony

of

Donald H. Muth

Concerning

Fair Rate of Return

Summary of Recommended Fair Rate of Return

Recommended Fair Rate of Return Applicable to a Rate Base which Consists Solely of Historical Costs

Type of Capital	Ratios %	Cost Rate %	Weighted Cost %
Long-Term Debt	52.2	8.40	4.38
Preferred Stock	12.8	7.78	1.00
Common Equity	35.0	13.63	4.77
Total	100.00		10.15

Recommended Range of Cost of Equity and Fair Rate of Return Applicable Solely to Staff Recommended Rate Base Containing Some Measure of Current Costs

Staff Recommended Rate Base Range	Applicable Cost of Equity Range	Applicable Fair Rate of Return Range
$2,889,000,000	8.63 %	8.40%
to	to	to
$2,828,000,000	9.14 %	8.58%

Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A. My name is Donald H. Muth. I am Supervisor of Rate of Return and Taxes, Finance Division, Bureau of Rates, Pennsylvania Public Utility Commission. My business address is Room 210, North Office Building, Harrisburg, Pennsylvania, 17120.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE IN THE UTILITY INDUSTRY OR IN UTILITY REGULATION.

A. This information is summarized in Appendix A of this Statement.

Q. HAVE YOU PREVIOUSLY PRESENTED TESTIMONY BEFORE THIS COMMISSION?

A. Yes. I have offered testimony in the following cases:

R.I.D. No. 426, Arco Pipeline Company

R.I.D. No. 444, Shenango Valley Water Company

R-77090464, Western Pennsylvania Water Company, Butler District

R-77090462, Mid-Penn Telephone Corporation

R-78010545, Peoples Natural Gas Company

R-78050616, Dauphin Consolidated Water Company

R-78100686, Blue Mountain Consolidated Water Company

The testimony which I have presented in these cases related primarily to state and federal income tax issues with the exception of the Blue Mountain Consolidated Water Company case in which I presented testimony concerning the cost of equity and fair rate of return.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CASE?

A. I am responsible for recommending a cost of capital and fair rate of return which Philadelphia Electric Company should be afforded an opportunity to earn during the prospective period its rates will be in effect.

Q. WHAT CONSTITUTES A FAIR AND REASONABLE OVERALL RATE OF RETURN AND HOW IS IT DETERMINED?

A. A fair and reasonable overall rate of return is one which will allow the utility to recover its costs of all classes of capital used to finance the rate base during the prospective period which rates will be in effect. In this case the capitalization is made up of three components; long-term debt, preferred stock, and common equity. It is first necessary to determine the proportion of each type of capital which has financed the rate base and assign a cost-rate to each. The costs of long-term debt and preferred stock are fixed and can be computed accurately. The cost of common equity is much more difficult to measure. It must be determined through financial and economic analysis of market-related factors which impact on investors expectations during various business cycles of our economy. The determination of common equity costs requires the analysis of historic and current financial and economic data as well as prospective estimates of inflation rates, interest costs, and the state of our economy in general. A proper matching of costs to the business cycle is necessary to provide a cost of equity recommendation which will allow the utility an opportunity to earn a satisfactory return. Management's efficient pursuit of earning

that return will preserve its financial soundness and permit it to compete for new capital in the marketplace with companies of comparable risk.

Q. HAVE YOU PREPARED AN EXHIBIT WHICH SUMMARIZES YOUR OVERALL RATE OF RETURN RECOMMENDATION?

A. Yes. Exhibit No. DHM-1A, which has been prepared by me or under my supervision, includes schedules which summarize my recommended overall rate of return and presents the financial and economic factors which I have analyzed to arrive at my recommendation.

Q. WHAT CAPITAL STRUCTURE HAVE YOU UTILIZED TO DETERMINE YOUR OVERALL RATE OF RETURN RECOMMENDATION?

A. Schedule No. 3, which is a reproduction of Philadelphia Electric Company's (PECO's) Attachment II-A-1c, presents the Company and System capital structures at March 31, 1979 and March 31, 1980 with and without short-term debt. I will use PECO's capital structure at March 31, 1980 of 52.2% long-term debt, 12.8% preferred stock, and 35% common equity in order to be as prospective as possible.

Q. WHAT COST RATE DO YOU RECOMMEND FOR APPLICATION TO THE 52.2% LONG-TERM DEBT PORTION OF PECO'S CAPITAL STRUCTURE?

A. Schedule No. 4 is a reproduction of PECO's Attachment II-A-6a, 2 of 2 which presents the Company's weighted effective cost of debt at March 31, 1980. The Company has calculated its weighted average cost of debt on a current yield basis to be 8.31%. On this

schedule PECO had estimated a rate of 10.25% for the $100,000,000 of bonds which it sold in October, 1979. Mr. Paquette testified that these bonds were actually issued at an effective cost rate of 12.62%.

In response to the filing requirements, PECO has supplied Attachment II-A-6c, Sheet 1 of 2 which indicates that it has received substantial gains through the reacquisition of long-term debt. Since the ratepayers have previously paid for this debt through their cost of service, it is my opinion that a representative portion of this gain should be used to reduce the weighted effective cost of debt in this case. On page 2 of Schedule 4 I have summarized the calculation of my recommended cost rate for long-term debt of 8.40% which considers the 12.62% cost rate of the new bond issue and the gain on reacquired debt.

Q. WHAT COST RATE DO YOU RECOMMEND FOR APPLICATION TO THE 12.8% PREFERRED STOCK PORTION OF PECO'S CAPITAL STRUCTURE?

A. Schedule No. 5 is a reproduction of PECO's Attachment II-A-6b, 2 of 2 which presents the Company's effective cost of preferred stock at March 31, 1980. PECO has also received gains from redemption of its preferred stock as shown on Attachment II-A-6c, Sheet 2 of 2. Mr. Paquette has testified that these gains were not used to reduce the cost of service in this rate filing. For the same reasons stated above relative to long-term debt, I have used a representative portion of these gains to reduce the effective cost rate of preferred stock. My recommendation for the effective cost rate of preferred stock to be used in this case is 7.78% as summarized on page 2 of 2 of Schedule 5.

Q. WHAT IS YOUR RECOMMENDATION FOR COST OF COMMON EQUITY TO BE ALLOWED IN THIS CASE AND WHAT APPROACH HAVE YOU USED TO DETERMINE IT?

A. My recommendation for the cost of common equity to be applied to the portion of the rate base financed by common equity capital is 13.63%.

I have performed my cost of common equity analysis using several methods. They are the Earnings/Price Ratio Method and the Discounted Cash Flow (DCF) Method. I have used each of these methods to determine a market-based cost of equity capital for PECO and a barometer group of eight electric utilities of similar size located in the Eastern part of the United States.

I have supplemented these two methods through the use of comparative risk analysis. My risk analysis is not used as an independent method of determining the cost of equity but rather to determine where the investor would perceive PECO's cost of common equity would fall within a range of equity costs. I have combined my comparative risk analysis with economic analysis to determine a cost of equity capital which will be consistent with the business cycle during the prospective period PECO's rates will be in effect. If a cost of equity is based on financial analysis of data extracted from a period during which the business cycle was at a peak, it could be severly overstated during a trough or recessionary period. Conversely a cost rate set during a recessionary period could substantially overstate the cost of equity during a peak or period of prosperity.

Q. WHY HAVE YOU INCLUDED A BAROMETER GROUP OF EIGHT ELECTRIC UTILITIES AS PART OF YOUR ANALYSIS?

A. There are several reasons for using a barometer group of companies in rate of return analysis. Since the cost of equity is set in the marketplace it is necessary to use market-based data. There are many instances where the company for which a cost of equity is being determined is part of a holding-company system or does not have common stock that is traded in the market-place. Under these circumstances it is necessary to choose a group of companies as a surrogate to determine the cost of equity capital. In this situation, it is imperative that the companies selected be as similar as possible in size and risk characteristics.

In the case of Philadelphia Electric Company, it has common stock that is actively traded. In this situation a barometer group is used as a benchmark to satisfy the long established regulatory guideline of providing a utility the opportunity to earn a return equal to that of similar risk enterprises.

Q. WHAT UTILITIES HAVE YOU SELECTED FOR FINANCIAL COMPARISON TO PECO?

A. On Schedule No. 8 I have listed the eight utilities which I have selected together with a summary of my selection criteria as it pertains to each company.

In selecting this barometer group, my major concerns were that they be located in the Eastern part of the United States, be of similar size within a reasonable range, have similar common stock ratings and have a sufficient portion of their operating revenues generated by the sale of electricity to be considered primarily electric utilities by investors.

During the selection process I had analyzed 30 of the 100 largest electric utilities in the country. The majority of these utilities were eliminated because they were either holding companies, were located in a different part of the country, were not of comparable size or had an operating revenue mix which contained insufficient electric revenues.

Q. SCHEDULE NO. 8 INDICATES THAT OF THE EIGHT COMPANIES WHICH YOU HAVE SELECTED, TWO HAVE BOND RATINGS OF Aa, FIVE ARE RATED A AND ONE IS RATED Baa. ISN'T IT NORMAL PROCEDURE TO SELECT A BAROMETER GROUP WITH IDENTICAL BOND RATINGS?

A. If a barometer group is used as a surrogate for a company whose common stock is not publicly traded then an attempt should be made to select companies which are as similar as possible including having similar bond ratings. However, since I have conducted a comparative risk analysis to determine how investors view PECO in comparison to the barometer group companies, the lack of identical bond ratings is not critical to my analysis.

Q. HAVE YOU COMPARED PECO TO ANY COMPANIES OTHER THAN THE BAROMETER GROUP?

A. Yes. I have compared PECO and the barometer group companies to Moody's 24 electric utilities as well as the 100 largest electric utilities in the country using various financial ratios and indices. My analysis indicates that, on the average, the barometer group as well as PECO have higher investment risks.

Q. WHAT ECONOMIC ANALYSIS HAVE YOU PERFORMED AND HOW DOES IT IMPACT ON YOUR RECOMMENDATION?

A. I have reviewed the business cycle in the United States for the period 1969 to the present with special emphasis on the 1973 to present period. My analysis included inflation rates, interest rates and equity costs relative to the various phases of the cycle. According to the Bureau of Economic Analysis of the U.S. Department of Commerce as reported in the Business Conditions Digest, December, 1969 and November, 1973 represented peaks in the business cycle. March, 1979 was apparently the peak of the present cycle.

On Schedule No. 6, interest rate trends for various ratings of industrial and utility bonds are shown. Schedule No. 7 indicates the inflation rates for the period 1969 to present. During the 1974-1975 period, inflation and interest rates reached a peak. They declined during 1976-1977 and have trended upward thereafter. We are presently experiencing a period of economic weakness with record high interest and inflation rates. The present bank prime interest rate stands at 15.0% and inflation exceeds 13.0% on an annual basis. Economists cannot agree whether we are still sliding into a recession or whether we are near the bottom. It is very difficult to predict at this time whether interest and inflation rates will moderate slowly through 1980 or fall sharply from their present extreme levels.

Economic predictions indicate that inflation may still approach 9% through 1980, and while interest rates will moderate, they will remain higher than normal through this period. My cost of equity

recommendation is based upon an improving but still troubled economy during the prospective period rates will be in effect.

Q. WHAT IS INVESTMENT RISK AND HOW IS IT AFFECTED BY THE PRESENT ECONOMIC CONDITIONS WITH REGARD TO UTILITIES?

A. Investment risk is the total risk of a firm as perceived by the investor and is reflected in the price he is willing to pay for a share of stock in the market-place. Investment risk consists of business risk and financial risk. Utilities are generally considered to have less business risk than industrials primarily because of the inherent differences between competitive and monopolistic enterprises.

Financial risk results from the amount of fixed obligations (debt and preferred stock) or leverage which a firm employs in its capital structure. Debt and preferred stock carry contractual guarantees which must be met before a return can be paid to the common stockholder. Utilities have historically utilized more leverage than industrial firms. Since management will normally utilize a capital structure which maximizes its long-term profit potential while maintaining its financial safety, the amount of leverage employed is an indication of the business risk of a company.

The utility industry is very capital intensive and thus is very sensitive to the economic conditions in the capital markets resulting from high inflation and interest rates. Because of the higher degree of leverage employed, utility bonds have historically carried a higher cost rate than the same grade industrial bonds as demonstrated on Schedule No. 6. The spread between utility and

industrial bonds also tends to increase during periods of high inflation as demonstrated by this schedule.

Q. PLEASE EXPLAIN YOUR COMPARATIVE RISK ANALYSIS AND HOW IT AFFECTS YOUR COST OF EQUITY RECOMMENDATION.

A. I have selected 15 of the major financial indices and ratios which would be considered by investors in utility stocks and developed a risk ranking for each of these comparisons in order to measure the financial strength and quality of earnings of PECO as compared to the barometer group companies. I have made this analysis on a five-year average basis as well as on a more current basis for the calendar year 1978. I have also used prospective estimates for certain comparisons where they are readily available.

Schedules 13 through 25 are comparisons made primarily on the basis of a five-year average performance. Schedule No. 26 consists of comparisons made primarily on calendar year 1978 data or are prospective estimates as noted. Based on my analysis I have assigned a risk ranking to PECO and each of the barometer group companies for each of the risk comparisons for both periods. On Schedule No. 11 I have summarized the risk rankings of each of the barometer group companies and PECO to arrive at an overall risk rating. Schedule No. 12 is a summary of the risk rankings for the calendar year 1978 and prospective periods. In the construction of my risk analysis, each of the risk comparisons have been weighted equally for both periods. However, in the final analysis, subjective judgment is required since the differences between companies for some of the ratios and indices are minor and might not material effect an investor's judgment of risk.

I have used my comparative risk analysis to determine where, within a range of equity costs, PECO's cost of common equity would fall.

Q. WHAT ARE THE RESULTS OF EACH OF YOUR COMPARATIVE ANALYSIS AND WHAT CONCLUSIONS HAVE YOU REACHED CONCERNING PECO'S INVESTMENT RISK?

A. Schedule No. 13 is a comparison of the five-year average common equity ratios. The common equity ratio is an indication of the amount of leverage employed by a company and is a reflection of its financial risk. PECO's five-year average was slightly higher than the five-year average of the barometer group. However, the amount of equity capital employed by the barometer group companies has trended upward during the five-year period while PECO's has remained relatively stable. At the end of the calendar year 1978, PECO's common equity ratio was 34.4% as compared to an average of 36.0% for the barometer group reflecting a higher risk for PECO.

Schedule No. 14 is a comparison of returns on average common equity for the period 1974-1978. The earnings on book must be viewed along with the common equity ratios since a lower common equity ratio reflects greater risk and therefore requires a higher return. However, as demonstrated by Schedule No. 13, PECO's five-year average common equity ratio was not materially different than that of the barometer group so the earnings on book as shown on Schedule 14 can be viewed in a comparative manner. An analysis of Schedule 14 shows that PECO's earnings have remained stable over the five-year period but have been significantly lower than the average of the barometer group in every year. These lower earnings are a reflection of greater risk in the eyes of the investor.

Schedule No. 15 consists of three pages and is a comparison of the various interest coverage ratios experienced by PECO and the barometer group over the five-year period. Actual achieved interest coverages are a measure of the protection afforded an equity investment. It is also one of the measures used by rating agencies in determining the safety of debt obligations. An analysis of total fixed charge coverage (interest and preferred stock) is also important since some utilities employ a higher than average amount of preferred stock in their capital structure and the analysis of debt interest coverages may not provide a true test of their financial stability. When analyzing coverages, the trends in interest coverage are given substantial consideration. While PECO's five-year average pre-tax interest coverage was higher than the average for the barometer group, it has experienced a downward trend since 1974 while the barometer group has shown an upward trend. PECO's after-tax interest coverage and fixed charge coverage has remained relatively stable over the period while the barometer group on average has shown an upward trend. PECO would be considered as a higher risk investment as compared to the barometer group on the basis of its interest coverage ratios.

Schedule No. 16 compares the dividend yields of PECO and the barometer group over a five-year period. As shown by this schedule, PECO's dividend yield has been consistently higher than the average of the barometer group companies. While it could be argued that PECO's consistently high dividend yield is a sign of fundamental financial weakness when viewed in context with its dividend payout

ratio, I believe today's investors in utility stocks are very dividend yield conscious and would look upon it favorably when considering PECO's stock as an investment opportunity.

Schedule No. 17 indicates that PECO's dividend payout ratio has substantially exceeded that of the barometer group during the five-year period and approached 100% during 1978. My analysis does not indicate that investors are overly concerned with high dividend payout ratios as long as the dividend yield remains high. However, a high dividend payout ratio maintained for an extended period would have to result in an assessment of higher risk by the investor if for no other reason than the constant need to compete in the market for capital because of the lack of internal funds. I view PECO as having a higher risk than the barometer group companies with respect to dividend payout ratios.

Schedule No. 18 is an analysis of market to book ratios for PECO and the barometer group companies for the period 1974-1978. PECO's market to book ratios compare favorably with those of the barometer group companies over the five-year period and exceeded the average in 1977 and 1978. Considering both the historic five-year period and its calendar year 1978 performance, I consider PECO's risk similar to that of the barometer group.

Schedule No. 19 summarizes the earnings/price ratios of PECO and the barometer group companies. Earnings/price ratios are the reciprocal of the price/earnings ratio which reflect the number of dollars an investor is willing to pay for each dollar of earnings. Investors will bid the price of a company's stock to a level that will produce a price/earnings ratio commensurate with the risks of the company. The

earnings/price ratio is referred to as the capitalization rate in financial theory and can be considered a general measurement of a firms equity costs over time. PECO's earnings/price ratios have been significantly lower than those of the barometer group during the five-year period. Theoretical, this would reflect a lower risk for PECO as compared to the barometer group.

Schedule No. 20 is an indication of the proportion of construction expenditures which have been financed with internally generated funds. A high proportion of internal cash generation to construction expenditures is looked upon favorably by investors since it demonstrates that a utility does not have to rely as heavily on the capital markets for its financing. For the five-year period 1974-1978 PECO's internally generated funds averaged approximately the same as those of the barometer group companies for which such information was readily available. On page 2 of Schedule No. 20 is shown an estimate of construction expenditures to gross utility plant and internal cash generation to construction expenditures for the years 1979 to 1981. These projections indicate that PECO will be in a significantly better position than the barometer for the next several years relative to its construction program, reflecting a lower investment risk.

Schedule No. 21 compares PECO's ratio of allowance for funds used during construction as a percentage of income available for common equity to that of the barometer group. AFUDC represents a future generation of revenues but provides no current cash flow. This ratio is a measurement of the quality of earnings of a company. A high ratio of AFUDC to income available for common shareholders reflects a low quality of current earnings. PECO's quality of earnings has been

somewhat lower than that of the average of the barometer group during the five-year period and was about equal to that of the barometer group during the calendar year 1978.

Schedule No. 22 compares the effective tax rates of PECO and the barometer group companies. High effective tax rates are assumed to reflect a better quality of earnings. PECO's effective tax rates have been materially higher than the average of the barometer group during the five-year period and reflect a lower investment risk.

Schedule No. 23 compares PECO's electric generation by fuel mix with that of the barometer group companies. In my view, investors presently view oil and nuclear as the higher risk generation because of the volatility of oil prices and the media coverage given to the Three-Mile Island incident and nuclear-waste storage problems. As shown by this schedule, PECO's risk is higher than that of the barometer group average.

Schedule No. 24 is a comparison of compound growth rates in Kwh sales for PECO and the barometer group. A high rate of sales growth will provide increasing revenues. However, it also means the need to build additional high cost utility plant. In today's economic and regulatory environment I view a high sales growth as reflective of higher risk. PECO's growth rate has been substantially less than that of the barometer group during this five-year period.

Schedule No. 25 is a risk ranking based on regulatory environment. Today's investors are very much aware of the returns allowed by regulatory agencies and particularly their consistency in allowing such returns. Based on Salomon Brothers ratings of regulatory agencies as shown on page two of Schedule 25, PECO's regulatory risk is slightly higher than that of the average of the barometer group companies.

Q. WHAT IS YOUR CONCLUSION CONCERNING PECO's INVESTMENT RISK AS COMPARED TO THE BAROMETER GROUP?

A. After analyzing risk comparisons on a historic, current and prospective basis I conclude that PECO's investment risk is somewhat higher than the average of the barometer group.

Q. YOU HAVE PREVIOUSLY STATED THAT YOU USED THE EARNINGS/PRICE RATIO METHOD AND THE DISCOUNTED CASH FLOW (DCF) METHOD TO DETERMINE A COST OF EQUITY IN THIS CASE. WOULD YOU EXPLAIN THE EARNINGS/PRICE RATIO METHOD AND THE RESULTS ACHIEVED THROUGH USE OF THIS METHOD PLEASE?

A. The earnings/price ratio is the reciprocal of the price/earnings multiple and is known as the capitalization rate in financial theory. In theory, future earnings prospects and stability of earnings will attract investors and increase the demand for a particular stock relative to its available supply thereby increasing the market price and lowering the earnings/price ratio. On this basis, the earnings/price ratio is one index of economic strength which is easily accessible to a potential investor. From a practical standpoint, however, future earnings prospects do not always appear to immediately effect the price of utility stock. This may result from the fact that utility investors are primarily "buy and hold" investors interested in dividend yield.

Analysis of the earnings/book and earnings/price ratios of the barometer group companies and PECO indicate that for certain companies such as Long Island Lighting Company and Pennsylvania Power and Light Company which have experienced substantial earnings on book, the use

of earnings/price ratios will overstate the cost of equity. For companies such as Ohio Edison and PECO which have experienced low earnings on book, the use of earnings/price ratios may significantly understate the cost of equity. In my opinion, a measure of equity costs can only be obtained by this method when the earnings/price ratios of a number of similar companies are averaged over various time periods.

I have prepared Schedule No. 9 which shows the average earnings/price ratios on a five-year, four-year, three-year and two-year average basis as well as the average for the calendar year 1978 and at June 30, 1979 for the barometer group and PECO. As indicated on this schedule, the range for these six periods was 12.15% to 13.48% for the barometer group and 10.26%-12.15% for PECO. At June 30, 1979 the average earnings/price ratio was 13.48% for the barometer group and 12.15% for PECO.

Schedule No. 19 shows the earnings/price ratios for each of the years 1974 through 1978 as well as the average for the five-year period for the barometer group and PECO. The range for the barometer group averages for the years 1974-1978 is 12.06%-15.25% and 9.75% - 13.97% for PECO. The averages for the period were 13.04% for the barometer group and 11.73% for PECO.

In my opinion, PECO's earnings/price ratio data understates its actual cost of equity because of its low earnings on book equity during this five-year period. My recommended range for the cost of equity using the earnings/price ratio method is summarized below.

Barometer group range from Schedule 9	12.15% - 13.48%
Barometer group range from Schedule 19	12.06% - 15.25%
	12.11% - 14.36%

Q. WOULD YOU EXPLAIN THE DISCOUNTED CASH FLOW METHOD OF DETERMINING A COST OF EQUITY CAPITAL PLEASE?

A. Yes, one version of the DCF formula can be stated as:

$$R = \frac{D}{P} + G$$

where: R = expected rate of return;
D = current annual dividend;
P = current price; and
G = estimate of future growth

In my opinion a purely academic model must be used with care in a regulatory environment. The purpose of rate of return analysis is to determine a cost of equity which will approximate the actual cost determined in the market-place by the investor during the prospective period when rates will be in effect. The use of a current annual dividend, current price and estimated future growth rate determined independently of any analysis of the historic, current and future economic conditions could materially misstate the cost of equity. It is necessary to conduct a detailed analysis of present and historical growth patterns and dividend yields and equate them to the stage of the business cycle. Combining this analysis with an analysis of the financial strength of the utility and predictions of future economic conditions should provide a more accurate determination of equity costs.

The DCF Method is often criticized because it is a mathematical model which can produce a great variety of results. Extremely complex DCF models with many variables have been developed in an effort to predict the cost of equity. My use of the DCF Method will be at a much less complicated level. I am concerned with the two major components of the DCF formula, dividend yield and some measure of growth. When combined, they provide an estimate of the return expected by investors. I have analyzed these two components for the barometer group companies and PECO and have examined how they react and interact as a result of changes in the economy and the financial conditions of a company.

Q. HOW DID YOU CONDUCT YOUR DCF ANALYSIS TO ARRIVE AT A COST OF EQUITY CAPITAL FOR PECO?

A. First, I analyzed the dividend yields of the barometer group and PECO for the five-year period 1974-1978. As shown on Schedule No. 16 the yields for the barometer group averaged 9.34% for the five-year period and 10.63% for PECO for the same period. As would be expected the dividend yields were higher for the barometer group and PECO for the years 1974 and 1975 which were periods of high interest and inflation rates. I next analyzed the growth rates in earnings and dividends for various time periods during the years 1969 to 1978 to determine a representative growth rate for the "G" portion of the DCF formula. As shown on page 3 of Schedule No. 10, growth rates in dividends ranged from 2.20% to 4.65% for the various time periods and averaged 3.56% for the periods calculated for the barometer group companies. For the same periods PECO's dividend growth rate ranged from 1.04%

to 4.76% and averaged 2.17% for the periods. On page 4 of Schedule 10, I have made the same calculations for growth in earnings per share. Growth rates ranged from 1.72% to 4.46% and averaged 3.70% for the period for the barometer group. For the same period PECO experienced practically a zero earnings growth rate.

At this point in the DCF analysis it is standard practice to combine an estimate of growth with a current or estimated dividend yield and arrive at a cost of equity capital. However, in my opinion an attempt must first be made to combine the components of the DCF formula to arrive at a total return which the investor required during various historical periods. I have prepared such an analysis on pages 1 and 2 of Schedule 10. In column one of this schedule I have combined the average actual dividend yields for the years indicated with the actual compound growth rates for the barometer group (column 2) to arrive at a total return required by the investor during those periods. I have also used an average current yield and combined it with and estimated growth rate to arrive at a total required return for 1979. I have made the same calculations for PECO using growth in dividends (columns 4, 5 and 6)) and for the barometer group (columns 7, 8 and 9) and PECO (columns 10, 11 and 12) using growth rates in earnings. The purpose of this analysis is to approximate the actual return required by the investor during various historical stages of the business cycle. In my opinion, it is necessary to establish valid historical indicators of returns required by investors in order to make reliable future predictions of equity costs.

Q. PLEASE EXPLAIN HOW YOU ARRIVED AT THE TOTAL REQUIRED RETURNS AS SHOWN IN COLUMN 3, PAGE 1 OF SCHEDULE NO. 10.

A. Under column 1, for the year 1974, I assumed that at December 31, 1973, I was an investor making a decision as to how much I was willing to pay for a share of stock based on expected dividend yields and growth rates. If I made the right decision and paid a price for the stock that resulted in a dividend yield of 9.72% and selected the right growth rate estimate of 2.87% (in this example a five-year compound growth rate) my total required return would have been 12.59%. The same calculations were made for each of the periods indicated for the barometer group and PECO using growth in dividends (columns 1-6) and earnings (columns 7-12).

Q. PLEASE DESCRIBE YOUR ANALYSIS AS SHOWN ON PAGE 2 OF SCHEDULE NO. 10.

A. This analysis is similar to that shown on page 1 but I have averaged the dividend yields over various time periods. This analysis produces a range of required returns similar to the analysis on page 1 of Schedule No. 10. However, it flattens out the change in required returns resulting from business cycle activity. It would be a useful predictor of average equity costs but should not be used to estimate equity costs specifically related to business cycle activity.

Q. WHAT CONCLUSIONS HAVE YOU REACHED AS A RESULT OF YOUR DCF ANALYSIS?

A. My first conclusion is that dividend growth may be a better predictor of utility investors expected growth rates than earnings growth, at least for PECO. The range of equity costs for the barometer group using dividend growth was 12.34% to 13.91%. Using earnings growth it

was 12.20% to 15.25%. The range of equity costs for PECO using dividend growth was 12.63% to 14.67%. Using earnings growth it was 9.17% to 13.14%. The average electric utility makes every attempt to constantly increase its dividend. In lean years this is done by increasing its dividend payout ratio. Since I believe investors in electric utility stocks are very dividend oriented, it is this growth that they primarily rely upon when setting the price they are willing to pay for a share of stock. Of course, if a utility does not receive periodic revenue increases, its real growth will be overrated by the investors and will result in price adjustments over a period of time. I will use dividend growth for the "G" portion of the DCF formula.

Another conclusion which can be reached from my analysis is an obvious one. The cost of equity increases during periods of high interest and inflation rates. A review of column 3, page 1 of Schedule No. 10 shows that during the recessionary years 1974-1975, for the barometer group, the cost of equity went from 12.59% to 13.85%. The year 1976 showed an improvement in our economy and the cost of equity decreased to 12.51%. 1977 was a good year from a business standpoint with the market to book ratios of numerous electric utilities approaching or exceeding 1/1. The average cost of equity for the barometer group for 1977 further decreased to 12.34%. During 1978 inflation and interest rates increased and the cost of equity increased to 13.87%.

It is also apparent to me that the cost of equity may be overstated or understated because of timing differences resulting from investors perception of the state of the economy and the actual state of the

economy. I believe that the 13.85% and 13.87% required returns shown in column 3, page 1 of Schedule No. 10 for 1975 and 1978 respectively may be overstated because of such timing differences. The inflation rate had declined from 11.0 in 1974 to 9.1% in 1975 and growth had improved somewhat over 1974. However, stock prices remained depressed as a result of the lasting impressions of our 1974 economic problems on investors. In 1978, stock prices declined because of increasing inflation and predictions of worse things to come even though the baromter group companies experienced a 4.65% growth rate during that year.

Q. WHAT IS YOUR RECOMMENDED EQUITY COST RANGE USING THE DCF METHOD?

A. I recommend a range of 12.34% to 14.67%. This range was determined using growth in dividends and reflects both the low and high cost of equity for the barometer group and PECO as calculated in columns 1-6, page 1, Schedule No. 10.

Q. BASED ON YOUR ANALYSIS USING THE EARNINGS/PRICE RATIO METHOD AND DISCOUNTED CASH FLOW METHOD WHAT IS YOUR FINAL CONCLUSION REGARDING THE COST OF EQUITY FOR PECO?

A. I conclude that PECO's cost of equity is 13.49% as calculated below.

Cost of Equity Method	Equity Range	Cost of Equity
Earnings/Price Ratio	12.11%-14.36%	13.35%
Discounted Cash Flow	12.34%-14.67%	13.62%
Cost of Equity for PECO		13.49%

This recommendation is intended to be an estimate of the equity return expected by PECO's investors during the prospective year rates will be in effect. In making this recommendation I have given substantial consideration to business cycle activity relative to the years 1974-1975 as well as the calendar year 1978 and projections of growth rates for electric utilities, inflation rates and interest rates for the 1979-1980 period. I have also given special consideration to PECO's financial condition and investment risk as compared to the barometer group companies through my comparative risk analysis.

I would like to make it clear that my final recommendation is tied to the business cycle and should not be considered an "average" cost of equity. In my opinion PECO's cost of equity has averaged less than 13.49% during the period 1974 to the present. Based on analysis of earnings/price ratios, dividend yields and dividend growth for PECO and the barometer group companies, PECO's average cost of equity was closer to 13.1% during this period.

This testimony is being prepared during October of 1979. A decision must be rendered by the Commission before April 25, 1980. I would encourage the Administrative Law Judge as well as the Commission to take into consideration the economic conditions and projections at the time a decision is made. If the economy has shown greater improvement then I have anticipated in this testimony then a lower cost of equity may be appropriate.

Q. HAVE YOU MADE AN ALLOWANCE FOR THE EFFECTS OF FLOTATION COSTS OR MARKET PRESSURE IN YOUR RECOMMENDATION?

A. Up to this point in my analysis I have not. I do not think it is appropriate to make an adjustment for market pressure. However, flotation costs consist of actual expenses incurred as a result of new common stock issues. If a utility has actually issued new stock and incurred such expenses then an adjustment should be made to the recommended cost of equity or such costs should be included as an expense claim in cost of service.

PECO's Exhibit JEB-1, Schedule No. 8, page 3 of 3 indicates that it issued 4,000,000 shares of common stock in April of 1979 at a cost of 54.6¢ per share or a total cost of $2,184,000. I have added 14 basis points to my recommended cost of equity, calculated in the following manner:

Cost of Issue (54.6¢ x 4,000,000)	$ 2,184,000
Common Equity Capital at March 31, 1980 (Schedule No. 3, Exhibit No. DHM-1A)	$1,582,820,000
Required Adjustment to Cost of Equity Recommendation ($2,184,000 ÷ $1,582,820,000)	.00138
Recommended Cost of Equity	.13490
Cost of Equity Recommendation After Adjustment for Flotation Costs	.13628
Rounded	13.63%

My recommended cost of equity after adjustment for flotation costs is 13.63%.

Q. WHY DO YOU THINK IT IS INAPPROPRIATE TO MAKE AN ADJUSTMENT FOR MARKET PRESSURE?

A. For several reasons. In the first place, I believe it is very difficult to objectively separate the changes in stock prices resulting from investors anticipation of a new stock issue from the changes in stock prices resulting from the multitude of interactions which occur in the stock market each day.

In the second place, even if declines in stock prices could be objectively attributed to an issue of new stock such changes would probably be of a short-term nature. If they were of a long-term nature then the effect of market-pressure is automatically taken into consideration in the evaluation and use of market data to determine a cost of equity.

Q. WHAT IS YOUR RECOMMENDATION OF AN OVERALL COST OF CAPITAL FOR PECO?

A. As shown in Schedule No. 2, my recommendation of an overall cost of capital and fair rate of return to be applied to a rate base consisting solely of historical costs is 10.15%. My recommendation provides PECO the opportunity to earn sufficient monies to fully compensate those investors which have supplied PECO with capital through purchase of long-term debt and preferred stock at contracted rates. It will also allow PECO to compensate those investors who have supplied capital to PECO through purchase of common stock. The return which these investors require is based on their expectation of future dividend yields and growth and considers prospective inflation. Since my recommended cost of equity is based on the evaluation of market data and also includes an estimate of prospective inflation, if a rate base which includes a portion of current costs is used in this proceeding then my recommended cost of equity and fair rate of return must be

adjusted downward to avoid compensating the equity investor for capital which he has not supplied to PECO. My recommended range for cost of equity and fair rate of return to be applied to Dr. Birx's recommended rate base which contains some measure of current cost is shown in Schedule No. 2 of my exhibit.

Q. HAVE YOU INCLUDED AN ALLOWANCE FOR ATTRITION IN YOUR RECOMMENDED FAIR RATE OF RETURN?

A. I have not made a separate adjustment for attrition. The investor considers the regulatory environment as well as the differences between allowed rates of return and achieved rates of return when he evaluates the investment risk of a utility. To the extent that a particular utility's earnings on book are deficient or the returns which a regulatory agency allows it the opportunity to earn are lower than that of comparable risk companies, everything else being equal, an investor will be willing to pay less for its stock and will require a higher return.

Since my recommended cost of equity is determined through evaluation of market-based financial data, I have considered the effects of attrition on the cost of capital.

Q. DOES THAT COMPLETE YOUR TESTIMONY?

A. Yes, except to state that my recommended fair rate of return does not contain adjustments for penalties or incentives which may be deemed to be appropriate as a result of the evaluation of management efficiencies or inefficiencies during these proceedings.

Pennsylvania Public Utility Commission

v.

Philadelphia Electric Company
Docket No. R-79060865

APPENDIX A

To Direct Testimony of Donald H. Muth

EDUCATIONAL BACKGROUND AND

BUSINESS EXPERIENCE

Education, Business and Regulatory
Experience of Donald H. Muth

EDUCATIONAL BACKGROUND

In May, 1977 I received a Bachelor of Arts degree in Business Administration from Elizabethtown College. My major course of study was accounting with additional areas of study including economics, finance, computer programming and various business related courses.

I have also attended the following seminars or conferences concerning utility regulation and related subjects:

- NARUC Annual Regulatory Studies Program at Michigan State University - 7/16/73 to 7/27/73

- NARUC Annual Regulatory Seminar on Rate Regulation of Water Utilities at the University of South Florida - 11/11/73 to 11/16/73

- Pennsylvania Public Utility Commission Workshop sponsored by the Pennsylvania State University - May and June, 1976

- Pennsylvania Public Utility Commission Workshop on the Physical Functioning of Utility Equipment sponsored by the Pennsylvania State University - 10/76 to 1/77

- Attended the semi-annual meeting of the NARUC Staff Committee on Accounting in Nashville, Tennessee - 9/12/76-9/16/76

- Visited the New York Public Service Commission to review its organizational structure, auditing and rate case procedures - 1/13/77-1/15/77

- Attended Paine Webber (large New York Investment Banker) Seminar on Fixed Securities - 7/12/77

- Attended Management Conference on Leverage Leasing, Project and Fuel Procurement Financing in the Electric Utility Industry - 10/5/77 to 10/7/77 (New York City)

- Visited Research Department of Paine Webber to study its statistical and economic research methods and sources - November, 1977

- Attended Ohio State University Seminar on use of the Regulatory Analysis Model (RAM) in February, 1979

BUSINESS EXPERIENCE

Non-Utility Experience

From 1956 to 1969 I was employed by The California Test Bureau, a publisher and processor of education and psychological tests for schools, colleges and industry, in various capacities including shipping clerk, supervisor of its eastern division warehouse and supervisor of machine scoring and data processing.

Utility Experience

I have been continuously employed in the utility industry or in utility regulation since 1969.

- From 1969-1972 I was employed by General Waterworks Corporation, a public utility holding company, initially as a Junior Accountant and subsequently as Accounting Supervisor of its Atlantic Division office.

- From 1972-1973 I was employed as an Accountant by Community Communications Corporation, a consulting firm which provided management, engineering, billing and accounting services to several small independent telephone utilities located in Pennsylvania and New York.

- From 1973-1976 I was employed as a Public Utility Analyst in the New Rates Section, Bureau of Rates, Pennsylvania Public Utility Commission. I was responsible for analyzing supporting data filed by water, sewer, gas, electric and telephone companies in support of proposed rate increases and preparing a detailed report recommending acceptance or disallowance of claims for operating revenues, expenses, rate base and rate structure.

- From 1976-10/77 I was employed as a Public Utility Analyst and Assistant Supervisor of The New Rates Section. My responsibilities were similar to those described in the previous paragraph with the additional duty of reviewing rate filings and reports completed by analysts in the section.

  During the period 1973-10/77 I conducted an analysis or supervised the review and analysis of approximately 100 rate cases filed by various utilities. In all of these cases I worked closely with the Rate of Return Section concerning the determination of a proper rate of return to be included in the reports. During this period I acquired a knowledge of the specific components of fair rate of return and conducted an independent rate of return analysis on various cases.

- From 10/77-1/79 I was employed as a Public Utility Analyst and Supervisor of the Tax Section of the Finance Division. In this position I supervised three tax specialists. We were collectively responsible for analyzing rate case data and recommending, through testimony when necessary, the proper allowance for state and federal income taxes to be included in utilities' cost of service.

- From 1/79 to the present I have been supervisor of the Tax Section and the Rate of Return Section of the Finance Division, Bureau of Rates. I am responsible for the supervision of nine personnel employed as income tax and rate of return specialists. We are collectively responsible for analyzing rate case data and recommending, through testimony when necessary, a proper allowance for state and federal income taxes and a fair rate of return.

  Since January, 1979, I have concentrated primarily on the fair rate of return function of rate making. I have prepared or reviewed the preparation of recommendations concerning the cost of capital and fair rate of return for in excess of 100 utilities of various types and sizes.

  During this period we have conducted research and evaluation of new rate of return techniques including the Capital Asset Pricing Model. We are presently laying the groundwork for the establishment of a computerized data base and the computerized analysis of financial and market data of public utilities.

Trial Staff Exhibit No. DHM-1A
Witness: D. H. Muth

Pennsylvania Public Utility Commission

vs.

Philadelphia Electric Company

Docket No. R-79060865

Exhibit to Accompany the

Direct Testimony

of

Donald H. Muth

Concerning

Fair Rate of Return

Index to Schedules

Description	Schedule Number
Index to Schedules	1
Summary of Recommended Fair Rate of Return	2
Capitalization and Capitalization Ratios at 3/31/79 and 3/31/80	3
Weighted Effective Cost Rate of Debt	4, Page 1
- As Adjusted by Staff	4, Page 2
Weighted Effective Cost Rate of Preferred Stock	5, Page 1
- As Adjusted by Staff	5, Page 2
Comparison of Interest Rate Trends for Various Ratings of Utility and Industrial Bonds for the years 1977-1978 and 1979 to date.	6
Annual Rates of Inflation as Measured by the Percent Change in the Average Annual Consumer Price Index	7
Summary of Barometer Group Companies and Major Selection Criteria Data	8
Cost of Common Equity-Earnings/Price Ratio Method for Barometer Group and Philadelphia Electric Company	9
Cost of Common Equity-Discounted Cash Flow Analysis: Calculation of Total Return Required by Investors at Various Time Periods Based on Compound Growth in Dividends and Earnings	10, Page 1
Analysis of Returns Required by Investors Based on Average Dividend Yields and Compound Growth in Dividends and Earnings	10, Page 2
Compound Growth Rate of Dividends Per Share for Various Time Periods	10, Page 3
Compound Growth Rate of Earnings Per Share for Various Time Periods	10, Page 4

Index to Schedules

Description	Schedule Number
Comparative Risk Analysis:	
Relative Rankings by Risk Analysis (Historical) for Barometer Group and Philadelphia Electric Company	11
Relative Rankings by Risk Analysis (Current) for Barometer Group and Philadelphia Electric Company	12
Average Common Equity Ratio for the Calendar Years 1974-1978	13
Average Return on Common Equity (%) for the Calendar Years 1974-1978	14
Interest Coverage Before Income Tax (Including AFUDC) for the Calendar Years 1974-1978	15, Page 1
Interest Coverage After Income Tax (Including AFUDC) for the Calendar Years 1974-1978	15, Page 2
Interest and Preferred Dividend Coverage After Income Taxes (Including AFUDC) for the Calendar Years 1974-1978	15, Page 3
Average Dividend Yields for the Calendar Years 1974-1978	16
Average Dividend Payout Ratios for the Calendar Years 1974-1978	17
Average Market to Book Ratios for the Calendar Years 1974-1978	18
Average Earnings/Price Ratios for the Calendar Years 1974-1978	19
Internal Cash Generation as a Percentage of Construction Expenditures for the Years 1974-1978	20
Allowance for Funds Used During Construction as a Percentage of Income Available for Common Equity for the Years 1974-1978	21

Index to Schedules

Description	Schedule Number
Effective Tax Rates for the Calendar Years 1974-1978	22
Electric Generation by Fuel Mix 1979 Estimated	23
Compound Growth in Electric Sales (Kwh) for the Period 1974-1978	24
Regulatory Environment-Barometer Group and Philadelphia Electric Company	25, Pages 1 & 2
Current (1978) Risk Analysis Using Various Financial and Operating Indices and Ratios for Barometer Group and Philadelphia Electric Company	26, Pages 1 to 4

Summary of Recommended Fair Rate of Return

Recommended Fair Rate of Return Applicable to a Rate Base which Consists Solely of Historical Costs

Type of Capital	Ratios %	Cost Rate %	Weighted Cost %
Long-Term Debt	52.2	8.40	4.38
Preferred Stock	12.8	7.78	1.00
Common Equity	35.0	13.63	4.77
Total	100.00		10.15

Recommended Range of Cost of Equity and Fair Rate of Return Applicable Solely to Staff Recommended Rate Base Containing Some Measure of Current Costs

Staff Recommended Rate Base Range	Applicable Cost of Equity Range	Applicable Fair Rate of Return Range
$2,889,000,000	8.63 %	8.40%
to	to	to
$2,828,000,000	9.14 %	8.58%

Philadelphia Electric Company
CAPITALIZATION AND CAPITALIZATION RATIOS
FISCAL YEARS ENDED
3/31/79 AND 3/31/80

	Fiscal Year Ended 3/31/79			Fiscal Year Ended 3/31/80		
	$	Excl. Short Term	Incl. Short Term	$	Excl. Short Term	Incl. Short Term
Long Term Debt	$2,207,080*	51.6%	51.4%	$2,355,792*	52.2%	52.0%
Preferred Stock	582,872	13.6	13.6	579,672	12.8	12.8
Common Equity	1,487,877	34.8	34.7	1,582,820	35.0	34.9
Total Permanent Capital	$4,277,829	100.0%	99.7%	$4,518,284	100.0%	99.7%
Short Term Debt	12,367		0.3	13,000		0.3
Total Capitalization	$4,290,196		100.0%	$4,531,284		100.0%
System						
Long Term Debt	$2,228,861*	51.8%	51.6%	$2,376,792*	52.3%	52.2%
Preferred Stock	582,872	13.6	13.5	579,672	12.8	12.7
Common Equity	1,487,877	34.6	34.5	1,582,820	34.9	34.7
Total Permanent Capital	$4,299,610	100.0%	99.6%	$4,539,284	100.0%	99.6%
Short Term Debt	16,617		0.4	17,000		0.4
Total Capitalization	$4,316,227		100.0%	$4,556,284		100.0%

*Current maturities of long term debt are included in these figures but not the unamortized premium and discount.

Note: This Schedule is Attachment II-A-1c of Volume II of Respondent's Exhibit No. 1.

PHILADELPHIA ELECTRIC COMPANY

DEBT CAPITAL
DEVELOPMENT OF WEIGHTED EFFECTIVE COST RATE
March 31, 1980
($1,000's)

Coupon Rate (h) (1)	Date of Maturity (b) (2)	Date of Issue (a) (3)	Principal Amount Outstanding (q)(d) (4)	Premium or (Discount) (j) (5)	Issue Expense (j) (6)	Net Proceeds (k) Amount (7)	Net Proceeds (k) Per $100 (8)	Cost of Money Curr. Yield (9)	Cost of Money Ann. Interest (10)=(9)x(7)	Yield to Maturity (m) (11)
2-3/4%	due 1981	12/1/46	30,000	$264	134	30,130	100.43	2.74	826	2.73
3-1/4%	due 1982	1/1/52	35,000	103	161	34,942	99.83	3.26	1,139	3.26
3-1/8%	due 1983	12/1/53	20,000	(197)	97	19,706	98.53	3.17	625	3.20
3-1/8%	due 1985	8/1/55	50,000	(239)	159	49,606	99.21	3.15	1,563	3.17
4.85% S.F. Debs	due 1986	10/1/61	40,000	-	186	39,814	99.53	4.87	1,939	4.88
4-5/8%	due 1987	9/1/57	40,000	(284)	131	39,585	98.96	4.67	1,849	4.69
3-3/4%	due 1988	5/1/58	40,000	(360)	123	39,517	98.79	3.80	1,502	3.82
4-3/8%	due 1986	12/1/58	50,000	(315)	148	49,537	99.07	4.42	2,190	4.43
5%	due 1989	10/1/59	50,000	171	153	50,018	100.04	5.00	2,501	5.00
4-1/2%	due 1994	5/1/64	50,000	160	134	50,026	100.05	4.50	2,251	4.50
6-1/8%	due 1997	10/1/67	75,000	(271)	115	74,614	99.49	6.16	4,596	6.16
6-1/2%	due 1993	3/1/68	60,000	(401)	79	59,520	99.20	6.55	3,899	6.57
9% S.F.	due 1995	2/1/70	80,000	1,071	111	80,960	101.20	8.89	7,197	8.88
7-3/4% S.F.	due 2000	12/15/70	80,000	(772)	107	79,121	98.90	7.84	6,203	7.85
8-1/4%	due 1996	7/1/71	80,000	(369)	126	79,505	99.38	8.30	6,599	8.31
7-3/8%	due 2001	12/15/71	80,000	49	132	79,917	99.90	7.38	5,898	7.38
7-1/2%	due 1998	6/15/72	100,000	(18)	142	99,840	99.84	7.51	7,498	7.51
7-1/2%	due 1999	1/15/73	100,000	(384)	116	99,500	99.50	7.54	7,502	7.54
8-1/2%	due 2004	1/15/74	125,000	34	145	124,889	99.91	8.51	10,626	8.51
7-year notes		5/29/74	75,000	-	3	74,997	99.99	10.50(1)	7,875	10.50
11%	due 1980	10/15/74	125,000	(1,219)	216	123,565	98.85	11.13	13,753	11.27
12-3/4%	due 1981	1/15/75	100,000	(850)	125	99,025	99.03	12.87	12,745	12.99
11-5/8%	due 2000	4/15/75	65,000	(423)	104	64,473	99.19	11.72	7,556	11.73
11%	due 2000	8/1/75	80,000	(700)	177	79,123	98.90	11.12	8,798	11.13
9-1/8%	due 2006	3/1/76	100,000	(875)	159	98,966	98.97	9.22	9,125	9.23
9-5/8%	due 2002	8/1/76	100,000	(875)	168	98,957	98.96	9.73	9,625	9.74
8-5/8%	due 2007	3/15/77	75,000	(670)	117	74,213	98.95	8.72	6,469	8.73
8-5/8%	due 2007	7/15/77	75,000	(429)	141	74,430	99.24	8.69	6,469	8.70
9-1/8%	due 2008	3/15/78	100,000	110	152	99,958	99.96	9.13	9,125	9.14
7-year notes		7/10/78	25,000	-	3	24,997	99.99	10.70(2)	2,675	10.70
7-year notes		7/13/78	75,000	-	3	74,997	99.99	10.25(3)	7,688	10.25
8-year note		5/28/79	50,000	-	-	50,000	100.00	10.0 (4)	5,000	10.0
10-1/4%	due 2009 (5)	10/79	100,000	-	-	100,000	100.00	10.25	10,250	10.25
I.R.B.'s										
4.50%	due 1980	10/1/72	1,000	-	15	985	98.50	4.57	45	4.72
5.50%	due 1997	10/1/72	33,000	-	479	32,521	98.55	5.58	1,815	5.61
6.00%	due 1993-2003	2/1/77	23,500	(429)	210	22,861	97.28	6.17	1,410	6.23
Note to Samuel & Catherine Edwards		7/19/77	304	-	-	304	100.00	8.00	24	8.00
Note to IBM			27	-	-	27	100.00	10.00	3	10.00
Note to Clarence & Betty Myers		11/1/78	30	-	-	30	100.00	7.00	2	7.00
Note to Burdett Oxygen Company		2/1/78	36	-	-	36	100.00	8.00	3	8.00
Cumulative Nonrequired S.F.(f)										
4.85% S.F. Debs Due 2000		10/1/61	(14,406)	-	(67)	(14,339)	99.53	(4.87)	(698)	(4.88)
9% S.F. Due 1995		2/1/70	(9,600)	(129)	(13)	(9,716)	101.20	(8.89)	(864)	(8.88)
7-3/4% S.F. due 2000		12/15/70	(8,099)	78	(11)	(8,010)	98.90	(7.84)	(628)	(7.85)
			2,399,792	(8,161)	4,480	2,383,151			194,670	
Weighted Avg. Cost of Debt Capital						8.31% (p)				

(1) = 105% of prime (prime @ 10.0%) = 10.50%
(2) = 107% of prime (prime @ 10.0%) = 10.70%
(3) = 1/8 of 1% over prime (prime @ 10.0%) = 10.25%
(4) = Prime = 10.0%
(5) = estimated

Note: This Schedule is Attachment II-A-6a, 2 of 2 of Volume II of Respondent's Exhibit No. 1.

Calculation of Weighted Average Cost of Debt at March 31, 1980

	($000's)
Net Proceeds (Column 7, Page 1, Schedule No. 4)	$2,343,151
Annual Interest Calculated on a Current Yield Basis (Column 9, Page 1, Schedule No. 4)	$ 194,670
Adjustment for $100,000 of Bonds Issued at 12.62% ($12,620 - 10,250)	2,370
Adjustment for Gain on Required Debt (1)	(291)
Total Interest Expense	$ 196,749
Weighted Effective Cost of Debt	8.40%

Note 1: The $291,000 adjustment for gain on reacquired debt is the average of the gains for 1977, 1978 and 1979 as reported on Attachment II-A-6C, Sheet 1 of 2 of Respondent's Exhibit No. 1 .

Philadelphia Electric Company
Preferred Stock
Development of Weighted Effective Cost Rate
March 31, 1980
($1,000's)

Issue (h&n)		Shares	Date of Issue (a)	Principal Amount Outstanding (c,d,f)	Total Discount and Expense or Net Premium (i,j)	Amount (k)	Per Share	Dividend Requirement	Effective Cost Rate - % (m,o)
4.4%	Cumulative	226,499	Dec. 1941	$22,650	-	$22,650	$100.00	$996.6	4.40
		48,221	Mar. 1942	4,822	449	5,271	109.31	212.2	4.03
3.8%	Cumulative	300,000	12/5/46	30,000	(30)	29,970	99.90	1,140.0	3.80
4.3%	Cumulative	150,000	2/5/48	15,000	(468)	14,532	96.88	645.0	4.44
4.68%	Cumulative	150,000	5/14/53	15,000	(244)	14,756	98.37	702.0	4.76
7%	Cumulative	400,000	2/18/69	40,000	(646)	39,354	98.39	2,800.0	7.11
8.75%	Cumulative	650,000	7/22/70	65,000	(1,040)	63,960	98.40	5,687.5	8.89
7.85%	Cumulative	500,000	3/10/71	50,000	(801)	49,199	98.40	3,925.0	7.98
7.75%	Cumulative	200,000	11/16/71	20,000	(399)	19,601	98.01	1,550.0	7.91
7.80%	Cumulative	750,000	4/20/72	75,000	(1,106)	73,894	98.53	5,850.0	7.92
7.325%	Cumulative	750,000	5/1/73	75,000	(442)	74,558	99.41	5,493.8	7.37
9.50%	Cumulative	750,000	5/1/74	75,000	(1,093)	73,907	98.54	7,125.0	9.64
9.52%	Cumulative	500,000	5/1/76	50,000	(920)	49,080	98.16	4,760.0	9.70
8.75%	Cumulative	500,000	5/1/78	50,000	(225)	49,775	99.55	4,375.0	8.79
(Redeemed 7% Cumulative)		(48,000)	2/18/69	(4,800)	77	(4,723)	98.39	(336.0)	(7.11)
Redeemed 7.325% Cumulative		(30,000)	5/1/73	(3,000)	18	(2,982)	99.41	(291.8)	(7.37)
Total at 3/31/80(p)				$579,672		$572,802		$44,706.3	7.80

(b) Not applicable
(e) Not applicable
(g) Not applicable

Note: This Schedule is Attachment II-A-6b, 2 of 2 of Volume II of Respondent's Exhibit No. 1.

Exhibit No. DHM-1A
Schedule No. 5
Page 1 of 2

Calculation of Weighted Average Cost of Preferred Stock at March 31, 1980

	($000's)
Net Proceeds (Column 6, Page 2, Schedule No. 5)	$572,802.0
Dividend Requirement (Column 8, Page 2, Schedule No. 5)	$ 44,706.3
Adjustment for Gain on Preferred Stock (1)	121.5
Net Dividend Requirement	$ 44,584.8
Weighted Effective Cost of Preferred Stock	7.78%

Note 1: The $121,500 adjustment for gain on redemption of preferred stock is the average of the gains for 1977, 1978, and 1979 as reported on Attachment II-A-6c, Sheet 2 of 2 of Respondent's Exhibit No. 1 .

Comparison of Interest Rate Trends for
Various Ratings of Utility and Industrial Bonds
for the Years 1971-1978 and 1979 to Date

Time Period	Aaa Rated Bonds			Aa Rated Bonds			A Rated Bonds			Baa Rated Bonds		
	Utility	Industrial	Spread	Utility	Industrial	Spread	Utility	Industrial	Spread	Utility	Industrial	Spread
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1971	7.72	7.05	.67	8.00	7.23	.77	8.16	7.61	.55	8.63	8.37	.26
1972	7.46	6.97	.49	7.60	7.11	.49	7.72	7.36	.36	8.17	7.99	.18
1973	7.60	7.28	.32	7.72	7.40	.32	7.84	7.63	.21	8.17	8.07	.1
1974	8.71	8.42	.29	9.04	8.64	.40	9.50	8.90	.60	9.84	9.14	.7
1975	9.03	8.61	.42	9.44	8.90	.54	10.09	9.21	.88	10.96	10.26	.70
1976	8.63	8.23	.40	8.92	8.59	.33	9.33	8.88	.45	9.82	9.67	.15
1977	8.19	7.86	.33	8.43	8.04	.39	8.61	8.36	.25	9.06	8.87	.19
1978	8.87	8.58	.29	9.10	8.74	.36	9.29	8.94	.35	9.62	9.35	.27
1979												
Jan.	9.48	9.01	.47	9.70	9.24	.46	9.90	9.54	.36	10.29	9.96	.33
Feb.	9.51	9.01	.50	9.74	9.25	.49	9.84	9.51	.33	10.27	9.89	.38
Mar.	9.61	9.11	.50	9.89	9.33	.56	10.04	9.59	.45	10.53	9.98	.55
Apr.	9.61	9.15	.46	9.92	9.37	.55	10.10	9.65	.45	10.56	10.11	.45
May	9.71	9.30	.41	10.19	9.52	.67	10.30	9.70	.60	10.70	10.24	.46
June	9.49	9.08	.41	9.95	9.36	.59	10.14	9.64	.50	10.56	10.19	.37
Jul.	9.42	8.98	.44	9.72	9.26	.46	9.98	9.52	.46	10.48	10.11	.37
Aug.	9.46	8.99	.47	9.75	9.31	.44	10.14	9.56	.58	10.50	10.20	.30
Sep.	9.49	9.18	.31	9.94	9.46	.48	10.36	9.69	.67	10.78	10.29	.49
Oct.												

Source of Information: Moody's Public Utility Manuals and Bond Surveys.

Exhibit No. DHM-1A
Schedule No. 6
Page 1 of 1

Annual Rates of Inflation as
Measured by the Percent Charge in
the Average Annual Consumer Price Index

Time Period (1)	Annual Rate of Inflation (2)
1969	5.4%
1970	5.9%
1971	4.3%
1972	3.3%
1973	6.2%
1974	11.0%
1975	9.1%
1976	5.8%
1977	6.5%
1978	7.7%
1979 (October)	13.2%
1980 (Estimated)	8.5-9.0%

Source of Information: Federal Reserve Bulletin
Wall Street Journal
1980 - Staff Estimate

Summary of Barometer Group Companies and Major Selection Criteria Data

Company	Gross Utility Plant(1) (1)	Investor Supplied Capital(1) (2)	Major Service Areas (States) (3)	Bond Rating Moody's (4)	Bond Rating S&P (5)	Common Stock Rating S&P (6)	Gross Operating Revenue Mix Electric (7)	Gas (8)	Other (9)
Carolina Power and Light Company	$3.4	$2.6	N.C., S.C.	A	A	A-	100.0%	--	--
Duke Power Company	5.8	4.3	N.C., S.C.	A	A	A-	100.0	--	--
Niagara Mohawk Power Corporation	3.9	2.9	N.Y.	A	A-	B+	79.7	20.3	--
Ohio Edison Company	3.4	2.7	Ohio, Pa.	A	A-	B+	99.4	--	.6
Detroit Edison Company	5.1	3.7	Mich.	Baa	BBB+	B+	98.2	--	1.8
Long Island Lighting Company	3.2	2.7	N.Y.	Aa	A-	A-	82.1	17.9	--
Pennsylvania Power and Light Company	3.5	3.0	Pa.	Aa	A+	A-	100.0	--	--
Virginia Electric and Power Company	5.6	4.7	Va., N.C.	A	A	A-	96.5	3.5	--
Average	4.2	3.3	--	--	--	--	94.5	5.2	.3
Philadelphia Electric Company	5.5	4.3	Pa.	A	A-	B+	84.0	13.0	3.0

Source of Information: Moody's Public Utility Manuals; Companies' Annual Reports to Stockholders; Standard and Poor's Stock Guide

Note 1: Billions of dollars

Basis for Selection of Barometer Group

1. Operates in Eastern Part of United States
2. Gross Utility Plant in Excess of $3 Billion
3. Total Investor Supplied Capital in Excess of $2.5 Billion
4. Have Common Stocks Rated A- or B+ by Standard and Poors
5. Have Bonds Rated Aa, A, or Baa by Moody's Investor Services, Inc.
6. Have a Common Stock which is Actively Traded
7. Have approximately 80% or More of Their 1978 Operating Revenues Derived from Electric Sales

Cost of Common Equity
Earnings/Price Ratio Method
for Barometer Group and Philadelphia Electric Company

Company	5 Year Average 1974-1978 (1)	4 Year Average 1975-1978 (2)	3 Year Average 1976-1978 (3)	2 Year Average 1977-1978 (4)	Calendar Year-1978 (5)	At June 30, 1979 (1) (6)
Carolina Power and Light Company	13.09%	13.09%	12.42%	12.66%	14.17%	14.43%
Duke Power Company	11.62	11.70	12.04	12.06	13.01	14.87
Niagara Mohawk Power Corporation	14.01	13.71	11.91	12.01	12.87	14.59
Ohio Edison Company	10.28	10.28	9.36	8.35	6.92	8.03
Detroit Edison Company	11.99	12.13	11.77	11.86	11.64	13.59
Long Island Lighting Company	14.63	14.68	13.84	13.44	13.28	14.14
Pennsylvania Power and Light Company	14.58	14.23	13.60	13.96	13.23	15.50
Virginia Electric and Power Company	14.11	14.06	12.87	12.88	12.85	12.71
	13.04	12.98	12.23	12.15	12.25	13.48
Philadelphia Electric Company	11.73	11.53	10.71	10.26	10.76	12.15

Average Range for Barometer Group 12.15% - 13.48%

Range for Philadelphia Electric Company 10.26 - 12.15%

Source of Information: Summarized from Schedule 19, Exhibit No. DHM-1A

Note 1: Based on Average Hi and Low Stock Prices for the 6 month Period Ended June 30, 1979 and Earnings per Share for the 12-Month Period Ended June 30, 1979.

Exhibit No. DHM-1A
Schedule No. 9
Page 1 of 1

Exhibit No. DHM-1A
Schedule No. 10
Page 1 of 4

Cost of Common Equity
Discounted Cash Flow Analysis
for Barometer Group and Philadelphia Electric Company

REVISED

Calculation of Total Return Required by Investors at Various Time Periods Based on Compound Growth in Dividends

Barometer Group			Philadelphia Electric Company		
Average Dividend Yield	Compound Growth Rate	Total Required Return	Average Dividend Yield	Compound Growth Rate	Total Required Return
(1)	(2)	(3)	(4)	(5)	(6)
1974	1973-1978	Total	1974	1973-1978	Total
10.43	2.87	13.30	11.34	1.88	13.22
1975	1974-1978	Total	1975	1974-1978	Total
10.82	3.03	13.85	12.32	2.35	14.67
1976	1975-1978	Total	1976	1975-1978	Total
8.74	3.77	12.51	9.98	3.15	13.13
1977	1976-1978	Total	1977	1976-1978	Total
8.20	4.14	12.34	9.17	4.76	13.93
1978	1977-1978	Total	1978	1977-1978	Total
9.22	4.65	13.87	10.36	2.27	12.63
Average Current Yield	Estimated 1979 Growth Rate	Total Required Return	Average Current Yield	Estimated 1979 Growth Rate	Total Required Return
10.41	3.50	13.91	10.99	2.00	12.99
Average of Periods			Average of Periods		
9.64	3.66	13.30	10.69	2.74	13.43

Range for Barometer Group: 12.34%-13.91%

Range for Philadelphia Electric Co.: 12.63%-14.67%

Calculation of Total Return Required by Investors at Various Time Periods Based on Compound Growth in Earnings

Barometer Group			Philadelphia Electric Company		
Average Dividend Yield	Compound Growth Rate	Total Required Return	Average Dividend Yield	Compound Growth Rate	Total Required Return
(7)	(8)	(9)	(10)	(11)	(12)
1974	1973-1978	Total	1974	1973-1978	Total
10.43	2.88	13.31	11.34	--	11.34
1975	1974-1978	Total	1975	1974-1978	Total
10.82	4.43	15.25	12.32	.82	13.14
1976	1975-1978	Total	1976	1975-1978	Total
8.74	4.26	13.00	9.98	.18	10.16
1977	1976-1978	Total	1977	1976-1978	Total
8.20	4.00	12.20	9.17	--	9.17
1978	1977-1978	Total	1978	1977-1978	Total
9.22	4.46	13.68	10.36	--	10.36
Average Current Yield	Estimated 1979 Growth Rate	Total Required Return	Average Current Yield	Estimated 1979 Growth Rate	Total Required Return
10.41	4.00	14.41	10.99	1.50	12.49
Average of Periods			Average of Periods		
9.64	4.00	13.64	10.69	.42	11.11

Range for Barometer Group: 12.20%-15.25%

Range for Philadelphia Electric Co.: 9.17%-13.14%

Source of Information: - Average Dividend Yields-Schedule No. 16, Exhibit No. DHM-1A; - Compound Growth in Dividends-Schedule No. 10, Page 3 of 4, Exhibit DHM-1A; - Compound Growth in Earnings-Schedule No. 10, Page 4 of 4, Exhibit DHM-1A; - Average Current Yield-Standard and Poors Stock Guide-Calculated using average of the High and Low Stock Prices for 6 months ended June 30, 1979 and Earnings Per Share for 12 Months Ended.

Cost of Common Equity
Discounted Cash Flow Analysis
for Barometer Group and Philadelphia Electric Company

Analysis of Returns Required by Investors Based on Average Dividend Yields and Compound Growth in Dividends

Barometer Group			Philadelphia Electric Company		
Average Dividend Yield	Compound Growth Rate	Average Required Return	Average Dividend Yield	Compound Growth Rate	Average Required Return
(1)	(2)	(3)	(4)	(5)	(6)
1974-1978	1973-1978	Total	1974-1978	1973-1978	Total
9.34	2.87	12.21	10.69	1.88	12.57
1975-1978	1974-1978	Total	1975-1978	1974-1978	Total
9.25	3.03	12.28	10.46	2.35	12.81
1976-1978	1975-1978	Total	1976-1978	1975-1978	Total
8.72	3.77	12.49	9.84	3.15	12.99
1977-1978	1976-1978	Total	1977-1978	1976-1978	Total
8.71	4.14	12.85	9.77	4.76	14.53
1978	1977-1978	Total	1978	1977-1978	Total
9.22	4.65	13.87	10.36	2.27	12.63
Average of Periods			Average of Periods		
9.05	3.69	12.74	10.23	2.88	13.11
Barometer Group Range			Philadelphia Electric Co. Range		
12.21%-13.87%			12.57%-14.53%		

Analysis of Returns Required by Investors Based on Average Dividend Yields and Compound Growth in Earnings

Barometer Group			Philadelphia Electric Company		
Average Dividend Yield	Compound Growth Rate	Average Required Return	Average Dividend Yield	Compound Growth Rate	Average Required Return
(7)	(8)	(9)	(10)	(11)	(12)
1974-1978	1973-1978	Total	1974-1978	1973-1978	Total
9.34	2.88	12.22	10.69	—	10.69
1975-1978	1974-1978	Total	1975-1978	1974-1978	Total
9.25	4.43	13.68	10.46	.82	11.28
1976-1978	1975-1978	Total	1976-1978	1975-1978	Total
8.72	4.26	12.98	9.84	.18	10.02
1977-1978	1976-1978	Total	1977-1978	1976-1978	Total
8.71	4.00	12.71	9.77	—	9.77
1978	1977-1978	Total	1978	1977-1978	Total
9.22	4.46	13.68	10.36	—	10.36
Average of Periods			Average of Periods		
9.05	4.00	13.05	10.22	.20	10.42
Barometer Group Range			Philadelphia Electric Co. Range		
12.22%-13.68%			9.77%-11.28%		

Source of Information: Average Dividend Yields - Calculated from Schedule No. 16, Exhibit No. DHM-1A.
Compound Growth in Dividends - Schedule No. 10, Page 3 of 4, Exhibit No. DHM-1A.
Compound Growth in Earnings - Schedule No. 10, Page 4 of 4, Exhibit No. DHM-1A.

Discounted Cash Flow Analysis

Compound Growth Rate of Dividends Per Share for Various Time Periods

Company	Dividends Per Share 1969 (1)	1970 (2)	1971 (3)	1972 (4)	1973 (5)	1974 (6)	1975 (7)	1976 (8)	1977 (9)	1978 (10)
Carolina Power and Light Company	$1.42	$1.46	$1.46	$1.48	$1.54	$1.60	$1.60	$1.66	$1.72	$1.87
Duke Power Company	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.53	1.63	1.74
Niagara Mohawk Power Corporation	1.10	1.10	1.10	1.12	1.15	1.18	1.21	1.24	1.32	1.37
Ohio Edison Company	1.50	1.54	1.54	1.54	1.59	1.65	1.66	1.67	1.72	1.76
Detroit Edison Company	1.40	1.40	1.40	1.40	1.44	1.45	1.45	1.45	1.45	1.52
Long Island Lighting Company	1.29	1.33	1.37	1.41	1.45	1.46	1.49	1.55	1.61	1.68
Pennsylvania Power and Light Co.	1.59	1.60	1.60	1.62	1.68	1.77	1.80	1.80	1.89	1.92
Virginia Electric and Power Co.	1.11	1.12	1.12	1.12	1.17	1.18	1.18	1.23	1.24	1.30
Average	$1.35	$1.37	$1.37	$1.39	$1.43	$1.46	$1.47	$1.52	$1.57	$1.65
Philadelphia Electric Company	$1.64	$1.64	$1.64	$1.64	$1.64	$1.64	$1.64	$1.64	$1.76	$1.80
Compound Growth Rates for the Periods:	1969-1978	1970-1978	1971-1978	1972-1978	1973-1978	1974-1978	1975-1978	1976-1978	1977-1978	Average of Periods
Barometer Group	2.20%	2.32%	2.60%	2.88%	2.87%	3.03%	3.77%	4.14%	4.65%	3.56%
Philadelphia Electric Company	1.04%	1.17%	1.34%	1.56%	1.88%	2.35%	3.15%	4.76%	2.27%	2.17%

Source of Information: 1969-1973 - Standard and Poor's Stock Guide
1974-1978 - Annual Reports to Stockholders

Discounted Cash Flow Analysis

Compound Growth Rates of Earnings Per Share for Various Time Periods

Company	Earnings Per Share 1969 (1)	1970 (2)	1971 (3)	1972 (4)	1973 (5)	1974 (6)	1975 (7)	1976 (8)	1977 (9)	1978 (10)
Carolina Power and Light Company	$2.05	$1.56	$1.97	$2.86	$2.58	$2.21	$2.36	$2.52	$2.61	$3.10
Duke Power Company	2.05	1.57	1.88	1.69	1.87	1.74	1.62	2.40	2.41	2.61
Niagara Mohawk Power Corporation	1.52	1.48	1.47	1.81	1.39	1.70	2.03	1.61	1.74	1.89
Ohio Edison Company	1.92	1.84	1.78	1.91	2.14	1.68	1.95	2.14	1.97	1.19
Detroit Edison Company	1.95	1.88	1.81	2.09	1.77	1.46	1.50	1.66	2.00	1.76
Long Island Lighting Company	1.94	1.95	2.11	2.20	2.02	2.03	2.31	2.52	2.59	2.44
Pennsylvania Power and Light Company	2.32	1.97	2.37	2.48	2.57	2.88	2.87	2.68	3.37	2.86
Virginia Electric and Power Company	1.73	1.80	1.85	2.08	2.13	1.62	1.95	1.80	1.92	1.88
Average	$1.94	$1.76	$1.91	$2.14	$2.06	$1.92	$2.07	$2.17	$2.33	$2.22
Philadelphia Electric Company	$1.97	$1.84	$2.10	$2.08	$1.99	$1.81	$1.86	$1.91	$1.87	$1.87

Compound Growth Rates for the Periods:	1969-1978	1970-1978	1971-1978	1972-1978	1973-1978	1974-1978	1975-1978	1976-1978	1977-1978	Average of Periods
Barometer Group	1.97%	3.35%	2.53%	1.72%	2.88%	4.43%	4.26%	4.00%	4.46%	3.70%
Philadelphia Electric Company	0.00%	0.20%	0.00%	0.00%	0.00%	0.82%	0.18%	0.00%	0.00%	0.15%

Source: 1969-1973 - Standard and Poor's Stock Guide
1974-1978 - Annual Report to Stockholders

Exhibit No. DHM-1A
Schedule No. 10
Page 4 of 4

Comparative Risk Analysis

Relative Rankings by Risk Analysis (Historical) for Barometer Group and Philadelphia Electric Company

Historical Risk Analysis	Carolina Power and Light Co. (1)	Duke Power Company (2)	Niagara Mohawk Power Co. (3)	Ohio Edison Company (4)	Detroit Edison Company (5)	Long Island Lighting Co. (6)	Penna. Power & Light Company (7)	Virginia Elec. and Power Co. (8)	Phila. Electric Company (9)	Schedule No. (10)
Common Equity Ratio	2	6	1	8	5	4	9	7	3	13
Return on Common Equity	4	5	6	3	9	1	2	7	8	14
Interest Coverage-Before Income Taxes	1	3	6	9	8	5	2	7	4	15, p.1
Interest Coverage-After Income Taxes	4	6	3	4	9	1	2	6	8	15, p.1
Fixed Charge Coverage-After Income Taxes	4	6	2	4	9	1	3	8	7	15, p.1
Dividend Yield	7	9	4	3	2	5	6	8	1	16
Dividend Payout Ratio	3	6	5	9	7	2	1	4	8	17
Market to Book Ratios	4	2	7	1	8	3	5	9	6	18
Earnings/Price Ratios	5	2	6	1	4	9	8	7	3	19
Internal Cash Generation as a % of Construction Expenditures	1	N/A	2	N/A	N/A	6	5	3	4	20
AFUDC as a % of Income Available for Common Equity	9	5	1	8	4	3	2	6	7	21
Effective Income Tax Rates	2	1	7	9	5	8	4	6	3	22
Electric Generation by Fuel Mix	5	3	8	1	2	9	4	7	6	23
Compound Growth in Electric Sales (kwh)	7	8	1	3	4	5	6	9	2	24
Regulatory Environment	1	1	4	4	3	4	4	4	4	25
Average Rank	3.93	4.50	4.20	4.79	5.64	4.40	4.20	6.53	4.93	
Risk Ranking	1	5	2	6	8	4	2	9	7	

Source of Information: Summarized from Schedules 13 through 25, Exhibit No. DHM-1A.

Exhibit No. DHM-1A
Schedule No. 11
Page 1 of 1

Comparative Risk Analysis

Relative Rankings by Risk Analysis (Current) for Barometer Group and Philadelphia Electric Company

Current (1978) Risk Analysis	Carolina Power and Light Co. (1)	Duke Power Company (2)	Niagara Mohawk Power Co. (3)	Ohio Edison Company (4)	Detroit Edison Company (5)	Long Island Lighting Co. (6)	Penna. Power & Light Company (7)	Virginia Elec. and Power Co. (8)	Phila. Electric Company (9)	Schedule No. (10)
Common Equity Ratio	1	3	4	9	6	2	5	8	7	26, p.1
Return on Common Equity	2	3	5	9	8	1	4	6	7	26, p.1
Interest Coverage-Before Income Taxes	1	2	5	9	8	4	3	7	6	26, p.1
Interest Coverage-After Income Taxes	2	5	3	9	8	1	3	6	7	26, p.1
Fixed Charge Coverage-After Income Taxes	1	4	3	9	8	2	5	7	6	26, p.2
Dividend Yield	9	8	4	2	3	5	7	6	1	26, p.2
Dividend Payout Ratio	1	2	6	9	7	4	3	5	8	26, p.2
Market to Book Ratios	5	3	7	1	8	2	6	9	4	26, p.2
Earnings/Price Ratios	9	6	5	1	3	8	7	4	2	26, p.3
Internal Cash Generation as a % of Construction Expenditures	7	3	1	9	4	6	8	5	2	26, p.3
AFUDC as a % of Income Available for Common Equity	2	8	1	9	5	4	7	3	6	26, p.3
Effective Income Tax Rates	1	2	7	9	4	8	3	6	5	26, p.3
Electric Generation by Fuel Mix	5	3	8	1	2	9	4	7	6	26, p.4
Growth in Electric Sales (kwh)	5	4	7	1	3	8	6	9	2	26, p.4
Regulatory Environment	1	1	4	4	3	4	4	4	4	26, p.4
Beta Rank	7	7	2	3	3	6	1	7	3	26, p.4
Average Rank	3.69	4.00	4.50	5.88	5.19	4.63	4.75	6.19	4.75	
Risk Ranking	1	2	3	8	7	4	5	9	5	

Source of Information: Summarized from Schedule 26 of Exhibit No. DHM-1A

Exhibit No. DHM-1A
Schedule No. 12
Page 1 of 1

Comparative Risk Analysis

Average Common Equity Ratio for the Calendar Years 1974-1978 (1)

Company	Common Equity Ratio 1974 (1)	1975 (2)	1976 (3)	1977 (4)	1978 (5)	Average (6)	Risk Ranking (7)
Carolina Power and Light Company	29.3	32.3	36.0	35.6	38.7	34.4	2
Duke Power Company	31.4	30.8	33.1	35.0	37.0	33.5	6
Niagara Mohawk Power Corporation	32.3	34.4	36.3	35.3	36.9	35.0	1
Ohio Edison Company (2)	32.4	33.2	30.6	35.7	32.7	32.9	8
Detroit Edison Company	32.4	33.8	32.7	34.1	34.9	33.6	5
Long Island Lighting Company	30.5	31.5	33.3	35.4	38.6	33.9	4
Pennsylvania Power and Light Company	30.6	30.4	30.8	33.0	35.3	32.0	9
Virginia Electric and Power Company	31.4	33.4	33.5	33.9	34.3	33.3	7
Average	31.3	32.5	33.3	34.8	36.0	33.6	--
Philadelphia Electric Company	33.1	34.4	34.5	35.2	34.4	34.3	3

Source: Moody's Public Utility Manuals
Annual Reports to Stockholders
Value Line Investment Survey

Notes:
1 - Based on Total Permanent Capital including Current Maturities of Long-Term Debt
2 - Consolidated Capital Structure

Exhibit No. DHM-1A
Schedule No. 13
Page 1 of 1

Comparative Risk Analysis

Average Return on Common Equity (%) for the Calendar Years 1974-1978 (1)

Company	Return on Common Equity 1974 (1)	1975 (2)	1976 (3)	1977 (4)	1978 (5)	Average (6)	Risk Ranking (7)
Carolina Power and Light Company	9.44	10.83	11.18	11.15	12.72	11.06	4
Duke Power Company	8.94	8.54	12.20	11.74	12.25	10.73	5
Niagara Mohawk Power Corporation	10.22	12.27	9.73	10.27	11.03	10.70	6
Ohio Edison Company	11.00	12.40	13.44	11.64	7.29	11.15	3
Detroit Edison Company	7.44	7.93	8.91	10.59	9.36	8.85	9
Long Island Lighting Company	11.40	13.44	14.05	13.85	12.76	13.10	1
Pennsylvania Power and Light Company	12.57	12.39	11.43	13.71	11.39	12.30	2
Virginia Electric and Power Company	8.98	10.84	9.87	10.16	9.85	9.94	7
Average	10.00	11.08	11.35	11.64	10.83	10.98	-
Philadelphia Electric Company	8.96	9.76	9.98	9.71	9.70	9.62	8

Source of Information: Moody's Public Utility Manuals
Annual Reports to Stockholders

Note 1: Earnings Per Share, Common (on Avg. shares)
Divided by Avg. Net Tangible Assets per Common Share (Actual)

Exhibit No. DHM-1A
Schedule No. 14
Page 1 of 1

Comparative Risk Analysis

Interest Coverage Before Income Tax (Including AFUDC) for the Calendar Years 1974-1978 (1)

Company	Interest Coverage Before Income Tax (Including AFUDC) 1974 (1)	1975 (2)	1976 (3)	1977 (4)	1978 (5)	Average (6)	Risk Ranking (7)
Carolina Power and Light Company	2.17	2.43	3.17	3.36	3.73	2.97	1
Duke Power Company	2.24	2.30	2.98	3.03	3.15	2.74	3
Niagara Mohawk Power Corporation	2.06	2.42	2.35	2.55	2.70	2.42	6
Ohio Edison Company	2.22	2.45	2.32	2.49	1.75	2.25	9
Detroit Edison Company	2.00	2.10	2.21	2.61	2.39	2.26	8
Long Island Lighting Company	2.28	2.53	2.74	2.82	2.79	2.63	5
Pennsylvania Power and Light Company	2.92	2.80	2.62	3.35	2.98	2.93	2
Virginia Electric and Power Company	1.92	2.28	2.39	2.43	2.44	2.29	7
Average	2.23	2.41	2.60	2.83	2.74	2.56	--
Philadelphia Electric Company	2.63	2.59	2.75	2.65	2.59	2.64	4

Source: Moody's Public Utility Manual - 1978
Annual Reports to Stockholders

Note 1: Includes All Interest Charges

Exhibit No. DHM-1A
Schedule No. 15
Page 1 of 3

Comparative Risk Analysis

Interest Coverage After Income Tax (Including AFUDC) for the Calendar Years (1)

Company	Interest Coverage After Income Tax (Including AFUDC) 1974 (1)	1975 (2)	1976 (3)	1977 (4)	1978 (5)	Average (6)	Risk Ranking (7)
Carolina Power and Light Company	1.94	2.02	2.24	2.31	2.46	2.19	4
Duke Power Company	1.81	1.80	2.16	2.21	2.34	2.06	6
Niagara Mohawk Power Corporation	2.11	2.26	2.23	2.32	2.39	2.26	3
Ohio Edison Company	2.17	2.27	2.35	2.30	1.88	2.19	4
Detroit Edison Company	1.76	1.78	1.93	2.09	2.00	1.91	9
Long Island Lighting Company	2.22	2.41	2.54	2.55	2.47	2.44	1
Pennsylvania Power and Light Company	2.36	2.31	2.28	2.55	2.39	2.38	2
Virginia Electric and Power Company	1.98	2.09	2.08	2.09	2.06	2.06	6
Average	2.04	2.12	2.23	2.30	2.25	2.19	--
Philadelphia Electric Company	2.07	2.00	2.09	2.06	2.03	2.05	8

Source of Information: Moody's Public Utility Manual - 1978
Annual Reports to Stockholders

Note 1: Includes All Interest Charges

Comparative Risk Analysis

Interest and Preferred Dividend Coverage After Income Taxes (Including AFUDC) for the Calendar Years 1974-1978 (1)

Company	Interest and Preferred Dividend Coverage 1974 (1)	1975 (2)	1976 (3)	1977 (4)	1978 (5)	Average (6)	Risk Ranking (7)
Carolina Power and Light Company	1.53	1.57	1.72	1.79	1.93	1.71	4
Duke Power Company	1.48	1.46	1.75	1.78	1.84	1.66	6
Niagara Mohawk Power Corporation	1.77	1.86	1.76	1.82	1.86	1.81	2
Ohio Edison Company	1.73	1.78	1.80	1.76	1.46	1.71	4
Detroit Edison Company	1.46	1.47	1.52	1.66	1.57	1.54	9
Long Island Lighting Company	1.74	1.82	1.90	1.93	1.87	1.85	1
Pennsylvania Power and Light Company	1.79	1.74	1.65	1.84	1.72	1.75	3
Virginia Electric and Power Company	1.57	1.67	1.62	1.64	1.61	1.62	8
Average	1.63	1.67	1.72	1.78	1.73	1.71	--
Philadelphia Electric Company	1.62	1.60	1.66	1.65	1.64	1.63	7

Source of Information: Moody's Public Utility Manual - 1978
Annual Reports to Stockholders

Note 1: Includes All Interest Charges

Exhibit No. DHM-1A
Schedule No. 15
Page 3 of 3

Comparative Risk Analysis

Average Dividend Yields for The Calendar Years 1974-1978 (1)

Company	Dividend Yields 1974 (1)	1975 (2)	1976 (3)	1977 (4)	1978 (5)	Average (6)	Risk Ranking (7)
Carolina Power and Light Company	9.48	10.24	7.88	7.34	8.55	8.70	8
Duke Power Company	9.11	9.22	7.63	7.52	8.67	8.43	9
Niagara Mohawk Power Corporation	10.55	11.39	9.02	8.42	9.29	9.73	4
Ohio Edison Company	10.20	11.11	8.88	8.52	10.24	9.79	3
Detroit Edison Company	11.37	12.75	10.13	8.75	10.05	10.61	2
Long Island Lighting Company	10.38	11.09	8.99	8.46	9.16	9.62	5
Pennsylvania Power and Light Company	9.83	10.11	8.65	8.24	8.88	9.14	7
Virginia Electric and Power Company	10.43	10.67	8.75	8.34	8.89	9.42	6
Average	10.17	10.82	8.74	8.20	9.22	9.43	-
Philadelphia Electric Company	11.34	12.32	9.98	9.17	10.36	10.63	1

Source of Information: Standard and Poor's Stock Guide
Companies' Annual Reports to Stockholders

Note 1: Dividend Yield Calculated Using Actual Dividend Per Share Divided by the Average of the High and Low Stock Price for Year

REVISED

Exhibit No. DHM-1A
Schedule No. 16
Page 1 of 1

Comparative Risk Analysis

Average Dividend Payout Ratio for the Calendar Years 1974-1978

Company	Dividend Payout Ratios 1974 (1)	1975 (2)	1976 (3)	1977 (4)	1978 (5)	Average (6)	Ranking (7)
Carolina Power and Light Company	72.4	67.8	65.9	65.9	60.3	66.5	3
Duke Power Company	80.5	86.4	63.8	67.6	66.7	73.0	6
Niagara Mohawk Power Corporation	69.4	59.6	77.0	75.6	72.2	70.8	5
Ohio Edison Company	97.9	85.1	78.0	87.1	147.9	99.2	9
Detroit Edison Company	99.3	96.7	87.3	72.5	86.4	88.4	7
Long Island Lighting Company	71.9	64.5	61.3	62.3	69.0	65.8	2
Pennsylvania Power and Light Company	61.5	62.7	67.2	56.1	67.1	62.9	1
Virginia Electric and Power Company	72.8	60.5	68.1	64.6	69.1	67.0	4
Average	78.2	72.9	71.1	69.0	79.8	74.2	-
Philadelphia Electric Company	90.6	88.2	85.9	94.1	96.3	91.0	8

Source: Annual Reports to Stockholders

Note 1: Dividend Payout Ratio Calculated by Dividing Dividends per Share by Earnings per Share

Exhibit No. DHM-1A
Schedule No. 17
Page 1 of 1

Comparative Risk Analysis

Average Market to Book Ratios for the Calendar Years 1974-1978 (1)

Company	Market to Book Ratios 1974 (1)	1975 (2)	1976 (3)	1977 (4)	1978 (5)	Average (6)	Ranking (7)
Carolina Power and Light Company	72.14	71.70	93.39	100.17	89.78	85.4	4
Duke Power Company	79.00	80.03	101.68	105.65	94.13	92.1	2
Niagara Mohawk Power Corporation	67.25	64.23	83.08	92.21	85.71	78.5	7
Ohio Edison Company	105.63	95.04	118.15	118.97	105.27	108.6	1
Detroit Edison Company	64.98	60.15	76.77	87.71	80.44	74.0	8
Long Island Lighting Company	78.94	78.18	95.87	101.93	96.13	90.2	3
Pennsylvania Power and Light Company	78.57	76.87	88.74	93.33	86.11	84.7	5
Virginia Electric and Power Company	62.66	61.48	76.75	78.77	76.64	71.3	9
Average	76.15	73.46	91.80	97.34	89.28	85.6	--
Philadelphia Electric Company	71.49	69.87	85.62	99.64	90.15	83.4	6

Source: Moody's Public Utility Manual - 1978
Annual Reports to Stockholders
Standard and Poor's Stock Guide

Note 1: Calculated by Dividing the Average of the High and Low Market Price for the Year by the Net Tangible Assets per Common Share

Exhibit No. DHM-1A
Schedule No. 18
Page 1 of 1

Comparative Risk Analysis

Average Earnings-Price Ratios for the Calendar Years 1974-1978 (1)

Company	Earnings Price Ratios 1974 (1)	1975 (2)	1976 (3)	1977 (4)	1978 (5)	Average (6)	Risk Ranking (7)
Carolina Power and Light Company	13.10	15.10	11.96	11.14	14.17	13.09	5
Duke Power Company	11.32	10.67	12.00	11.11	13.01	11.62	2
Niagara Mohawk Power Corporation	15.20	19.11	11.71	11.14	12.87	14.01	6
Ohio Edison Company	10.30	13.01	11.38	9.79	6.92	10.28	1
Detroit Edison Company	11.45	13.19	11.60	12.08	11.64	11.99	4
Long Island Lighting Company	14.44	17.19	14.66	13.59	13.28	14.63	9
Pennsylvania Power and Light Company	16.00	16.11	12.88	14.69	13.23	14.58	8
Virginia Electric and Power Company	14.32	17.63	12.86	12.91	12.85	14.11	7
Average	13.27	15.25	12.38	12.06	12.25	13.04	
Philadelphia Electric Company	12.54	13.97	11.62	9.75	10.76	11.73	3

Source of Information: Standard and Poor's Stock Guide

Note 1: Earnings/Price Ratios Calculated Using Earnings Per Share for the Year Divided by the Average High and Low Stock Prices for the Year.

Comparative Risk Analysis

Internal Cash Generation as a Percentage of Construction Expenditures for the Years 1974-1978 (1)

Company	Internal Cash Generation/Construction Expenditures 1974 (1)	1975 (2)	1976 (3)	1977 (4)	1978 (5)	Average (6)	Ranking (7)
Carolina Power and Light Company	17.55	44.56	103.17	100.07	64.70	66.01	1
Duke Power Company (2)	N/A	N/A	N/A	N/A	N/A	---	---
Niagara Mohawk Power Corporation	32.31	63.69	47.43	46.91	46.47	47.36	2
Ohio Edison Company (2)	N/A	N/A	N/A	N/A	N/A	---	---
Detroit Edison Company (2)	N/A	N/A	N/A	N/A	N/A	---	---
Long Island Lighting Company	24.35	26.25	27.82	24.60	25.75	25.75	6
Pennsylvania Power and Light Company	33.26	31.44	30.49	39.29	33.06	33.51	5
Virginia Electric and Power Company	30.79	45.63	47.54	44.83	56.49	45.06	3
Average	27.65	42.31	51.29	51.14	45.29	43.54	---
Philadelphia Electric Company	28.36	37.77	51.85	45.61	47.55	42.23	4

Source: Annual Reports to Stockholders
Moody's Public Utility Manuals

Notes:

1. Internal Cash Generation Calculated by Deducting Dividend Requirements from Funds Provided by Operations (Excluding AFUDC). Construction Expenditures Include Nuclear Fuel and Exclude AFUDC.
2. Data for these Companies Was Not Available for Certain Years or Was Not Available in a Manner Consistent with this Presentation at The Time The Report Was Prepared.

Construction Expenditures as a Percentage of Gross Utility Plant and Internal Cash Generation to Construction Expenditures for Moody's 24, Staff Barometer Group and Philadelphia Electric Company--Estimated for the Period 1979-1981

	Construction/ Gross Plant (1)	Internal Cash Generation/ Construction Expenditures (2)
Carolina Power and Light Company	100%	29%
Duke Power Company	72	43
Niagara Mohawk Power Corporation	25	49
Ohio Edison Power Company	45	17
Detroit Edison Company	54	39
Long Island Lighting Company	59	34
Pennsylvania Power and Light Company	64	25
Virginia Electric and Power Company	59	38
Average	60	34
Philadelphia Electric Company	32	48
Moody's 24 Public Utilities	42	51

Source of Information: Salomon Brothers - Electric Utility Regulation, Quality and Earnings, August 21, 1979

Comparative Risk Analysis

Allowance for Funds Used During Construction as a Percentage of Income Available for Common Equity for the Years 1974-1978 (1)

Company	AFUDC/Income Available for Common Equity 1974 (1)	1975 (2)	1976 (3)	1977 (4)	1978 (5)	Average (6)	Risk Ranking (7)
Carolina Power and Light Co.	105.83	119.93	74.70	57.22	57.43	83.02	9
Duke Power Company	83.69	66.18	44.50	56.58	66.30	63.45	5
Niagara Mohawk Power Corporation	33.86	30.80	24.39	34.80	40.00	32.77	1
Ohio Edison Company	62.89	73.92	61.62	54.77	95.22	69.68	8
Detroit Edison Company	57.35	60.30	58.96	44.75	60.55	56.38	4
Long Island Lighting Company	38.47	54.26	58.40	62.91	59.46	54.70	3
Pennsylvania Power and Light Company	30.57	50.12	57.39	43.80	66.16	49.61	2
Virginia Electric and Power Company	67.95	56.31	65.41	70.15	59.14	63.79	6
Average	60.08	63.98	55.67	53.12	63.03	59.18	--
Philadelphia Electric Company	74.21	62.00	61.78	64.81	64.40	65.44	7

Source of Information: Annual Reports to Stockholders
Moody's Public Utility Manuals

Note 1: Computation - Allowance for Equity and Borrowed Funds used During Construction Divided by Income Available for Common Stock

Exhibit No. DHM-1A
Schedule No. 21
Page 1 of 1

Comparative Risk Analysis

Effective Tax Rates for
the Calendar Years 1974-1978

Company	Effective Tax Rates 1974 (1)	1975 (2)	1976 (3)	1977 (4)	1978 (5)	Average (6)	Risk Ranking (7)
Carolina Power and Light Company	1.2	20.0	38.9	44.3	46.7	30.2	2
Duke Power Company	28.4	39.1	41.1	35.4	34.5	35.7	1
Niagara Mohawk Power Corporation	--	11.3	13.7	12.1	12.1	9.8	7
Ohio Edison Company	9.3	11.4	--	12.8	--	6.7	9
Detroit Edison Company	23.7	26.7	24.9	32.1	29.8	27.4	5
Long Island Lighting Company	6.5	10.4	4.6	4.7	11.5	7.5	8
Pennsylvania Power and Light Company	32.0	27.0	20.8	34.2	29.9	28.8	4
Virginia Electric and Power Company	--	15.0	22.6	23.9	26.3	17.6	6
Average	12.6	20.1	20.8	24.9	23.9	20.5	--
Philadelphia Electric Company	24.4	30.8	31.7	29.3	28.2	28.9	3

Source of Information: The Value Line Investment Survey

Exhibit No. DHM-1A
Schedule No. 22
Page 1 of 1

Comparative Risk Analysis

Electric Generation by Fuel Mix
1979 Estimated

Company	Fuel Mix						Composite Risk Factor (1)	Risk Ranking
	Coal (1)	Nuclear (2)	Oil (3)	Gas (4)	Hydro (5)	Total (6)	(7)	(8)
Carolina Power and Light Company	55	41	2	--	2	100	2.43	5
Duke Power Company	68	29	--	--	3	100	2.26	3
Niagara Mohawk Power Corporation	15	32	40	--	13	100	2.99	8
Ohio Edison Company	88	10	2	--	--	100	2.14	1
Detroit Edison Company	88	--	12	1	(1)	100	2.24	2
Long Island Lighting Company	--	--	100	--	--	100	4.00	9
Pennsylvania Power and Light Company	79	--	19	--	2	100	2.36	4
Virginia Electric and Power Company	29	35	32	2	2	100	2.95	7
Average	53	18	26	.4	2.6	100	2.67	--
Philadelphia Electric Company	32	33	30	--	5	100	2.88	6

Source: Salomon Brothers - Electric Utility Regulation, Quality, and Earnings - August 21, 1979.

Note 1: The Composite Risk Factor was Calculated by Assigning the Following Risk Rates to the Fuel Mix with 1 Representing the Lowest Risk and 4 Representing the Highest Risk:

Fuel Mix	Risk Rate
Hydro	1
Gas	1
Coal	2
Nuclear	3
Oil	4

Sample Computation
Carolina Power and Light Company

Coal	.55	x	2	=	1.10
Nuclear	.41	x	3	=	1.23
Oil	.02	x	4	=	.08
Hydro	.02	x	1	=	.02
	1.00				2.43

Exhibit No. DHM-1A
Schedule No. 23
Page 1 of 1

Relative Risk Analysis

Electric Sales by KWH for the Years 1974-1978 and Compound Growth Rate Through 1978

Company	Electric Sales by KWH 1974	1975	1976	1977	1978	Compound Growth Rate	Risk Ranking
Carolina Power and Light Company	24,076	24,118	26,176	27,317	27,993	3.84%	7
Duke Power Company	42,344	42,138	45,633	48,848	49,939	4.21	8
Niagara Mohawk Power Corporation	30,914	30,319	31,802	31,367	32,382	1.17	1
Ohio Edison Company	20,682	19,981	21,202	22,229	22,309	1.91	3
Detroit Edison Company	33,412	32,419	35,328	36,614	37,148	2.69	4
Long Island Lighting Company	11,735	12,002	12,242	12,720	13,227	3.04	5
Pennsylvania Power and Light Company	18,963	19,113	20,354	21,201	21,844	3.60	6
Virginia Electric and Power Company	29,935	31,488	34,113	35,457	37,067	5.49	9
Average	26,508	26,447	28,356	29,469	30,239	3.24	-
Philadelphia Electric Company	25,556	25,335	26,273	27,197	27,394	1.75	2

Source: Annual Stockholder's Report
Moody's Public Utility Manual

Exhibit No. DHM-1A
Schedule No. 24
Page 1 of 1

Comparative Risk Analysis

Regulatory Environment - Barometer Group
and Philadelphia Electric Company

	Risk Factor (1) (1)	Risk Ranking (2)
Carolina Power and Light Company	4	1
Duke Power Company	4	1
Niagara Mohawk Power Corporation	7	4
Ohio Edison Company	7	4
Detroit Edison Company	6	3
Long Island Lighting Company	7	4
Pennsylvania Power and Light Co.	7	4
Virginia Electric and Power Co.	7	4
Average	6.13	---
Philadelphia Electric Company	7	4

Note 1: Risk factors were calculated by assigning a risk rate from 1 to 10 (1 lowest risk, 10 highest risk) to each of the Salomon Brothers regulatory rankings as shown on Page 2 of Schedule 25.

TABLE I

STATE REGULATORY COMMISSION RANKING

(A IS HIGHEST, E IS LOWEST)

A (1)	B+ (3)	C+(6)	C (7)
Indiana	Florida	Arkansas	Idaho
	Utah	Colorado	Illinois
A- (2)		Delaware	Kansas
	B (4)	FERC	Maryland
Texas		Hawaii	Minnesota
	North Carolina	Kentucky	Nevada
	Wisconsin	Michigan	New Jersey
		New Hampshire	New York
	B- (5)	Oklahoma	Ohio
		Vermont	Pennsylvania
	Arizona	Wyoming	South Carolina
	New Mexico		Virginia
			Washington

C- (8)	D (9)	E (10)
California	Connecticut	Alabama
Iowa	District of Columbia	Louisiana
Maine	Georgia	Mississippi
Oregon	Massachusetts	North Dakota
	Missouri	Rhode Island
	Montana	South Dakota
	West Virginia	

Source of Information: Salomon Brothers Electric Utility Regulation, Quality, and Earnings August 21, 1979, Page 8

Exhibit No. DHM-1A
Schedule No. 25
Page 2 of 2

Comparative Risk Analysis

Current (1978) Risk Analysis Using Various Financial and Operating Indices and Ratios for Barometer Group and Philadelphia Electric Company

Company	Common Equity Ratio (1)	Risk Ranking (2)	Return on Common Equity (3)	Risk Ranking (4)	Interest Coverage Before-Tax (5)	Risk Ranking (6)	Interest Coverage After-Tax (7)	Risk Ranking (8)
Carolina Power and Light Company	38.7%	1	12.72%	2	3.73x	1	2.46x	2
Duke Power Company	37.0	3	12.25	3	3.15	2	2.34	5
Niagara Mohawk Power Corporation	36.9	4	11.03	5	2.70	5	2.39	3
Ohio Edison Company	32.7	9	7.29	9	1.75	9	1.88	9
Detroit Edison Company	34.9	6	9.36	8	2.39	8	2.00	8
Long Island Lighting Company	38.6	2	12.76	1	2.79	4	2.47	1
Pennsylvania Power and Light Company	35.3	5	11.39	4	2.98	3	2.39	3
Virginia Electric and Power Company	34.3	8	9.85	6	2.44	7	2.06	6
Average	36.0	--	10.83	--	2.74	--	2.25	--
Philadelphia Electric Company	34.4	7	9.70	7	2.59	6	2.03	7

Source of Information: Schedules No. 13, 14, 15, Exhibit No. DHM-1A

Comparative Risk Analysis

Current (1978) Risk Analysis Using Various Financial and Operating Indices and Ratios for Barometer Group and Philadelphia Electric Company

Company	Fixed Charge Coverage After-Tax (1)	Risk Ranking (2)	Dividend Yield (3)	Risk Ranking (4)	Dividend Payout Ratio (5)	Risk Ranking (6)	Market/ Book Ratio (7)	Risk Ranking (8)
Carolina Power and Light Company	1.93x	1	8.55%	9	60.3%	1	89.8%	5
Duke Power Company	1.84	4	8.67	8	66.7	2	94.1	3
Niagara Mohawk Power Corporation	1.86	3	9.29	4	72.2	6	85.7	7
Ohio Edison Company	1.46	9	10.24	2	147.9	9	105.3	1
Detroit Edison Company	1.57	8	10.05	3	86.4	7	80.4	8
Long Island Lighting Company	1.87	2	9.16	5	69.0	4	96.1	2
Pennsylvania Power and Light Company	1.72	5	8.88	7	67.1	3	86.1	6
Virginia Electric and Power Company	1.61	7	8.89	6	69.1	5	76.6	9
Average	1.73	--	9.22	--	79.8	--	89.3	--
Philadelphia Electric Company	1.64	6	10.36	1	96.3	8	90.2	4

Source of Information: Schedules No. 15, 16, 17, 18 of Exhibit No. DHM-1A

Comparative Risk Analysis

Current (1978) Risk Analysis Using Various Financial and Operating Indices and Ratios for Barometer Group and Philadelphia Electric Company

Company	Earnings/ Price Ratios (1)	Risk Ranking (2)	Internal Cash Generation/ Constr. Expend. (3)	Risk Ranking (4)	AFUDC/ Income Avail. for C.E. (5)	Risk Ranking (6)	Effective Tax Rates (7)	Risk Ranking (8)
Carolina Power and Light Company	14.17%	9	29.0%	7	57.4%	2	46.7%	1
Duke Power Company	13.01	6	43.0	3	66.3	8	34.5	2
Niagara Mohawk Power Corporation	12.87	5	49.0	1	40.0	1	12.1	7
Ohio Edison Company	6.92	1	17.0	9	95.2	9	--	9
Detroit Edison Company	11.64	3	39.0	4	60.6	5	29.8	4
Long Island Lighting Company	13.28	8	34.0	6	59.5	4	11.5	8
Pennsylvania Power and Light Company	13.23	7	25.0	8	66.2	7	29.9	3
Virginia Electric and Power Company	12.85	4	38.0	5	59.1	3	26.3	6
Average	12.25	--	34.3	--	63.0	--	23.9	--
Philadelphia Electric Company	10.76	2	48.0	2	64.4	6	28.2	5

Source of Information: - Schedules No. 19, 20, 21, 22 of Exhibit No. DHM-1A

- Internal Cash Generation/Construction Expenditures - 1979-1981 Estimates from Salomon Brothers "Electric Utility Regulation, Quality and Earnings"

- Effective Tax Rates - 1979 Estimates from Value Line Investment Survey

Exhibit No. DHM-1A
Schedule No. 26
Page 3 of 4

Comparative Risk Analysis

Current (1978) Risk Analysis Using Various Financial and Operating Indices and Ratios for Barometer Group and Philadelphia Electric Company

Company	Fuel Mix (1)	Risk Ranking (2)	Growth Rate in Kwh Sales 1977-1978 (3)	Risk Ranking (4)	Regulatory Environment (5)	Risk Ranking (6)	Value-Line Beta (7)	Risk Ranking (8)
Carolina Power and Light Company	2.43	5	2.47	5	4	1	.80	7
Duke Power Company	2.26	3	2.23	4	4	1	.80	7
Niagara Mohawk Power Corporation	2.99	8	3.24	7	7	4	.65	2
Ohio Edison Company	2.14	1	.36	1	7	4	.70	3
Detroit Edison Company	2.24	2	1.46	3	6	3	.70	3
Long Island Lighting Company	4.00	9	3.99	8	7	4	.75	6
Pennsylvania Power and Light Company	2.36	4	3.03	6	7	4	.60	1
Virginia Electric and Power Company	2.95	7	4.54	9	7	4	.80	7
Average	2.67	—	2.67	—	6.13	—	.73	—
Philadelphia Electric Company	2.88	6	.72	2	7	4	.70	3

Source of Information: - Schedules No. 23, 24, 25 of Exhibit No. DHM-1A

- Value Line Investment Survey

Exhibit No. DHM-1A
Schedule No. 26
Page 4 of 4