

FEB 18 1983

BEFORE

SECRETARY'S OFFICE
Public Utility Commission

THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

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In re: R-822169 - Pennsylvania Power & Light Company.
Investigation into a requested \$315 million
dollar annual rate increase. Hearing.

Harrisburg, Pennsylvania

February 15, 1983

Pages 466 to 594, inclusive

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THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

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In re: R-822169 - Pennsylvania Power & Light Company.
Investigation into a requested \$315 million dollar
annual rate increase. Hearing.

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Verbatim report of hearing held in
Hearing Room 1, North Office Building,
Harrisburg, Pennsylvania,

Tuesday,
February 15, 1983
at 10:00 a.m.

BEFORE

JOSEPH J. KLOVEKORN, ADMINISTRATIVE LAW JUDGE

- - - - -

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1 JUDGE KLOVEKORN: Okay. Shall we begin? I'll call to
2 order this hearing in R-822169, Pennsylvania Public Utility
3 Commission versus Pennsylvania Power and Light Company. Do
4 we have any preliminary matters to discuss before we begin
5 with witnesses? Mr. MacNicholas?

6 MR. MACNICHOLAS: Thank you, Your Honor. Last
7 Thursday, when we were discussing the change in the schedule
8 which now calls for filings to be made on rate structure,
9 rate design on March 4, and then appearances, I suppose by
10 witnesses, I suppose, soon there after, we went back and
11 checked with witness consultants and it's virtually
12 impossible for them to have their filing ready by the 4th.

13 Part of the problem, of course, is the fact that we
14 have -- I don't know about others, but we have been awaiting
15 responses to interrogatories which were received yesterday
16 at my office at 4:05.

17 I have sent these on down to the Drazen & Brubaker
18 people and I suppose by today they're starting to work on
19 them.

20 In any event, the March 4 date for filing is virtually
21 impossible for us, sir.

22 We just cannot have that information absorbed and
23 considered and reviewed and analyzed and then worked into
24 testimony. So I would ask that the Bench reconsider the
25 present schedule and to move it perhaps even back to the

1 14th, when it was originally due, sir.

2 MR. YOUNG: Your Honor, it seems to me that the
3 respondent here is going to have no more than two weeks to
4 prepare its rebuttal testimony under the present schedule
5 after these parties present their case under the current
6 schedules.

7 They have had the rate filing for well on to two
8 months at this point and if they got the answers to
9 interrogatories yesterday, they have two weeks with them
10 before the date that was scheduled. I fail to see that
11 that's such a burden that it can't be met.

12 MR. ZWALLY: Your Honor, on that basis, the company
13 will have two weeks from the filing of our testimony for
14 their rebuttal. So two weeks for one party is two weeks for
15 the other party.

16 MR. YOUNG: We are offering you two weeks from
17 yesterday until the 4th. Then we will take two weeks on our
18 end. That's what I am saying.

19 MR. EATON: Your Honor, Jackson Eaton on behalf of
20 Ross Bicycle and other parties. The change in schedules has
21 caused similar problems with the scheduling of our witnesses
22 and preparation of testimony that they are preparing. I am
23 wondering whether there is any possibility of the Court
24 considering simply adding an additional week to the hearing
25 schedule.

1 As I understood, the matter was first considered by
2 Judge Mindlin while he had hoped and had scheduled all
3 witnesses by the 8th, there was the possibility of, he
4 indicated that if worse came to worse, it was my
5 recollection that there would be some extra time after that.
6 I would think that that, if it is convenient with your
7 schedule, would make the brief writing time a bit shorter,
8 but I think substantially all of the information that the
9 parties would need for that would be in by the conclusion of
10 the main testimony and I think that would solve everyone's
11 scheduling problems.

12 MR. YOUNG: Since Mr. Eaton was last here, Your Honor,
13 we have already used up those two weeks and I think more.
14 So I don't know if they are still available.

15 MR. RYAN: How did we use them up?

16 MR. YOUNG: Because we moved the whole schedule back.

17 MR. EATON: I am talking about the week of April 11.

18 MR. YOUNG: So am I. We now have matters scheduled
19 for the week of April 5, 11, 19, 26th.

20 MR. RYAN: Then why are you being pushed for rebuttal.
21 We thought your problem was trying to get the rebuttal in.
22 When do you propose to put your rebuttal on.

23 MR. YOUNG: We are supposed to put our rebuttal on the
24 19th, as I understand it. But that means you would have to
25 get it sometime before that. So that --

1 MR. ZWALLY: Your Honor, if rebuttal is on the 19th,
2 then they will have our direct testimony the 14th. That's
3 almost a month. I don't really see what the company's
4 complaint is.

5 MR. YOUNG: We are talking about cross examination of
6 your testimony. That's what we are talking about. We are
7 scheduled to cross examine your testimony on the -- at the
8 moment, on the 15th.

9 MR. RYAN: If you cross examined our testimony on the
10 31st of March and the 1st of April, you would have two weeks
11 before your rebuttal. If you said you are putting it on the
12 19th.

13 MR. YOUNG: There can't be any hearings that week. We
14 have already decided that. That's why we are on the 15th
15 and the 18th for your testimony.

16 MR. RYAN: I didn't know about any hearings beyond the
17 date of the most recent letter which was the final hearing
18 on the 8th. Are there hearings now scheduled, you are
19 saying, for at least two more weeks after that?

20 MR. YOUNG: We had scheduled cross examination of
21 non-Susquehanna witnesses on the 15th to the 18th, then
22 Susquehanna on the week of April 5th and 12th, at the last
23 set of hearings.

24 MR. WIDOFF: Your Honor, Mark Widoff representing the
25 City of Harrisburg. We have just, within the past several

1 days, been retained by the City of Harrisburg to present the
2 case on their behalf primarily in the rate structure area.

3 We would simply like to lend our voice and support of
4 the request for additional time in light of our particular
5 problems and also to ask Your Honor if he would consider
6 permitting us, at some point, to cross examine Mr. Baldwin,
7 since we have just gotten into the case, it is simply not
8 going to be possible for us to cross examine tomorrow or
9 Thursday.

10 Basically, we want to raise both problems with you.
11 First of all, to lend our support to the request for some
12 additional time in terms of submission of direct testimony
13 and secondly, to ask if some arrangements might be made for
14 us to cross examine Mr. Baldwin.

15 MR. YOUNG: Your Honor, I would certainly object to
16 the latter. It seems to me that we can't swing the hearing
17 by the times that people finally decide to get into this
18 proceeding and the rates were filed November 14th. There's
19 been plenty of time for all the parties to get up to speed.

20 MR. ZWALLY: Your Honor, if I may add one more point
21 and a suggestion that perhaps will resolve our problem. One
22 of the problems is that our witness will not be available
23 the week of March 15th and that was when he was scheduled
24 for cross examination.

25 The reason is that he has made other arrangements and

1 those arrangements were made in reliance upon the fact that
2 he was intending to be here the following week. That was
3 the week that was canceled. That is part of our problem.
4 The preparation of direct testimony is also part of the
5 problem. I understand that Your Honor will be available
6 March 30, 31 and April 1.

7 JUDGE KLOVEKORN: No.

8 MR. ZWALLY: Excuse me.

9 JUDGE KLOVEKORN: I will be available March 31.

10 MR. ZWALLY: Excuse me. I would like to suggest that
11 the filing of rate structure testimony be moved up to March
12 14 and that we begin cross examination of rate structure
13 witnesses on March 30 and 31. I am sorry. 31 and April 1.

14 MR. RYAN: We would be prepared to take the rebuttal
15 testimony three days before the appearance of the rebuttal
16 witnesses.

17 MR. YOUNG: That has nothing to do with it. We are
18 talking about cross examination here.

19 MR. RYAN: You were saying you needed more time to get
20 it to us.

21 MR. YOUNG: I wasn't talking about rebuttal at all.
22 I was simply reading off the schedule to you. I think we
23 ought to leave it at the present week. I would be -- I mean
24 if the rate design witnesses will get their testimony in by
25 March 7, I think we can cope with cross examination the

1 following week, but I don't see any reason to provide more
2 time than that.

3 MR. ZWALLY: Your Honor, we can't do that. Our
4 witness is not available. Our witness made his arrangements
5 on the basis of prior schedule and it can't work.

6 MR. RYAN: We have one witness for three industrial
7 customers, too. At least we have tried -- 14.

8 MR. YOUNG: How many rate structure witnesses do we
9 have? Nobody else knows that, yet.

10 MR. MACNICHOLAS: How many what?

11 MR. YOUNG: How many rate design witnesses do we have
12 from your people?

13 MR. MACNICHOLAS: We only have one.

14 MR. YOUNG: You mean all of you will have one?

15 MR. RYAN: All of us here are sponsoring the same
16 witness, Morris Brubaker. One. They said they have one --

17 MR. EATON: We have one.

18 MR. YOUNG: Who is "they"?

19 MR. RYAN: Jackson Eaton from Allentown.

20 MR. WIDOFF: We may have one, Your Honor, depending on
21 what the schedule is which you ultimately arrive at.

22 MR. MACNICHOLAS: St. Regis has to speak up. Ken?

23 MR. ELSDORFER: I am consultant for St. Regis paper.
24 We plan to have three witnesses.

25 MR. YOUNG: Three? All on rate structure?

1 MR. EISDORFER: Yes.

2 MR. YOUNG: I can't say there is much consolidation
3 going on.

4 MR. MACNICHOLAS: I didn't hear you, Bob.

5 MR. YOUNG: I said it doesn't look to me as there is
6 much consolidation of witnesses going on. I think we ought
7 to stick to the 7th, as a filing date of cross examination
8 of all of them, certainly that can be here on the week of
9 the 15th.

10 JUDGE KLOVEKORN: The way the schedule reads now we
11 are going through the week of April 12th, hearings on April
12 12th, 13th, 14th?

13 MR. YOUNG: That doesn't include rebuttal and
14 surrebuttal.

15 MR. RYAN: Which is to occur when?

16 MR. YOUNG: Sometime after that, I guess.

17 JUDGE KLOVEKORN: Off the record.

18 (Discussion off the record.)

19 JUDGE KLOVEKORN: Let's go back on the record. While
20 we were off the record, we had a brief discussion on
21 scheduling. I have granted a request of several of the
22 intervenors in this case that they have until March 14th to
23 submit their testimony. Cross examination of these
24 witnesses will be March 31 and April 1. Do we have any
25 others?

1 MR. YOUNG: What does that leave for the week of the
2 15th to the 18th? Just rate of return?

3 JUDGE KLOVEKORN: That leaves rate of return and Staff
4 and Consumer Advocate rate structure.

5 MR. POPOWSKY: Your Honor, are you saying we have to
6 file our rate structure testimony on March 4 and the
7 industrials will file on March 14th?

8 JUDGE KLOVEKORN: Yes.

9 MR. POPOWSKY: I would register an objection to that.

10 JUDGE KLOVEKORN: Your objection is registered for the
11 record.

12 MR. POPOWSKY: I don't feel we should be required to
13 file our rate structure on that date although we are
14 prepared to file on that day. We don't intend to have our
15 rate structure ten days before their witnesses. We are
16 cross examining the same witnesses under the same schedule
17 as they are. Could I also note, Your Honor, the week of
18 April 19th you have scheduled for rebuttal. I take it that
19 would not be Susquehanna rebuttal and depending on what we
20 see when we do get the Susquehanna type rebuttal we schedule
21 hearings perhaps the week of April 26th.

22 JUDGE KLOVEKORN: The parties can schedule whatever
23 they want on whatever day they want. Just give me some
24 notice. I am giving parties notice I am closing the record
25 on April 22, no matter what. Whatever you do between now

1 and April 22 is fine with me.

2 MR. POPOWSKY: In that case, again, Your Honor, I
3 would register an objection to closing the record on April
4 22 and I hope that at that time we will be able to find some
5 additional time, taking time away from briefing, perhaps --

6 JUDGE KLOVEKORN: We can't take much more time away
7 from briefing. That gives me two months without your
8 briefing to write a decision.

9 MR. POPOWSKY: How much time did you need? Could I
10 ask respectfully how much time do you think you would need
11 after the reply briefs were filed?

12 JUDGE KLOVEKORN: Off the record.

13 (Discussion off the record.)

14 JUDGE KLOVEKORN: Back on the record. Mr. Wilmarth?

15 MR. WILMARTH: Yes. I have one preliminary matter,
16 Your Honor. During hearings of February 10, I had
17 identified and cross examined on two utility exhibits. They
18 are PP&L Exhibit 200.1892109, Witness Hecht and 200.182039
19 also witness Hecht. Through oversight, I neglected to move
20 those two exhibits into evidence and I would like to do so
21 at this time.

22 JUDGE KLOVEKORN: Without objection, they will be
23 received into the record.

24 MR. MCCLELLAND: Your Honor, there are also some
25 outstanding Susquehanna discovery issues, but let me try to

1 resolve those today before I bring them up.

2 JUDGE KLOVEKORN: Do we have anything else?

3 MR. POPOWSKY: Your Honor, if I could make one more
4 suggestion, as I am sure you recall, in the Philadelphia
5 Electric case, we proceeded with rebuttal and surrebuttal on
6 the CWIP issue CWIP issue apart from the main case and
7 briefing was done on a staggered basis. I am not suggesting
8 at this point that we follow that procedure. I just wanted
9 to raise that possibility in the event that the Susquehanna
10 issues, especially the Susquehanna audit issues which I
11 think will be very complex and technical and may be possible
12 to be done separately, I wanted to raise the possibility
13 that we may be able to work on our main briefs in the main
14 part of the case while holding rebuttal and surrebuttal
15 issues on the Susquehanna audit issue. I wanted to raise
16 that at this time. It's not necessary, yet.

17 JUDGE KLOVEKORN: Thank you. Would you call your
18 witness, Mr. Young.

19 MR. YOUNG: Your Honor, the company calls Mr. Brennan.
20 I think he needs to be sworn.

21 JUDGE KLOVEKORN: Good morning Mr. Brennan.

22 THE WITNESS: Good morning.

23 JOSEPH F. BRENNAN, called as a witness, having been
24 duly sworn, was examined and testified as follows:

25 DIRECT EXAMINATION

1 JUDGE KLOVEKORN: You may be seated.

2 BY MR. YOUNG:

3 Q. Mr. Brennan, your testimony has been identified and
4 moved into evidence. I ask you now whether you have any
5 items of factual updating which should be applied to your
6 Statement 14 or your Exhibit JFB-1.

7 A. Yes. At the time I prepared the testimony and the
8 related exhibit, the company had plans to sell certain
9 securities. Some of those securities have now actually been
10 sold and so we don't need to any longer estimate what the
11 cost rates were. We know what they are.

12 In addition, a rather large part of the company's long
13 term debt, namely 550 million dollars of their long term
14 debt is in effect, pegged to the prime rate and the prime
15 rate, since the time the testimony was prepared is now
16 different.

17 So we can now recompute the composite cost of debt and
18 preferred stock with these additional known facts. I might
19 add that in my direct testimony I did urge the Commission
20 when it makes its decision in this case to impute, at the
21 time it made its decision, whatever the facts were then,
22 relative to any other planned sales of securities, for the
23 purpose of arriving at a cost of money that was as much
24 actual and cost based as is possible.

25 Specifically, with respect to first, preferred stock,

1 the company had proposed to sell \$34 million of preferred
2 stock and we used the cost rate of 14 percent. At the time
3 we prepared the testimony the company actually had a
4 commitment to sell it at 14 percent and they now have, in
5 fact, delivered it, so there's no change there.

6 With respect to the \$50 million of preference stock,
7 we estimated 13 percent at the dividend rate and we
8 estimated that after the issuance and selling expenses were
9 taken into account it would be 14 percent. We now know,
10 because that stock was actually sold, that the dividend rate
11 was indeed 13 percent.

12 So that instance was right on, and the cost to
13 maturity, in effect, is 13.93 percent. But that changed
14 because that's just one of a dozen or so issues, has no
15 effect on the composite cost of preferred and preference
16 stock which will stand at 99.43 percent as shown on Page 2
17 of Schedule 1 at July 31, 1983.

18 With respect to the long term debt, as I previously
19 indicated, a large part of this company's long term debt is
20 pegged to the prime rate, namely the secured term notes and
21 the revolving credit line. We employed the prime rate in
22 existence at the time this was prepared which was 12 and a
23 half percent.

24 We now know that the prime rate is 11 percent. The
25 end result of that change is to cause the composite cost

1 rate for long term debt to change from 11.25 to 10.92.

2 That, I might add for clarification, new number of
3 10.92 also reflects an assumption of, if the planned \$50
4 million of new first mortgage bonds to be sold in the middle
5 of 1983 took place at 12 percent, as compared to the 13
6 percent we assumed, which I might add, was lower than the
7 going rate at the time we prepared this schedule, that would
8 have an effect of two one hundredths of one percent.

9 So, if you will refer to Page 2 of Schedule 1, the
10 only change there at this time that is more current data
11 would be that the composite cost rate for long term debt
12 would become 10.92 instead of 11.25.

13 The end result of that change would be to cause the
14 weighted composite cost of debt to become 5.30 instead of
15 5.46 and the result of that, that change would cause the
16 overall cost of capital to become 12.82 instead of the 12.98.

17 Now, again, I would urge the Commission between now
18 and the time it makes its decision in this case to input
19 whatever later data is available to it on an actual basis at
20 the time it makes its decision. So if the prime rate goes
21 up or down from the 11 percent, for instance, that I have
22 used now, that adjustment should be made.

23 MR. MCCLELLAND: Mr. Young, I would appreciate if the
24 witness could reference the particular issuances in the
25 schedules as well as the composite result of it. Could you

1 do that?

2 THE WITNESS: Sure. We will be happy to provide, I
3 might add, an updated schedule for any schedule affected by
4 these changes I am giving you. We intend do do so before
5 the record is closed, whatever the specific data is. The
6 specific schedules that are changed would be Page 2 of
7 Schedule 3, the last item shown under first mortgage bonds,
8 if you made the assumption of 12 percent and the lower part
9 of the schedule where it shows secured term notes and
10 revolving credit line, substitute 11 percent for 12 and a
11 half percent and the arithmetic would just follow.

12 On Page 4 of Schedule 3, just the details of the
13 substitution of 12 for 13 percent. Everything else would
14 remain the same. The fallout would be 12.09 instead of
15 13.09. On Page 2 of Schedule 4, the only change would be in
16 the third column under effective cost rate, the \$13.00
17 proposed series that was proposed at the time and there was
18 no commitment at the time, we used a 13 percent estimate,
19 that is in fact the actual now, since it's sold, but the
20 cost at maturity in effect is 13.93 instead of 14.00 because
21 there was a change in the estimated issuance and selling
22 expenses.

23 But that doesn't affect the last column because 13.93
24 times the percent, the total of 5.89 still produces 0.82.
25 We will supply updated schedules for this later data and we

1 intend to supply updated schedules with respect to any other
2 data that becomes actual as opposed to estimates.

3 For instance, when we prepared the testimony and
4 exhibit, the results of operation for PP&L or for the
5 barometer group of electric companies we employed were not
6 available. They still are not available for four companies.
7 When they do become available, we'll simply supply the 1982
8 data in the form of an updated schedule.

9 MR. YOUNG: That's all I have of Mr. Brennan. He's
10 available for cross.

11 JUDGE KLOVEKORN: Thank you. Mr. Wilmarth?

12 MR. QUAIN: Your Honor. Staff has no questions for
13 Mr. Brennan at this time.

14 JUDGE KLOVEKORN: Mr. McClelland?

15 MR. MCCLELLAND: Thank you, Your Honor.

16 CROSS EXAMINATION

17 BY MR. MCCLELLAND:

18 Q. Mr. Brennan, I am Phil McClelland from the Consumer
19 Advocate?

20 A. Good morning, Mr. McClelland.

21 Q. We may end up speaking in loud voices because of
22 the noises outside, but it is only that.

23 Mr. Brennan, on Page 2 of your testimony, and when I
24 speak of your testimony I am referring to Statement 14 -- you
25 refer to the 15.75 percent cost of common equity opportunity

1 rate which was last afforded the company on January 30, 1981.

2 Would you agree with that?

3 A. Yes.

4 Q. And you are now recommending a 17 percent number?

5 A. Opportunity rate, that's correct. Although the
6 company's filing is not intended to produce 17 percent as I
7 also noted in my testimony.

8 Q. Mr. Brennan, I checked PP&L's dividend yield as of
9 last Friday and I found it to be about 10.1 percent. Would
10 you agree with that?

11 A. Yes.

12 Q. Would you also agree that the average dividend
13 yield for '81 was about 13.34 percent and I got that from
14 the PP&L "Profile", Page 18, if you need to refer to that.

15 A. You say for the year '81?

16 Q. Yes. 1981.

17 A. Yes. 13.34 for the year 1981.

18 Q. Mr. Brennan, I also looked at the stock highs and
19 lows and the dividend for that year and I came to the
20 conclusion that the dividend yield was only as low as 12.19
21 percent in 1981.

22 A. 12.19?

23 Q. 19 percent.

24 A. Dividend yield?

25 Q. Yes.

1 A. That was the low, you are saying?

2 Q. Yes.

3 A. Okay.

4 Q. And also doing the same thing for 1980, I get a low
5 dividend yield of about 10.3 percent. Would you agree with
6 that?

7 A. Subject to check, surely.

8 Q. Now, I was looking at the PP&L quarterly review. I
9 believe it's ended June 30, '82, with a book value of \$24.52.
10 Do you know what that book value is now?

11 A. I don't know what the exact book value is. I can
12 give you an estimate at year end '82 by simply taking the
13 actual year end 1981, adding the 1982 earnings, deducting
14 the 1982 dividends which will give you an indication -- it
15 certainly wouldn't be precise -- and that would be something
16 of the magnitude of \$25.59.

17 Q. Excuse me?

18 A. \$25.59. Using the methodology I just described.

19 Q. All right. And I understand that's only an
20 indication at this point?

21 A. That's right.

22 Q. What would the current market to book for PP&L be?

23 A. The spot market to book?

24 Q. Yes.

25 A. Present price is around \$23.00 a share; and if the

1 book value is \$25.59, that would be about 89 percent market
2 to book.

3 Q. Mr. Brennan, concerning that \$25.59 indication, is
4 it possible that the book value would actually be lower than
5 that, given issuances by PP&L below book?

6 A. It's also possible it's higher because there's been
7 retained earnings since the time of those issuances. In
8 other words, today is February. There's been retained
9 earnings since the end of 1982. So if you want to know what
10 the answer is as of this moment in time, it could be either
11 slightly higher or slightly lower.

12 Q. Looking on the PP&L "Profile" again, at their year
13 end book value figures for '81 and '80, --

14 A. Right. There was a change of 16 cents.

15 Q. For which year?

16 A. Between 1980 and 1981.

17 Q. I see.

18 A. All I am suggesting is that the \$25.59 estimate,
19 that could be slightly higher, perhaps down by some number
20 as a result of dilution occasioned by a common stock sale
21 and up somewhat as of this moment based on the additional
22 retained earnings since the end of the year.

23 Q. Well, Mr. Brennan, I've also applied the highest
24 market price for '80 and '81 to the year end book value in
25 those years and I conclude that the highest market to book

1 for '81 would have been possibly 75 percent and the highest
2 for 1980, 83 percent. Would you agree with that?

3 A. If you give me the input you used I will be happy
4 to check it.

5 Q. Well. That's simply -- of course, we can't know
6 exactly on all of the 365 days or the trading days what the
7 market to books were. However, what I have done is I have
8 taken the year end book value and I have applied it to the
9 highest stock price for the preceding year.

10 A. This is for the year 1981?

11 Q. 1980 and 1981.

12 A. If you will refer to Page 7, to Schedule 12 of
13 statement -- I'm sorry, of Exhibit JFB-1, you will see that
14 I have shown there for the year 1981 and 1980 the high-low
15 by month. So the high of 1981, for instance, was 18 and
16 three eighths, its looks like. The high of 1980 was 19 and
17 seven eighths. I am sorry. 20 and a half was the high in
18 1980.

19 Q. All right. Do you have any other indication as to
20 what the highest market to book would have been for those
21 two years?

22 A. No. I didn't -- I just showed what the market to
23 book was for each year based on the high-low average for the
24 year relative to the average book value for the year and
25 that information is shown on Schedule 8.

1 Q. Mr. Brennan -- Schedule 8?

2 A. Yes. The market to book ratio for the year 1981
3 was 67.2 percent and for 1982 it was 69.6 percent and showed
4 at the time we prepared this the spot market to book was 84
5 percent. I think we have just calculated that as of the
6 moment. On an estimated basis it's approximately 89 percent.

7 Q. And the '81 and '80 market to book you gave me are
8 averages, are they not?

9 A. It's the product of taking the mid points of the
10 high-low market price and relating it to the average book
11 value.

12 Q. Okay. In terms of the January, '81 date when they
13 first received or last received their 15.75 percent
14 opportunity rate on equity, would you agree that at that
15 time, the Aa utility bond season bond yield was about 14
16 percent? And I mean that during the month of January.

17 A. The month of January, '81?

18 Q. That's right.

19 A. I don't have January, '81 with me. I'd have to
20 check that. If you want me to accept that, subject to check,
21 I will be happy to.

22 Q. Yes. And you could check that in Moody's Manual.
23 The season bond yield.

24 A. Yes. you are talking about distributed yields?

25 Q. I think they refer to it as the season yield?

1 A. Well, they publish newly issued yield in their
2 index and they publish distributed yields. Distributed
3 yields would be based on season issues. I think they call
4 them distributed yield. I just want to make sure we are
5 talking about the same thing.

6 Q. All right. In any event, we are not talking about
7 the newly issued bonds.

8 A. Right. And the number you said for January, '81
9 was?

10 Q. About 14 percent?

11 A. 14 percent, okay.

12 Q. And would you agree that the current season yield
13 for a Aa utility bond is about 12.7 percent?

14 A. For the month of January, it's 12.74 but of course,
15 PP&L is no longer a Aa. It's single A and it's 14.24 right
16 now. January of 1983, the single A bond yield is 14.24 or
17 not terribly different than the 14 percent figure you asked
18 me to accept subject to check for January of 1981.

19 Q. Similarly, would you agree that January 30, 1981,
20 the prime rate was 20 percent and now it's 11 percent?

21 A. Yes. And I have employed 11 percent in my
22 calculation in the update I just gave.

23 Q. Also, concerning inflation, historically, I believe
24 the CPI inflation for '80 is 12.4 percent, '81 CPI was 8.9
25 percent and the '82 CPI is 3.9 percent. Would you agree with

1 that?

2 A. Would you repeat the numbers for me, please?

3 Q. Certainly. CPI in 1980 was 12.4 percent. 1981 was
4 8.9 percent and 1982 was 3.9 percent.

5 A. There's different ways to compute inflation using
6 CPI. They don't tie into the numbers that I have. I would
7 agree the trend is in the direction your number suggests and
8 that the 1982 rate of inflation is significantly lower than
9 1981.

10 Q. Are they numbers that you have in your schedules?

11 A. Yes.

12 Q. Where are they?

13 A. Schedule 5. We didn't have '82 at the time we did
14 this but we now have preliminary '82, and '82, using that
15 methodology is 6.1 percent or down significantly, for
16 instance, from the 13.5 for 1980. We also revealed on Page
17 3 of Schedule 6 that we are aware of the fact that forecasts
18 for inflation for 1983 were likely to be in the 6 percent
19 area so we are -- the point is the recommendation I made
20 reflected knowledge of and expectation of a significantly
21 lower rate of inflation than the inflation that existed in
22 1981 or 1980.

23 Q. I also checked the earnings to price for PP&L as of
24 last Friday and I have it at about 14.3 percent. Would you
25 agree that that's approximately a current earnings to price?

1 A. Yes. I happen to have 14.6 but I wouldn't quarrel
2 with you. But that's the spot number at this time. In that
3 ballpark. Approximate indication of cost rate.

4 Q. On Page 35 you discuss an increase in the PP&L
5 earnings to price from 1972 to 1982 going from 10 percent to
6 16 percent as indicating an increasing investor required
7 return.

8 A. Right.

9 Q. Would a decline similarly have indicated the
10 opposite in investor required return?

11 A. It may. A decline in earnings price ratio may
12 suggest a decline in the cost of money or it may suggest
13 that the growth component of his return is higher than
14 previously estimated. See, as I indicated in the direct
15 testimony, an earnings price ratio understates the cost rate
16 in the circumstances of expected growth.

17 Q. Would you also state that the increase from 10 to
18 16 percent may only indicate an increase in investor
19 required return?

20 A. Is your question would it only indicate that?

21 Q. No. I think as you stated it, on Page 35, the
22 earnings to price ratio for PP&L moved from 10 percent for
23 1972 to 16 percent at a spot point in time in late 1982.

24 A. Right.

25 Q. And then at the bottom of that paragraph, what

1 these data suggest is a significant increase in the investor
2 required returns for the track common equity capital over
3 the course of the past ten years. I am simply saying would
4 it be more proper to drop a "may" in that sentence and say
5 it may indicate an increase?

6 A. I think it does indicate an increase in the
7 investor required return between 1972 and today and that
8 statement would still be good, even though the price
9 earnings ratio is today lower than it was at the end of 1972.
10 14.6 percent is still significantly higher than the 10 plus
11 percent in 1972.

12 All I am trying to suggest by that testimony is that
13 over the last ten years, there has been a significant upward
14 movement in the cost of money generally and this testimony
15 should be viewed in the context also of similar testimony
16 pertaining to debt cost rates because a similar phenomenon
17 has occurred. That is debt cost rates today are
18 significantly higher than 1972.

19 Q. Would you look on your Schedule 1, Page 3 entitled
20 Summary Cost of Capital and Fair Rate of Return.

21 A. Schedule 1, Page 3?

22 Q. Yes.

23 A. Okay. I have it.

24 Q. Toward the bottom under Roman III, you have the
25 number 16.8 percent- 17.5 percent.

1 A. Right.

2 Q. Can you explain to me how those numbers are derived
3 from the data on that page?

4 A. Yes.

5 Q. Okay. Please do.

6 A. The product of one DCF computation that suggests
7 that the sum of yield plus growth which is shown in Roman
8 Numeral 1, four dividend yields were considered spot yield,
9 average yield, next period growth reflected in each, average
10 to four, growth in value, historic growth was considered,
11 projected growth was considered in both earnings and
12 dividends, it's averaged them. I have got a low of 15.3.

13 As I explained in the testimony and on this exhibit, I
14 believe in the instance of PP&L, the price of stock may fall
15 and the dividend yield may increase when its dividend
16 payable to stockholders becomes fully taxable because for
17 the years 1980 and '81 it has been totally tax-free and we
18 can observe the phenomenon that for instance, to illustrate,
19 for bonds, tax-free bonds yield less than taxable bonds,
20 similarly rated.

21 Actually, the difference there is three and a half to
22 four percentage points.

23 Q. I understand the spread from fifteen-three to
24 sixteen-six.

25 A. I took the fifteen-three to sixteen-six, that's one

1 input. I then used another technique which I have labeled
2 risk rent analysis and I have said if interest rates
3 prospectively to this company would be 13 percent at that
4 level of interest rate, the spread between debt and equity
5 cost rates would be four percentage points.

6 I should add for clarification that if interest rates
7 were to prospectively be lower, it's likely that the spread
8 would be higher because our studies indicate that as
9 interest rates fall, the spread widens.

10 As interest rates rise, the spread narrows. So we
11 have got 17 percent using the risk rate approach. We then
12 averaged those two, 15.3 and 17.0 and you get 16.2 as an
13 average and if you used the other DCF calculation which
14 reflects the impact of tax-free dividend, it would become
15 16.8 averaging DCF and risk rate.

16 Then that number represents a range that would be
17 required to make the stock sell at book value. If it was
18 desirable to make the stock sell slightly above book value
19 so that when new shares are sold, there would be net
20 proceeds at least equal to book value, taking into account
21 issuance and selling expenses, then the range would have to
22 move to 16.8 to 17.5.

23 On the basis of those inputs, using PP&L data only, I
24 formed a judgment that 17.0 was a reasonable opportunity
25 rate. That number reflects, in part, recognition of the

1 tax-free status of the dividend and the fact that it's going
2 to change but only to the tune of approximately two tenths
3 of one percent, because you will notice that the calculation
4 without regard to the impact of tax-free versus fully
5 taxable is sixteen-eight.

6 There's no reflection of that in the sixteen-eight
7 number so that my conclusion of an opportunity rate of 17
8 only gives partial weight to the phenomenon. To see whether
9 or not that was a reasonable estimate, I performed the
10 precise same kinds of calculations, what I consider to be a
11 barometer group of similar risk electric companies.

12 That number was seventeen-nine so I was satisfied that
13 the 17.0 wasn't an overstatement. I also, took a look at,
14 as a check only, what a cash ratio pricing model might look
15 like and it came close. In fact, it came out to 16.8. And
16 the same thing for the barometer companies, it would be 16.7.
17 I was again satisfied that the 17.0 opportunity rate was a
18 reasonable estimate.

19 Q. Mr. Brennan, on Page 5 of your testimony --

20 A. Page 5?

21 Q. Would you look at that? You speak of this case as
22 a revenue request less than cost.

23 A. Say again?

24 Q. A revenue request less than cost. That's on line 8.

25 Now, are you referring there to the PP&L cost of capital

1 computation or the computation of the overall revenue
2 requirement as being less than cost?

3 A. Well, I intended to convey the impression that the
4 company's request, as I understand it and as I have shown on
5 Schedule 19 intends to provide an opportunity to earn but
6 16.2 percent on the common equity part of its original cost
7 rate base claim.

8 Since it's my judgment that the opportunity should be
9 in the vicinity of 17 percent, then I believe that their
10 proposed revenue requirement is not fully recovery of the
11 cost -- and I intended for it to be -- in this instance
12 the cost of capital, although I am aware of the fact that
13 the company, in arriving at its request has enumerated
14 approximately \$166 million of other expense claims that they
15 have not reflected in their filing.

16 Q. Well, are you offering here an opinion as to the
17 propriety of the PP&L rate base and expense calculations
18 from a ratemaking point of view?

19 A. No. I am merely observing the fact that the
20 company's claims with respect to revenues, expense and rate
21 base, appear to produce an opportunity to earn 16.2 percent
22 after excluding the company's claimed \$166 million in
23 expenses not claimed and I think it should be closer to 17
24 percent.

25 Q. Would you look on Schedule 5.

1 A. I have it.

2 Q. On two columns there you contrast Aaa rated Public
3 Utility Bonds and yield on U. S. Treasury Issues.

4 A. Right.

5 Q. Does this demonstrate that there is less risk on a
6 Aaa utility bond than on a Treasury Issue? I am sorry. I
7 reversed myself?

8 A. It's the opposite. It suggests that Aaa public
9 utility bonds, in the opinion of investors, require a higher
10 return presumably for other reasons, they think it's more
11 risky.

12 Q. On a five year average you quantified that at about
13 7 percent?

14 A. That's what the five year average happens to be for
15 that period of time. It would vary from year to year and
16 for five year period to five year period. But consistently,
17 public utility bonds are priced to yield higher than
18 obligations of the United States Treasury.

19 Q. Would you look on Page 18 of your testimony, about
20 Line 22, you discuss the possibility of the risk of
21 deregulation of part of the business, namely the generating
22 function.

23 A. Right.

24 Q. In your opinion, do investors currently perceive
25 that this change is likely to occur?

1 A. It would be my subjective judgment that they don't
2 perceive such a change occurring in the immediate future. I
3 don't think you could quantify it one way or the other.
4 It's a bit of information that may affect stock prices
5 because there has been much talk of the possibility of
6 deregulating generating capacity particularly in
7 Pennsylvania.

8 Q. Is the cost -- you also speak of the cost of
9 providing subsidy to small power producers.

10 A. Right.

11 Q. On that page and the next.

12 A. Right.

13 Q. Is that also a factor the investors take into
14 account?

15 A. I suspect they do take into account those factors.
16 I didn't quantify to what extent that factor impacts the
17 cost rate. We do know that now under PURPA, one has to pay
18 for energy produced by a co-generator in an amount equal to
19 the avoided fuel costs and to the extent you're buying power
20 at that time when you don't need to, if you happen to have
21 your own capacity, it seems to me that's an element of added
22 risk that didn't exist years ago before PURPA.

23 Q. In Pennsylvania do you know if that added cost or
24 the added cost of purchasing small power production from
25 small power producers at avoided cost is passed through the

1 energy cost rate?

2 A. I don't know without checking.

3 Q. So, would you know whether that subsidy would be
4 paid by the ratepayers or the investors?

5 A. If it was passed through, obviously it would be
6 paid by the ratepayers. That wasn't my point. The capacity
7 that that is there, this goes unused because of being forced
8 to buy power from co-generators is still there and the
9 capital that's required to provide it is still there and
10 there's added risk of not recovering necessarily that
11 capital or utilizing the capacity to the extent possible as
12 a result of PURPA.

13 Q. How -- I don't -- how does that work that they
14 don't recover that cost of the capacity?

15 A. Well, if you have capacity for 100 kilowatts and
16 your utilization is 100 kilowatts, and you have provided
17 enough investor dollars to produce 100 kilowatts, obviously,
18 to be simplistically illustrative, trying to make the point.

19 Somebody comes along and says you must buy from us 10
20 kilowatts. Instead of you using that 100 kilowatts, use 90.
21 The possibility exists that over time, you may not recover
22 the dollars needed to pay for that 10 kilowatt capacity
23 because the only way you get recovery is when you get a
24 price for your service above the fuel costs.

25 Q. Are you assuming that 10 kilowatts is not in rate

1 base, then?

2 A. It's in the rate base, but if you are not selling
3 energy that recovers all of the costs and you are passing
4 through the fuel cost part of it where do you get the dollar
5 from to pay for it?

6 Furthermore it seems to me you have, at that point,
7 theoretically, excess capacity, theoretically excess
8 capacity, unwanted, unplanned for, never contemplated and
9 then you have the possibility of a regulatory Commission
10 saying by golly, you have more capacity than you need, we
11 don't think you should get that in the rate base.

12 Commissions have been known to sometimes disallow rate
13 base if they make a subjective judgment with hindsight that
14 you built more than you should have. Who knows how many
15 co-generators are going to come down the pike in the next 15
16 years.

17 Q. I have another schedule reference here. You refer
18 to the -- let's see Aaa Public utility bond yield. Yes.
19 That's on Schedule 5.

20 A. I have it.

21 Q. Okay. Now, what I understand that you've done here
22 is you have computed a bare rent rate and you have
23 subtracted the Aaa public utility bond yield from the
24 current year implicit price deflator; and then you get -- and
25 then the difference between the two is shown in the GNP

1 deflator column.

2 A. Yes. In the column that's labeled Aaa rated public
3 utility bond yields versus GNP deflator and I have averaged
4 it over a period of years because anyone year could be a
5 distortion.

6 Q. Okay. Now, as I stated, what you have done is you
7 have looked at the bond yields for 1972, for example, and
8 compared that with the GNP implicit price deflator in 1972?

9 A. Right.

10 Q. And computed the difference?

11 A. That's correct.

12 Q. All right. Now, since the bond yield -- well,
13 those are 30-year bond yields, right? Yields on 30-year
14 bonds?

15 A. Yes. I would say that they are -- one doesn't know
16 precisely what the Moody's Index average yield to maturity
17 is. I would assume its long term debt probably close to 25
18 to 30 years. Conservative yields, you say are the product
19 of an index.

20 Q. Okay. And an investor would be looking forward to
21 inflation, so why wouldn't you use implicit price deflators
22 from subsequent years or the next year to calculate the
23 difference? In other words, for '72 you take 7.46 percent,
24 would you match it up, say, with the '73 implicit price
25 deflator and you would get a different spread. Because

1 that's what the investor was looking forward to when he
2 bought the bond in 1972.

3 A. There's no question that if you match up a bond
4 yield of 1972 for the implicit price deflator for a
5 different year you will get a different one if you use the
6 same year consistently.

7 Q. Would that more accurately calculate what you are
8 trying to represent here, which is the difference between
9 yield and the anticipated inflation?

10 A. It might. I think investors over this particular
11 time horizon learned, unfortunately the hard way, their
12 perception of the expected rate of inflation was
13 unfortunately in error because the rate of inflation instead
14 of being stabilized or falling or going sideways, moved up
15 over the time frame and so when they bargained to get
16 inflation protection of a given rate, time saw that they
17 didn't get that inflation protection as the rate of
18 inflation over the time frame trended upward.

19 Q. And that's shown in that Aaa Bond yield column
20 there as you trend upward?

21 A. Sure. The bond yields, obviously went up
22 significantly during this time frame, during the same time
23 frame when experience rates of inflation also moved up. As
24 I indicated in my direct testimony, generally speaking, long
25 term money cost rates and rates of inflation move in the

1 same general direction, but not necessarily notch for notch.

2 Q. Okay.

3 A. I think that's what it says in the direct testimony.

4 Q. On Page 26, starting at Line 17, you have a
5 statement there, "Had investors realized the rate of
6 inflation would continuously move up and correctly estimated
7 the magnitude of the increase over the many years, the
8 return rate required to attract capital would have been
9 higher."

10 A. Right.

11 Q. Did this actually cause bond yields in 1982 to
12 remain high? This phenomenon?

13 A. To remain high?

14 Q. Well, they were high at a time when inflation was
15 dropping?

16 A. Well, 1982 bond yields actually fell.

17 Q. But over the early months of 1982, for example,
18 inflation was dropping and the bond yields were not falling
19 as rapidly as inflation, itself.

20 A. Your statement is bond yields didn't fall as much
21 as inflation fell, itself in months of '82.

22 Q. Let me put it another way.

23 A. I suggest the opposite is true. I suggest that
24 bond yields in fact in 1982, fell, in many months, more than
25 the rate of inflation fell. The rate of inflation for many

1 months in 1982 was an annualized 5 to 6 percent area.

2 Even if it's 4 percent, as a previous question of
3 yours indicated, that suggests perhaps a change of one
4 percentage point or two. But we have seen in the year 1982
5 bond yields fall by as much as three to four percentage
6 points which I might add I reflected in my estimates when I
7 prepared my original testimony.

8 Q. Let me put it this way. Would you agree that
9 investors were reluctant to reduce their yields in new bonds
10 for 1982 even though inflation was falling rapidly?

11 A. I think that that's a possibility. I think
12 investors are perpetually reassessing what they think is the
13 prospective rate of inflation during the investment horizon
14 of a particular bond they might buy and the mere fact that a
15 politician might say we are going to do everything we can to
16 hold inflation down as far as the eye can see.

17 History shows that unfortunately, that hasn't been the
18 case. Forecasts by economists have sustained lower levels
19 of inflation unfortunately haven't been true, so investors
20 are more cautious than they used to be, because of the fact
21 that forecasts of the past haven't borne out.

22 I do think, however, that as time passes and as the
23 rate of inflation continues to either fall or move sideways
24 that there is an ongoing re-assessment of the prospective
25 rate of inflation that an investor requires protection

1 against on a sustained basis over the time horizon of his
2 investment. That number today is in the vicinity of 9
3 percent which is not significantly different than the number
4 that I believe investors thought when I prepared the
5 testimony in November.

6 Q. Well, investors as you are saying in this sentence
7 were not correct in the past in their estimate of what
8 inflation would be?

9 A. That is correct.

10 Q. Now, in early '82 were they correct in where they
11 thought inflation would be for the year?

12 A. In early '82?

13 Q. Yes. In early '82 they had relatively high bond
14 yields compared to the actual inflation for 1982?

15 A. Well, hopefully the bond yields are always above
16 the expected rate of inflation because if it isn't, then an
17 investor is getting no return on his principal.

18 In fact, he is giving away his principal. So that the
19 bond yields always have to be higher than the expected rate
20 of inflation. It might turn out with hindsight that the
21 realized rate of inflation was greater than expected and
22 therefore, they had a loss of principal in terms of real
23 buying power.

24 Q. Did investors correctly estimate what inflation
25 would be in 1982?

1 A. I think they did, and I think for classification,
2 your question suggests a misunderstanding, quite frankly.
3 Investors aren't concerned -- investors who buy 10 or 15 or
4 20 year bonds aren't really concerned only with what the
5 inflation rate in 1982 is going to be.

6 They may buy a bond in early 1982 when the rate of
7 inflation might be, and I will be illustrative, 10 percent.
8 But they may believe that over the life of their investment,
9 15 years, the average rate of inflation is going to be 9
10 percent.

11 So that there is a misconception that the rate of
12 inflation reflected in the price of money is equal to the
13 current rates of inflation. That is wrong. The rate of
14 inflation reflected in the cost of money required by
15 investors is because of the rate of inflation doing what
16 they think is their investment horizon.

17 So that while we might have today a rate of inflation
18 of 5 or 6 percent, if investors believe, right or wrong,
19 that during the next 15 years, the average rate of inflation
20 is going to be 9 percent, they are going to require 9
21 percent inflation protection or they won't invest the money.

22 We can gain insight into what is it that investors
23 think about the future rate of inflation by looking at
24 Treasury Bill futures, keeping in mind that historical
25 studies show that the average rate of inflation, and average

1 Treasury Bill yields over time are equal and if we look at
2 Treasury Bill equals we know right now today Treasury Bill
3 futures are priced to yield around 9 percent.

4 That strongly suggests that long term investors today
5 perceive an average rate of inflation during the next
6 several years of not 5 or 6 percent, but 9 percent.

7 Q. It is more difficult for them to estimate inflation
8 over say a ten year period than it is say for the next year?

9 A. Yes. Just like it's more difficult to raise money
10 for 15 years than it is for one year. That's why the cost
11 rates are different. Exposed to greater risk.

12 Q. Would you turn to Page 32, please. You have a
13 statement there, beginning about Line 11, "It should be
14 further noted that the realized rate of earnings for the
15 S & P 400 is related to a 68.1 percent common equity ratio
16 and thus, all else equal, the return rate on book common
17 equity should be higher for the electric companies studied
18 given their approximate 35 percent common equity ratio in
19 recognition of the greater financial risk to which the
20 electric company investors were exposed."

21 Now, my question is do you believe, in fact, that all
22 else is equal in this comparison?

23 A. No. I believe that the business risk for electrics,
24 at least in investors' opinions, is less than the business
25 risk for the S & P 400 and it's the sum of the two that

1 counts, keeping in mind that the sum of two is investment
2 risks. So we have higher financial risks for electrics than
3 S & P 400 given the vast difference in common equity ratio,
4 but we have lower business risk vis a vis the S & P 400.

5 Q. Would you agree that the stability of earnings is
6 greater than the S & P 400 if --

7 A. Yes. But that's not the only criteria the
8 investors take into account. It's just one element of risk.
9 We do know that investors who buy bonds in the utilities
10 require a higher return than the bond yield they require
11 when they buy non-utilities which suggests at least for
12 bondholders that the investment risk of the utility is
13 greater than the S & P 400.

14 That must mean that the added financial risk of a
15 utility more than offsets the lower business risk of a
16 utility.

17 Q. Mr. Brennan, earlier, when we were discussing your
18 Schedule 1, we discussed the adjustment you made for the
19 fact that the PP&L dividend is to become tax-free? Do you
20 recall that?

21 A. No. The adjustment to recognize the fact that it's
22 going to become taxable.

23 Q. It is tax free but will become taxable?

24 A. It has been tax-free for '80, '81. It is expected
25 to be tax-free for '82. It is further expected that by '83

1 it will be half taxable and by '84 it will be fully taxable.
 2 I am suggesting that that change, that significant change
 3 likely affects the price of the stock which, in turn,
 4 affects the yield. I have, in part, recognized it.

5 Q. Did you determine the degree to which the dividend
 6 would become taxable by speaking with PP&L Regulatory
 7 Accounting Department?

8 A. I obtained my estimate of the 50 percent taxable
 9 instead of 100 percent tax-free for the year 1983 from Mr.
 10 Fortune and I obtained a similar estimate from Mr. Fortune
 11 by 1984 it's likely that the dividend will be fully taxable
 12 as opposed to being fully tax-free. I suggest that that
 13 change will affect the price and all else equal, the
 14 dividend will go up because the dividend is the dividend.

15 The price falls because you have to start paying
 16 income tax for 100 percent of your dividend income.
 17 Obviously the yields are overstated in a DCF calculation
 18 under those six.

19 Q. Would you agree that what the investor is
 20 interested in is his after tax return?

21 A. An investor is interested in his after tax return
 22 in the circumstance of an investor who pays income taxes.

23 Q. That prediction as to the taxability of the
 24 dividend, do you know in what case that is predicated upon?
 25 Well, let me --

1 A. Do you know what rate --

2 Q. Let me rephrase that. The taxability of the
3 dividend will increase to the extent that AFUDC is converted
4 into actual tax cash income. Would you agree with that?

5 A. That's part of the reason. That's not the only
6 reason.

7 Q. Wouldn't that be increased by the rate relief
8 afforded Susquehanna Unit 1 in this case?

9 A. In part. What causes the dividends to be tax-free
10 versus taxable is a myriad of factors, one of which is the
11 use of straight line depreciation for tax purposes versus
12 some other method for accounting purposes. Another method
13 is the accruals related to fuel cost accounting if you book,
14 as an expense for income statement purposes one number, but
15 you have a different number on a tax basis for another.

16 Now, if fuel prices are rising, probably you have a
17 greater tax-free advantage. If fuel costs are falling, then
18 it becomes more taxable.

19 Q. So for this company --

20 A. So there isn't just one factor. That's the point I
21 want to make.

22 Q. In this dividend, why is it 100 percent tax-free?

23 A. A good part of it is because a large part of the
24 company's income is bookkeeping entries because allowance
25 for funds used during construction, as that number falls

1 it's likely that the taxable -- it's likely that the
2 dividends will be paid out of earnings from a tax viewpoint.

3 Q. And I assume that when you went to 50 percent
4 taxable in '83 and 100 percent taxable in '84 that the
5 driving force behind that change in the taxable status was
6 the conversion of the 1983 income tax for cash income?

7 A. The driving force was Mr. Fortune's estimates that
8 it's going to become 50 percent taxable in '83 after three
9 consecutive years of tax-free and it will become 100 percent
10 taxable in 1984. That was the driving force.

11 Now, we know that during those years Susquehanna 1
12 presumably goes into effect, gets reflected in the price of
13 service and AFC, then, becomes a lower percentage of net to
14 common than formerly was the case, although there still will
15 be a rather substantial amount of AFC because Susquehanna 2
16 isn't yet ready.

17 In '84, presumably Susquehanna 2 will come on line,
18 hopefully be reflected in the price of service and at that
19 point in time, a much larger percentage of the income will
20 be cash earnings as opposed to bookkeeping earnings. I
21 think there is a relationship between the two. As a matter
22 of fact, studies show there is a relationship between AFC
23 and effective income tax rate and whether or not dividends
24 are taxable to the recipient.

25 Q. If Unit 2 is included as a result of the fully

1 litigated rate case, do you know when that would occur in
2 1984?

3 A. Well, hopefully the rates that reflect it being in
4 service would be made effective hopefully the day it goes in
5 service. So that's scheduled for I think about November of
6 1984 or thereabouts and hopefully the rate case related to
7 that would precede that so that when it goes into service,
8 hopefully, rates will reflect it so there's no skipping of
9 the beat, so to speak.

10 Q. Well, assuming that were true, then I assume that
11 the rates would be effective about November of '84. There
12 would be an increase in cash income, a decrease in AFUDC
13 income?

14 A. Hopefully that will be the case. For Unit 2. '84
15 would reflect, presumably, a cash return on Unit 1. For
16 instance, if you substitute, Unit 1 is worth about \$1.7
17 billion in rate base. And if that's the case, if we assume
18 for purposes of illustration a 13 percent overall return.

19 We are talking about \$221 million that would be
20 reflected presumably in the price of service, compared to an
21 AFC which might have a net of tax yield and I am being again
22 illustrative -- I haven't worked it out -- of say 10
23 percent, \$170 million.

24 We would be substituting cash for a couple hundred
25 million dollars for bookkeeping income of a slightly lower

1 amount and that likely would cause the turnaround between
2 having dividends paid out of return of capital from an
3 income tax standpoint.

4 Q. I understand --

5 A. In the year '83.

6 Q. I understand you talked to Mr. Fortune about this.
7 Did you see the calculation also that he had done to
8 represent the dividend would be 50 percent taxable in '83
9 and 100 percent in '84?

10 A. No. That's why I didn't fully reflect the end
11 result of our various and sundry calculations. I have only
12 partially reflected it in income.

13 Q. The 1.3 percent adjustment only part shows going
14 from zero percent to 100 percent taxable dividends?

15 A. That's correct. And the reason for that is I gave
16 50 percent weight to a DCF calculation and gave 50 percent
17 to a risk rent calculation.

18 I made no adjustment in the risk spread cost of equity
19 situation. So right off the bat there is a 50 percent
20 weighting of the impact that our statistical studies
21 indicate is appropriate. In addition to that, it's possible
22 that the present price of the stock reflects that
23 prospective event, in part.

24 Finally, my recommendation of an opportunity rate of
25 17.0 compares with a calculated 16.8 percent equal weighting

1 of the two basic inputs, risk spread and DCF without regard
2 to any adjustment so I have given a very small weighting to
3 this possibility, much smaller than the statistical
4 calculations pertaining to the barometer group of seven
5 companies that PP&L suggests would be the appropriate number
6 to reflect to be conservative and to not over reach.

7 Q. Concerning the tax affect on investment return,
8 would you agree that the interest run on a utility bond
9 would be fully taxable as income?

10 A. To a --

11 Q. To a investor?

12 A. To an individual holder?

13 Q. Yes.

14 A. It's likely although it doesn't have to be. They
15 may have losses.

16 Q. I understand.

17 A. That would more than offset it in a particular year.
18 But as a generalization, sure. It's taxable.

19 Q. Would you also agree that utility dividends would
20 be 85 percent excluded from income tax if they were owned by
21 another corporation?

22 A. That's right. But this company's stock is
23 overwhelmingly owned by the average investor and not very
24 much owned by institutional investors so the prospect of
25 that is de minimis.

1 Q. And also would you agree that to a maximum of
2 \$750.00 for dividend income for single tax payers, a current
3 tax relief for reinvestment?

4 A. Yes. And presumably that benefit is reflected in
5 the price of stock which we have used to arrive at our
6 calculations. So if there is impact we have reflected it
7 implicitly.

8 Q. If stock capital gains would be taxed when sold and
9 then at a maximum of 20 percent, if held for at least a year,
10 would you agree with that?

11 A. Sure. Again, to the extent that investors are
12 buying this company's stock for that kind of expectation,
13 presumably the present price of stock used in the
14 calculation of the cost of money reflects it.

15 Q. Do you know when the last year was that PP&L's
16 dividend was 100 percent taxable?

17 A. 1977.

18 Q. Do you know what the average taxability of the
19 dividend was, in fact for the 11 years '81 through '71?

20 A. No, it's academic because in 1970 there was no such
21 thing as tax-free dividends. The law that gave rise to the
22 ability to have a dividend declared not taxable to the
23 recipient didn't take effect until 1973. It's called the
24 Tax Reform Act of 1969 which became effective in 1973 in
25 that regard.

1 Q. Well, do you have the PP&L "Profile" with you?

2 A. Yes.

3 Q. Would you look at page 19 of that?

4 A. Yes.

5 Q. Toward the bottom of that page there is a line
6 called Taxability of Dividend Income and in 1970 it shows
7 13 percent taxable and in 1972 it shows 41 percent taxable.

8 A. I don't know how that can be.

9 Q. Okay. Do you know how long these rates will be in
10 effect? Do you have an estimate?

11 A. Just as long as they are appropriate.

12 Q. All right.

13 A. I presume they will be in effect probably a year.

14 JUDGE KLOVEKORN: Let's take a ten minute recess.

15 (Whereupon, a brief recess was taken.)

16 JUDGE KLOVEKORN: Let's go back on the record. This
17 hearing will stand adjourned until 1:00 o'clock.

18 (Whereupon, at 11:59 a.m., the hearing recessed, to
19 reconvene at 1:00 p.m.)

20 AFTERNOON SESSION

21 JUDGE KLOVEKORN: Let's go back on the record. Mr.
22 McClelland.

23 MR. MCCLELLAND: Thank you, Your Honor. Your Honor,
24 before we continue with the cross examination of Mr. Brennan,
25 we have asked some questions about how it was determined

1 that the dividend would be 50 percent taxable in '83 and 100
2 percent taxable in '84.

3 I am not going to ask any further questions on that
4 because I understand essentially that function was performed
5 by Mr. Fortune. However, we would like to know how that was
6 done and we would like to make a data request for the
7 reasons why it was assumed that the dividend would be 50
8 percent taxable in '83 and 100 percent taxable in '84.

9 Specifically, we would like to see the work papers
10 that substantiate that and know when those calculations were
11 made. It seems to be important but we understand that that
12 is not within the scope of Mr. Brennan's testimony.

13 He has relied upon it and I understand that but we are
14 still trying to find out how that conclusion was made. Can
15 the company supply that?

16 MR. YOUNG: We'll inquire. Since you didn't ask Mr.
17 Fortune when he was here, I don't really know. But I'll ask
18 him.

19 MR. MCCLELLAND: We thought it was Mr. Brennan's
20 testimony and his analysis but I understand how it occurred.

21 JOSEPH F. BRENNAN, the witness on the stand at the
22 time of recess, resumed the stand and testified further as
23 follows:

24 CROSS EXAMINATION (Continued)

25 BY MR. MCCLELLAND:

1 Q. Mr. Brennan, would you look on Page 39, please.
2 Beginning about Line 22, which picks up in the middle of the
3 sentence there, there is a statement, "The present price of
4 stocks reflects an investor expectation of a total return on
5 common equity not less than the return rate of 16.6 percent
6 indicated without regard to a tax-free dividend." Do you
7 see that?

8 A. Yes.

9 Q. Now, I understand that 16.6 percent to be an actual
10 return on book equity for PP&L. Is that correct?

11 A. It is intended that way, that's correct.

12 Q. All right. When do you believe investors feel this
13 will occur?

14 A. When do I believe investors think it will occur?

15 Q. Yes.

16 A. Right now. Because in my opinion, the present
17 price of stock or the price of stock that I used in my
18 calculations to derive the 16.6 which was a DCF calculation,
19 suggests that that is implicit in the price of stock.

20 The statistical explanation of the price was the sum
21 of a dividend yield that would presume prospectively to be
22 taxable to the recipient and a growth factor as I indicated
23 in my direct testimony.

24 Q. I understand they have a present expectation that
25 the company will be earning 16.6 percent on equity.

1 A. That's what they require. It doesn't mean that
2 they will be earning it. They have priced the stock to
3 implicitly provide for them on their investment 16.6 percent.

4 Q. Well, let me try to clarify that. Is that a return
5 on market price or a return on book value?

6 A. It's a return on market price of the stock that is
7 implicit in the DCF computation I performed. In other words,
8 investors are saying if I pay this price, I think I am going
9 to get 16.6 percent. That's what a DCF does.

10 Q. All right. Mr. Brennan, if I have you correctly,
11 then, it's a return on market price. Now, we also covered
12 today that market to book is about 93 or 94 percent.

13 A. As of today it is.

14 Q. As of today?

15 A. I think we said 89 percent to be precise. It was
16 the relationship of \$23.00 a share, most recent price I am
17 aware of relative to an estimated \$25.59 a share which we
18 know could be off by pennies, probably. So it's
19 approximately 89 percent.

20 Q. Do you have an opinion, then, as to what they are
21 expecting on book common equity?

22 A. They expect, ultimately, the company's return on
23 book to be 16.6 percent so that the stock will sell at book.
24 In other words, if they paid the price they pay, using the
25 computations I performed when I derived the 16.66 percent

1 number, they think they are going to get 16.6 on their
2 investment. I suggested if, therefore, the company earned,
3 in fact, 16.6, its stock would sell at book.

4 Q. Do you have an opinion as to when they expect the
5 return on book of 16.6?

6 A. I am not trying to quarrel with you. A DCF
7 calculation that falls out with 16.66 doesn't suggest at all
8 that the company needs or will in fact earn 16.6. What it
9 suggests is that that price that you use in the computation
10 that it's going to provide 16.6 on their investment.

11 They need not necessarily ever earn it. At that price.
12 We know that the price was less than book. Therefore, the
13 earnings of the moment were inadequate to support a price at
14 least equal to book or maintain the integrity of the
15 presently invested capital. But that's the essence of the
16 testimony.

17 Q. Do you then have any opinion as to what return on
18 book investors expect, based upon the current market price?

19 A. I don't have an opinion as to what they expect.
20 All I can tell you is what is implicit in the price they
21 paid.

22 Q. And what is that?

23 A. 16.6 percent using one version of DCF.

24 Q. And that 16.6, again, is that on market price or
25 book equity?

1 A. That is a number that's derived from the market
2 price of the stock implicitly, because in the computation is
3 the dividend yield, which is a product of relating the
4 dividend to the price.

5 Now, the growth factor, that's based on investor
6 expectation. I have assumed the growth factor that is
7 reflected in the price that I used in my computations is the
8 product, in turn, of investor evaluation of historical
9 earnings and dividend growth as well as forecasted earnings
10 and dividend growth and I gave equal weight to all of those
11 things as is indicated on my summary schedule; which would
12 be Page 3 of Schedule 1.

13 Q. Did you have a further response, Mr. Brennan?

14 A. No.

15 Q. Would you look on Schedule 15, please. Now,
16 Schedule 15 shows some growth projections for earnings per
17 share and dividend per share, specifically it shows growth
18 for the past five years and for a projected '79 to '81 to '86
19 to '87 period. Do you follow me there?

20 A. Yes. I see the column that's labeled that.

21 Q. Okay. Now, the past five years growth is your own
22 computations using actual company data. Is that correct?

23 A. No.

24 Q. How did you derive that, then?

25 A. As indicated on the schedule, the source of the

1 information with respect to the five year growth rate
2 historical and projected is Value Line.

3 Q. And for the projected columns for growth in
4 earnings you have 3 percent, for growth in dividends you
5 have 4.5 percent?

6 A. That's correct. That also is Value Line.

7 Q. Now, that is titled projected 1979-81 to 1986-87.
8 Now, the actual growth from 1979-81 to the present would be
9 historical growth at this point.

10 A. No. What that really means is, as explained by
11 Value Line, is that they take a look at the '79 to '81
12 actual and trend it, that together with other factors, to
13 arrive at the estimate for the '85 to '87 period.

14 Q. So it's a composite of actual growth to date and
15 projected growth to '86-87?

16 A. No. I don't think that's quite the way it is.
17 It's a projection of what they think the growth rate is
18 going to be. But the basis of arriving at it is giving
19 weight to the trend of the '79 to '81 period.

20 In the final analysis, the cold hard fact is that
21 Value Line, nor anyone else, for that matter, reveals
22 specifically and precisely how they arrive at their growth
23 rates. It is, in the case of Value Line, the forecast of
24 the analysts who is assigned PP&L.

25 Q. Well, since it's presently 1983, have they actually

1 looked at the growth from '79 to 1983 or did they use a
2 growth that was projected for that period whether or not it
3 actually occurred?

4 A. They presumably looked at the actual trend of '79
5 to '81 as one input in arriving at their judgment of what
6 the growth rate is going to be. That is not the only input
7 they used, as they explain it.

8 In the final analysis, the growth rate published by
9 Value Line is that of the analyst responsible for PP&L at
10 Value Line. The analysts have at their disposal the
11 historical computed growth rates for both earnings and
12 dividends, and they have at their disposal Value Line's
13 econometric model.

14 They have at their disposal other information. In the
15 final analysis the number they reveal is that of the
16 analysts. There is no derivation at Value Line as to
17 specifically arithmetically how they get their growth rate.

18 So the use of Value Line would turn upon whether or
19 not, it seems to me an investor had confidence that the
20 Value Line projections were meaningful.

21 Q. If I understand you correctly, then, they are using
22 a trend from '79-81 to '86-87.

23 A. That's one of the inputs. That is not the sole
24 methodology they claim to employ to arrive at their forecast
25 of what the growth rate will be.

1 Q. I am just getting specifically at that one column
2 entitled projected '79-81 to '86-87 which shows a 3 percent
3 growth in earnings for PP&L?

4 A. Right. And what I am trying to tell you is that
5 the 3 percent growth rate is not exclusively the product of
6 trending the period '79 to '81. It is also the product of
7 other inputs which they employ.

8 They do not reveal or divulge precisely how they get
9 the growth rate nor, to the best of my knowledge, does
10 anyone else who makes forecasts into the future how
11 precisely they got it.

12 Q. You don't know whether this uses actual data from
13 '79-81 to '83 and the projected data from '86 to '87 or
14 whether the entire thing is a projection or whether it is an
15 amalgamation of projections in actual data.

16 A. I think I have answered the question but I'll try
17 once again. The inputs they employed are an econometric
18 model which they have available, whether they give weight to
19 it or not no one knows. The inputs they have are the actual
20 historical growth rates for usually a five-year period.

21 One of the other inputs they employ is trending of a
22 recent three-year period, the actual results and that,
23 together with their knowledge of other activities that might
24 affect a forecasted earnings such as rate case increases in
25 effect but not yet fully reflected; rate increase in process,

1 but not yet acted on, or prospective rate cases likely to be
2 filed.

3 All of those factors reflect into the number they show.
4 The 3.0 number that you refer to as to their forecast of
5 what their average annual rate of growth in earnings might
6 be for the next few years.

7 Q. And I assume your answer would be the same as to
8 the 4.35 percent for dividend growth?

9 A. Correct. We don't know precisely how they get it.
10 We know some of the inputs.

11 Q. Do you know precisely who at Value Line got it for
12 PP&L?

13 A. No. I have never spoken to the Value Line analyst
14 who handles PP&L. If you look at the Value Line sheet for
15 PP&L which is Number 204 and it's dated December 31, 1982,
16 we know at the bottom there's the initials LAB/MS, whoever
17 they are, they are the analysts who did it.

18 Q. You obviously wouldn't know who they talked to then
19 about it?

20 A. I have no idea who they talked to.

21 Q. Do you know if they consulted anyone at PP&L?

22 A. I do not know. To the best of my knowledge, they
23 didn't. I have never spoken with the Value Line people in
24 this regard and therefore, I don't know.

25 My use of Value Line is for the reasons cited in my

1 direct testimony, that they are the largest service of its
2 kind subscribed to by 35 or 40 regulatory commissions,
3 colleges and universities, hundreds of them; reportedly
4 100,000 subscribers who pay them money to make, among other
5 things, forecasts, so therefore, I consider them to be
6 investor influencing.

7 We need the test to see whether or not their past
8 forecasts are reasonably accurate over time. My testing
9 indicates to me that they are reasonably accurate over time.
10 Therefore, I think a growth rate that should be given weight
11 in arriving at a judgment of what the G part of the model
12 should be.

13 Keeping in mind I also gave weight to historical data
14 because I have no empirical studies and I know of no
15 empirical studies that can prove that investors use
16 exclusively forecasted data or historical data, earnings
17 forecasts or dividend forecasts so I gave weight equally to
18 all of them.

19 Q. Concerning historical data, under your earnings
20 growth for the past five years, now, you have a, I think in
21 your text, you describe the problem with the VEPCO data.

22 A. Right.

23 Q. And you have not used the VEPCO earnings growth for
24 the past five years in calculating your average earnings
25 growth. That's correct?

1 A. No. For clarification, if you will look at
2 Schedule 15, you will see that if you had an arithmetic
3 average of just the six companies and therefore ignored
4 VEPCO because it had zero growth rate, that number would be
5 4.8.

6 To be conservative, you will now refer to Page 3 of
7 Schedule 1, you will see that I did not use 4.8 at all.
8 What I used was 4.1 which assumes that I did consider a zero
9 growth rate for VEPCO in arriving at the judgment of what
10 the average G would be for the barometer group. Just to
11 avoid controversy.

12 Q. Do you know what the actual five year earnings
13 growth was to VEPCO?

14 A. Well, let me recite to you the earnings per share
15 figures for the last five years for VEPCO and I think that
16 will answer your question. According to Value Line, page I
17 think it's 215, dated December 31, 1982, earnings per share
18 in 1977 were \$1.92; 1978, \$1.88; 1979, \$1.63; 1980, \$1.93;
19 1981, \$1.77 and 1982, as is indicated, at \$2.00 a share.

20 Q. Have you calculated what the --

21 A. No, I have not. Value Line shows nothing, zero. I
22 presume they are trying to tell the investor who subscribes
23 to the service that it's unrealistic to assume that there
24 would be negative growth for a utility perpetually because
25 if you use negative growth in a DCF calculation, ultimately

1 that says that the stock will be worth zero.

2 I don't think that's a realistic assumption under rate
3 regulation.

4 Q. Should you use growth factors that provide
5 exaggerated results when taken to infinity like that?

6 A. In the case of using zeroes, I would not use zeroes
7 because if a company's stock is selling at less than book
8 and they are earning less than what's authorized, it's
9 presumed under rate regulation they will be authorized a
10 price of service that will enable them to achieve,
11 ultimately over time, a return which will maintain the
12 integrity of presently invested capital which is presumably
13 not less than the original cost measure of value for the
14 rate base.

15 Therefore, to me, it is improper to assume that there
16 will be zero growth in the circumstance of substandard
17 earnings as is the case with VEPCO. Likewise, if there was
18 a growth rate that was going to be say 30 or 40 percent, to
19 use an extreme example, I wouldn't use it either because
20 it's unrealistic to assume that any utility could sustain
21 annually a growth rate of that magnitude.

22 Q. Mr. Brennan, would you agree that the cost of
23 common equity increases as the percentage of common equity
24 in the capital structure increases? Does it work that way?

25 A. As a generalization, I agree that the risk is less

1 when the equity ratio is higher and vice versa, but when you
2 get down to differences of two or three percentage point
3 difference in common equity ratios it's very difficult to
4 quantify the impact on cost rate occasioned by changes in
5 financial risks reflected in different references in common
6 equity ratios.

7 That's simply because if you use a market based
8 approach there are a myriad of factors acting simultaneously
9 on the side besides that one element, financial risk. As a
10 matter of theory, I agree that the cost of equity goes down
11 as the equity ratio goes up, all else equal and vice versa.

12 Q. Do you know if that's a linear relationship?

13 A. I don't think it's a linear relationship. I think
14 if you move the common equity ratio, to answer your question
15 in an illustrative manner if you move the common equity
16 ratio from say 30 percent down to 20 percent which might
17 represent a 33 percent decline, there wouldn't necessarily
18 be a 33 percent cost rate increase in recognition of newer
19 higher financial risks a result of the lower common equity
20 ratio.

21 Likewise there wouldn't necessarily be a cost rate
22 change if you move the common equity ratio from 60 percent
23 to 70 percent nor an electric company, there may not be any
24 cost rate change because you can't get lower than the floor.
25 Example, Aaa bonds.

1 Aaa bonds, you can have a lower and lower debt ratio
2 once you attain a Bbb bond rating, whatever criteria is
3 relied upon by the rating agency. Reducing your debt ratio
4 and increasing your common equity ratio will not cause the
5 rate to attract capital because you can't reduce it below
6 the Aaa cost rate.

7 There isn't anything better than Aaa. If he can get a
8 Aaa with a 50 percent debt ratio, 40 percent common equity
9 ratio. You wouldn't use the cost rate to attract Aaa bonds
10 to that company if the equity ratio was 80 percent and the
11 debt ratio was only 20 percent. So there are limits to
12 changes in cost rate occasioned by differences in capital
13 structure ratios.

14 Q. Mr. Brennan, you referred in your testimony, and I
15 believe earlier today, you discussed the special studies
16 that regard the tax-free nature of dividends and the effect
17 it has on the cost of common equity?

18 A. Right.

19 Q. Specifically I think you refer to that first on
20 Page 7 of your testimony, specifically at Line 8, "Special
21 studies I have caused to be performed indicate the cost rate
22 for capital increases by as much as 1.3 percent when the
23 dividend income subject to income tax moves from zero
24 percent to 100 percent."

25 A. Right.

1 Q. Okay. In general, can you tell us how you
2 developed the special studies?

3 A. I didn't develop it as you can tell by my response
4 to your interrogatory. The actual calculations of the
5 special studies was performed by Mr. Jeff Macholm who is our
6 staff econometrician. I can tell you the techniques he
7 employed.

8 He employed a cross sectional time series multiple
9 regression analysis and he tested for multicollinearity and
10 autocorrelation. And he used as inputs the barometer group
11 of seven companies I employed, together with PP&L as raw
12 data entering into the formula he employed.

13 Q. Over the period 1977 to 1981?

14 A. Correct. The most recent five years that happens
15 to correspond with the same calendar five years that was the
16 latest available and I employed in my basic studies as
17 revealed on Schedule 12 pertaining to PP&L, 13 pertaining to
18 Moody's 24, 14 pertaining to the barometer group of seven
19 companies.

20 Q. But you've studied the relationship produced by
21 that formula. And have you applied some -- well, excuse me,
22 have you studied the relationship implied by that formula?

23 A. Yes. If by study you mean am I aware of the
24 calculations performed by Mr. Macholm, the answer is yes,
25 his calculations suggest that when the dividend goes from

1 fully tax-free to fully taxable, there may be as much as a
2 1.3 percentage point change in dividend yields or cost of
3 common equity actually because we use DCF as the method to
4 indicate the change.

5 Q. Is the tax-free nature of the dividend the only
6 independent variable in the equation?

7 A. Well, Mr. Macholm took into account bond ratings,
8 common equity ratio and total capitalization. I had
9 requested that he perform these calculations also taking
10 into account AFC as it expresses a percent of net to common
11 and effective income tax rate.

12 But his calculations of those two elements indicate
13 that there would be potentially serious multicollinearity
14 problems with the data because those two elements move in
15 the same direction as does the tax-free nature of the
16 dividend to the recipient so that you don't need to, since
17 they move in that direction, same direction.

18 You don't need to use as a dependent variable AFC as
19 expressed as a percent of net to common or effective income
20 tax rate.

21 Q. Did you, yourself suggest the five independent
22 variables used?

23 A. Yes. I suggested he consider other variables that
24 might explain why or how a DCF calculated cost of equity
25 would be different and and that he explore these various

1 explanations to make sure that his statistical computations
2 captured the thing we were attempting to capture, whether or
3 not and to what extent, if any, there is a cost rate change
4 occasioned by the company's dividends becoming tax-free to
5 wholly taxable in a very short period of time.

6 Because there could be other factors that affect it
7 and so Mr. Macholm looked at, as I said, bond rating, total
8 capitalization, common equity ratios, in effect, implicitly
9 AFC as well as effective income tax rate.

10 Q. Mr. Brennan, who was responsible for the financial
11 theory which created them all?

12 A. I was. I theorized that if bonds that are tax-free
13 are placed to yield observably without any calculations
14 whatsoever, significantly lower than bonds of a similar
15 rating that are taxable, it follows that a stock that is for
16 three consecutive years free of income tax to the recipient,
17 that is the dividends on the stock are free of income tax to
18 the recipient that that might also affect the price of the
19 stock and that if that was suddenly going to change, that to
20 use as a proxy for the future a dividend yield of the moment
21 or the last 12 months in any DCF calculation may under state
22 the result.

23 So I requested Mr. Macholm who was quite expert in
24 cross sectional time series multiple regression analysis and
25 and you need to use both, I am told, not being an expert

1 statistician myself, in order to properly address the
2 question.

3 His calculations indicate that his techniques
4 explained 75 percent of the change in cost rate using three
5 different DCF models as, I am sure you're aware, in response
6 to the interrogatories that we gave you relative to the
7 techniques and the model we employed.

8 Q. Would you have used the model if, in fact,
9 application to the data indicated that as the dividends
10 became taxable the cost of common equity actually declined?
11 In other words, if it didn't fit the theory.

12 A. Sure. I think if you properly address the question,
13 that if you are suggesting that as something became taxable
14 that was tax-free, that that results in a cost rate decline,
15 if that was, assuming universally agreed upon, even though
16 it is an absurd assumption, sure.

17 But I know of no empirical evidence of any kind, way,
18 shape or form that suggests that if you suddenly have to pay
19 income tax on something, that you are going to get more.
20 Obviously you are going to get less. Therefore, it affects
21 the price of the stock, it seems to me, just like municipal
22 bonds that are tax-free, the interest income are tax-free
23 are historically, currently expected to be prospectively,
24 have a lower request for capital, in terms of capital, than
25 those of a similar rating that are taxable.

1 With respect to bonds, the spread between the taxable
2 and the non-taxable over time, such as five years, whether
3 you use B Aa, A., Aa or Aaa ratings is somewhere in the
4 magnitude of 350 to 400 basis points or three and a half to
5 four and a half percentage points.

6 Now, it struck me that if you have a similar
7 phenomenon with respect to stock, there may also be a
8 measureable change in cost rate. Now, why is it only 1.3 as
9 compared to say three and a half to four percentage points?

10 I suspect it's because with bonds, it's a contractual
11 obligation for a specified period of time such as 10, 15 or
12 20 years where it's going to be tax-free whereas with a
13 stock, investors are aware of the fact that it can change.
14 So they discount this tax-free portion in the expectation
15 that it won't always be tax-free.

16 Q. So that what you are indicating, then, is that in
17 fact, the statistical data verified the theory as to
18 taxability of dividends?

19 A. Right. It verified the common sense notion that
20 when something is tax-free versus taxable it's obviously
21 going to have a different value if all other elements of
22 risk are equal.

23 Q. Has the data also verified the theory related to
24 the other four independent variables you have?

25 A. Well, what the data revealed with respect to the

1 other variables is that those variables when you have a
2 homogenous group, similar bond rates, similar size, similar
3 capitalization, that they don't have a measurable effect on
4 cost rate. That is the cost rate difference.

5 Q. And as the inputs in those independent variables
6 change, the result changes logically, that is the theory
7 would predict what happens when different inputs are placed
8 in all five variables.

9 A. If you change the inputs to a group of companies
10 that were not essentially homogenous as to say common equity
11 ratio or say as to bond rating or say as to total
12 capitalization, you are going to get a different answer.
13 Because what you would be capturing is a DCF calculated cost
14 of equity, that's the product of not just one single
15 significant difference but possibly many different
16 significant differences.

17 That's why in that instance you would have probably
18 multicollinearity problems that would probably be difficult
19 to overcome statistically.

20 Q. Can you use the theory to consider inputs into the
21 independent variables and produce the cost of common equity
22 given varying inputs?

23 A. I don't know. I think you'd better ask Mr. Macholm
24 that question. As I said, I specified the time frame to use.
25 I specified the variables that I could think of that might

1 affect the DCF cost of equity I and said he should test for
2 those things to make sure that whatever difference there is
3 between taxable and non-taxable, we are essentially cap-
4 turing that difference and no other difference.

5 His testing indicates that his statistical methodology
6 of cross sectional time regression is 75 percent R squared
7 at a 95 percent level of confidence. And that's very good.

8 Q. The DCF result or DCF calculation that you are
9 referring to, is that your DCF calculation?

10 A. No. Mr. Macholm made the DCF calculation but the
11 DCF model that he used, he used three different models, are
12 essentially, one is $D \text{ sub } 1 \text{ over } P \text{ plus } G$, G being the
13 product of four inputs, forecasting, earnings and dividends
14 per share and historical earnings and dividends per share
15 precisely as I employed in arriving at the DCF cost rate in
16 my testimony and exhibit.

17 He also looked at two other DCF models which, with
18 respect to the dividend yields, he used the next period
19 growth giving equal rate to forecast of historical dividends.

20 Q. Which of the three equations did you use to derive
21 the 1.3 percent taxable dividend factor?

22 A. I believe that all three produced roughly 1.3
23 percent. In other words, in this instance, again, I would
24 have to confer with Mr. Macholm and you'd have to ask him
25 that. I believe that all three models produced a similar

1 result that there would be a 1.3 percentage point change in
2 cost rate using the statistical methodologies he employed.

3 Q. Mr. Brennan, one of the independent variables is
4 time?

5 A. Right.

6 Q. Why did you decide to include time as an
7 independent variable?

8 A. I specified to Mr. Macholm that he should make the
9 calculations based on not just a spot point in time or a one
10 year period, because that data could be the product of an
11 aberration of the market for stock generally speaking and
12 when you do it over time, where you've had good markets and
13 bad markets as has been or was the case during the period
14 1977 through '81, you are more likely to get a result that's
15 more reliable and less subject to the aberration of an
16 abnormality of a boom market or a bust market.

17 Q. Did you have any belief in creating this model that
18 the cost of equity in fact, changed as time changed?

19 A. Well, sure, that's why, I believe, he used a cross
20 sectional time series to get the observable difference in
21 cost rate. What his real search was was whether or not
22 there was a difference in cost rate when the dividend is 100
23 percent tax-free versus 100 percent taxable, but rather than
24 just address the question on one year given that a DCF
25 method requires the use of market price data, it's possible

1 that the market price data for a given year could be the
2 product of an aberration.

3 Q. Did you believe that the time relationship was
4 linear when you created the model?

5 A. I didn't have any preconceived notion of it at all.
6 My instructions were simply can you produce statistically a
7 calculation which indicates what the impact on cost rate
8 would be if dividends went from tax-free to taxable in a
9 very short period of time because common sense and corporate
10 financial theory tells me that there should be a cost rate
11 change but I did not know what that cost rate change would
12 be.

13 Mr. Macholm, through statistical methodologies has
14 quantified it, at least giving us a ballpark for it, using
15 that seven company group plus PP&L and through getting that
16 input from Mr. Macholm, I then, in effect, in the final
17 analysis only gave partial weight to it because in the
18 technique I used to arrive at my recommendation, I did not
19 adjust one technique, namely the risk spread technique, at
20 all in recognition of this factor so that in effect, at best
21 one could say I gave half weight to his conclusions.

22 Actually, given that I rounded downward, really, the
23 two inputs that I did employ, risk spread and DCF, I gave
24 even less weight than half, but there's no question in my
25 mind that there is a change in investor requirement when you

1 move from something that's tax-free to something that's
2 fully taxable in a short period of time and therefore, to
3 use a DCF indicated cost of equity without recognizing that
4 change at all, would be to under state the indicated cost of
5 capital to the company.

6 Q. Mr. Brennan, on the five independent variables that
7 you have used, when you gave us the R square of .75, I
8 believe, were you using all five independent variables?

9 A. No. Three of them. The two because of
10 multicollinearity problems, weren't employed because they
11 move in the same direction as does the tax-free dividend.
12 If you have high AFC, if you have high AFC, it follows you
13 are going to have a low calculated income tax rate and you
14 are also going to have a dividend that's tax-free to the
15 recipient in the same direction.

16 Therefore, to include those two, effective income tax
17 rate and AFC would because what the statisticians call
18 multicollinearity problems.

19 Q. Mr. Brennan, I do want to make sure I follow the
20 equation exactly as you have done it. Through the discovery
21 process, we did derive some information concerning the
22 equation.

23 I'd like to offer you what we believe is an example of
24 one of the equations and let you have the time to look at it
25 and see if we are accurate.

1 A. Okay. I should say at this point that I did not
2 perform these calculations, Mr. Macholm did and I would
3 prefer that he look at them rather than me because I am
4 not qualified as an expert statistician to get into cross
5 sectional time related multi regression analysis. So may
6 I --

7 MR. YOUNG: Your Honor, Mr. Macholm is here. It
8 might be useful to swear him and have him respond where
9 appropriate.

10 MR. MCCLELLAND: I have no objection to that.

11 JEFF D. MACHOLM, called as a witness, (Joining witness
12 Brennan) having been duly sworn, was examined and testified
13 as follows:

14 CROSS EXAMINATION (Continued)

15 MR. MCCLELLAND: I'll address you both.

16 Q. Mr. Brennan and Mr. Macholm, did you have time to
17 look at OCA Exhibit 1?

18 A. (Macholm) Yes.

19 Q. Is this an accurate representation of one of the
20 equations used in the what I'll call the Brennan special
21 study?

22 A. (Macholm) Yes.

23 Q. As I look at this, can you explain what Y is, that
24 is the result of the equation.

25 A. (Macholm) Y is the dependent variable which is

1 depreciated cost rate of common equity.

2 Q. The first factor which is X-1 which would be common
3 equity ratio that is the percentage of equity in the capital
4 structure?

5 A. (Macholm) That's correct.

6 Q. X-2 would be capitalization or the amount of
7 capital in the utility?

8 A. (Macholm) Average total capital to be specific, yes.

9 Q. X-3 is the bond rating and if I understand
10 correctly -- well, perhaps I should ask you, what would a
11 zero in this factor be?

12 A. (Macholm) Zero would indicate a bond rating of A by
13 Moody's.

14 Q. And a 1 would indicate a Aa?

15 A. (Macholm) That's correct.

16 Q. Now, X-4 is the percentage of the dividend which is
17 tax-free?

18 A. (Macholm) Correct.

19 Q. And, for example, if I had a 100 percent tax-free
20 dividend and I multiplied .01339 times 100, I would get
21 1.339 percent subtracted from the DCF result for the cost of
22 equity?

23 A. (Macholm) Correct. You have to be careful of the
24 scale in which your variables are measured. However, Y, the
25 dependent variable is expressed in whole percentages

1 therefore, you can be safe to say that yes, 1.3 is expressed
2 in whole percentages.

3 Q. And X-5 is time?

4 A. (Macholm) Yes.

5 Q. What would a 1 be in this calculation?

6 A. (Macholm) A 1 would signify that the time period is
7 1977. A 2 would signify 1978 and so forth and a 5 would
8 indicate 1981. It's simply a linear time term, although the
9 results of the analysis do not depend on a linear time term.
10 Others were tested and the results came out very similar.

11 Q. What companies did you test in the period of '77 to
12 '81?

13 A. (Macholm) The companies were Mr. Brennan's
14 barometer group of seven companies plus PP&L. Eight
15 companies total.

16 Q. Which of those companies ever experienced a 100
17 percent tax-free dividend during the period studied?

18 A. (Macholm) Cleveland Electric Illuminating, and PP&L
19 and Virginia Electric and Power.

20 Q. Can you tell me the years other than PP&L which I
21 think we have? The years in which VEPCO and CEI experienced
22 100 percent tax-free dividend?

23 A. (Macholm) Cleveland Electric Illuminating had a 100
24 percent tax-free dividend in 1980 as did VEPCO, as did PP&L
25 and that's it.

1 Q. So other than PP&L, VEPCO had 100 percent tax-free
2 in one year 1980. CEI had 100 percent tax-free in one year,
3 1980?

4 A. (Macholm) That's correct.

5 Q. Do you know if the tax-free status in those two
6 years for each of these two utilities, that is VEPCO and CEI
7 was due to the construction of a nuclear power plant?

8 A. (Macholm) I do not know.

9 MR. MCCLELLAND: If you would like to confer.

10 WITNESS BRENNAN: VEPCO is probably due to the
11 construction of a nuclear power plant because VEPCO had a
12 very high percentage of AFC expressed as net to common.
13 They were building at that time I believe North Ana 1 and
14 North Ana 2. CEI was also involved in the CAPCO pool
15 construction of nuclear power plants, several of which were
16 canceled subsequently. So they were involved in heavy
17 construction work in progress and they both had relatively
18 high AFC expressed as percentage of need to common.

19 BY MR. MCCLELLAND:

20 Q. Just for clarity, would you agree that this
21 equation uses five independent variables?

22 A. (Macholm) Yes.

23 MR. MCCLELLAND: Your Honor, I would also like to
24 distribute what we believe is an application of this
25 equation of PP&L for 1981 and I offer it in that sense and

1 would like the witness to have the chance to examine it and
2 see if we have done so correctly.

3 BY MR. MCCLELLAND:

4 Q. Have you had the opportunity to examine OCA Exhibit
5 2?

6 A. (Macholm) Yes, I have. Although I assume that the
7 arithmetic calculations are correct.

8 Q. All right. Assuming that the arithmetic
9 calculations are correct, is this a proper application of
10 the equation shown on OCA Exhibit 1 for PP&L for the year
11 1981?

12 A. (Macholm) I believe so, given the data is correct
13 and the calculations are correct. It would appear to be so.

14 Q. And just to run through it, this shows a 31.53
15 percent slice of common equity in the capital structure, a
16 \$4.206 billion capitalization, a Aa bond rating, a 100
17 percent tax-free dividend and a time factor of 5, meaning
18 1981. Have I characterized those properly?

19 A. (Macholm) I believe you have, yes.

20 Q. And if we add those up then we get a 16.67 percent
21 which would be the DCF result under the equation?

22 A. (Brennan) That would be what is called an estimated
23 value of the DCF cost of equity and in every regression
24 equation you have estimated and actual values which are only
25 in very rare occasions exactly the same and the difference

1 between this, the estimated version based on the regression
2 equation and your actual data that you have is called the
3 regression error for this observation.

4 MR. MACNICHOLAS: I missed the last few words, sir.

5 WITNESS MACHOLM: I am sorry. The difference between
6 this 16.67 which is the estimated value for this individual
7 observation and the actual value that we have for the DCF
8 computation for this observation is called the regression
9 error for this observation.

10 BY MR. MCCLELLAND:

11 Q. Mr. Brennan, do you know what the percentage of
12 common equity in the capital structure was for 1982? Or do
13 you know how it would have changed from '81 to '82?

14 A. (Brennan) We don't have yet PP&L's December 31,
15 1982 financial data for the full calendar year or at the end
16 of the year. So the only thing I can say at the moment is
17 that the estimated July 31, '83 numbers shown on Page 2 of
18 Schedule 1 or the actual July 31, 1982 numbers shown on Page
19 1 of Schedule 1 would be reasonable approximations.

20 There it is shown that the common equity ratio based
21 upon total permanent capital is roughly 34.7 percent or say
22 35 percent common equity ratio and that's based on permanent
23 capital.

24 That does not include short term debt and the reason
25 why it didn't include short term debt is that short term

1 debt is assumed to first finance CWIP and in this instance
2 CWIP is far greater than short term debt.

3 Therefore, given that AFC rate is -- given the price
4 of assuming short term debt being used to finance CWIP,
5 there is no short term debt finance in the rate base, so
6 CWIP is not in the rate base.

7 Q. We are using here a future test year ending July of
8 '83. Is that correct, in this case?

9 A. (Brennan) Yes.

10 Q. Do you know what the common equity percentage in
11 capital structure is for the future test year? Or do you
12 know what your estimate is?

13 A. (Brennan) As I said on Page 2 of Schedule 1, I have
14 shown the estimated July 31, 1983 capital structure ratios
15 based upon permanent capital. The source of that
16 information is Page 1, Schedule 2, where I have shown the
17 detail of the capital structure and related ratios with and
18 without short term debt.

19 Q. Well, let's use the future test year, then. If we
20 have a 35 percent common equity structure --

21 A. (Brennan) Ratio. I understand what you are saying.

22 Q. That would increase slightly your DCF result in
23 this equation, would it not?

24 A. (Brennan) It would increase it?

25 Q. Yes.

1 A. (Brennan) Not necessarily.

2 Q. Well, under the equation, what does it do?

3 A. (Brennan) You would substitute 35 percent for 31 or
4 32 percent, but that doesn't mean necessarily that the cost
5 rate would be higher because that's not that much difference
6 between 32 or 35 or 32 and 34, whatever the exact numbers
7 are while theoretically the cost rate, all else equal,
8 should decline, not increase, if you are only addressing
9 common equity ratio difference.

10 Q. Well, assume that you had two companies, otherwise
11 identical in the future test year, one of which has a 31.53
12 percent common equity and one of which has a 35.2 percent
13 common equity and if you use the equation at OCA Exhibit 1
14 which would have the higher cost of common equity under the
15 DCF model?

16 A. (Brennan) The one with the lower common equity
17 ratio if everything else was equal would have the higher
18 cost rate. If everything else was equal. But as I
19 indicated earlier, when you get down to the level of a
20 difference in common equity ratio of just a couple of
21 percentage points, the impact on cost rate is very difficult
22 to ascertain.

23 As a matter of fact, I believe Mr. Rothschild, in
24 prior cases have produced a model or methodology which he
25 says can quantify it.

1 If my recollection is correct there is a nine one
2 hundredths of one percent change in cost rate occasioned by
3 each one point change in equity ratio. So if we are talking
4 about, to be illustrative, a two percentage point change in
5 equity ratio, one would expect the cost rate to change by 18
6 one hundredths of one percent, if Mr. Rothschild's testimony
7 in other proceedings addressing that issue is accurate.

8 Q. Assuming you were using methods such as Mr.
9 Rothschild has used wouldn't the sign for the X-1 variable
10 be negative instead of positive?

11 A. (Macholm) You gave an example before. I wonder if
12 you could repeat the example. You used two different equity
13 ratios. Could you give me those two again?

14 Q. Sure. What I was attempting to do was use the
15 31.53 percent which was employed for -- yes, which was
16 employed in 1981.

17 In contrasting that with the 35.2 percent projected
18 for the future test year in this case and I was saying, if
19 all else were equal, no other independent variables changed,
20 to my understanding, that would change the cost of common
21 equity by increasing it.

22 A. (Brennan) For clarification you should be aware of
23 the fact that there's 31.5 percent common equity ratio
24 you're using is the PP&L common equity ratio at the end of '81
25 including short term debt. Now, you are comparing that with

mid 1983 common equity ratio excluding short term debt.
2 So right off the bat it's somewhat of an apple and pear
3 comparison.

4 The actual common equity ratio for PP&L at the end of '81
5 excluding short term debt was 32.8 percent. So what we are
6 talking about is the difference between one and two
7 percentage points in common equity ratio which I submit, as
8 a matter of theory would indicate, a difference in cost rate
9 but as a practical matter trying to really quantify it, it's
10 problematical.

11 Q. But regardless of how small the change would be,
12 the direction of movement in the equation would be positive
13 whenever the slice of common equity is increased. Am I not
14 correct there?

15 A. (Macholm) You have to remember that the -- the
16 answer to your question is yes and now I will explain. The
17 range of common equity ratios for these companies is very
18 small. Hence, what you would expect to find over a large
19 range of common equity ratios in terms of change of DCF cost
20 rate might not occasion itself in a sample where the changes
21 between companies and between years and equity ratios are
22 very small.

23 Q. Would you agree that the range of data for common
24 equity ratio actually employed varied from 40.2 to
25 approximately 31.5 and I am getting 40.2 from 1979 and 31.5

1 from 1981.

2 A. (Brennan) 40.2 for 1979 appears to have pertained
3 to public service of Indiana.

4 Q. All right.

5 A. (Brennan) Is that right? And what was the other
6 Number 31, you said?

7 Q. 31.5 which I believe might apply to PP&L?

8 A. (Brennan) Well, just a minute. For PP&L, there is
9 a 31.5 for PP&L but I suspect that might be a number derived
10 with regard to including short term debt whereas the 40
11 point some odd number that you cited, I think is derived
12 from permanent capital only. There is a range. There's no
13 question. It's probably as much as 10 percentage points,
14 okay? It could be perhaps 8 percentage points if you have
15 uniform computations. I don't know unless I had all the
16 detail here to tell you.

17 Q. Would you know, then, which of the percentage of
18 common equity included short term debt and which did not?

19 A. (Brennan) I can't tell you without checking further
20 detail. I don't know. We have two sheets with us that show
21 common equity ratio. Unfortunately, this particular sheet
22 just shows the ratio.

23 It doesn't show the derivation of the ratio. So I
24 can't tell you if it includes or excludes short term debt.
25 When I look at the PP&L number, I can tell that one because

1 in my exhibit we have a schedule, Schedule 12, Page 1, where
2 we show what the common equity ratio is at year end '81 with
3 short term debt in the computation, it's 31.5. With short
4 term debt out of the computation it's 32.8.

5 Q. Also, I would like you to look at the X-2 variables
6 without digressing into the level of detail that we used in
7 the capitalization ratios. It seems that as the sign is
8 positive, to the extent that the company grows, its cost of
9 capital under the DCF model increases?

10 A. (Macholm) You have to remember that the T
11 statistics attached to that coefficient indicates that we
12 cannot conclude that that coefficient is different from zero,
13 therefore, we can't make any conclusions as to the sign or
14 the magnitude of that coefficient because in our tests we
15 have concluded that it's not different from zero.

16 Q. Would the same apply to the T statistics with
17 regard to X-1 term?

18 A. (Macholm) The T statistic with regard to equity
19 ratio in some instances approaches significance, that's
20 correct. However, I have stated that there is little
21 variability among equity ratios. The mean of equity ratio
22 over the sample, I can tell you, is 35.61. The standard
23 deviation being 2.2.

24 Therefore, we know that two thirds of all the equity
25 observations fall within 2.2 percentage points of 35 percent.

1 So the range of equity ratios in this sample is relatively
2 small.

3 Q. Would you look at the X-5 term which is time.

4 A. (Macholm) Yes.

5 Q. We are here looking at 1981 and so we've used a 5.

6 A. (Macholm) Correct.

7 Q. Hypothetically, if there were a utility in 1982
8 identical to PP&L and the statistics shown on OCA Exhibit 2
9 and the only thing I have changed in your independent
10 variables would then be the year, would your DCF model not
11 increase or excuse me, would it not be correct that the DCF
12 model would increase by 1.289 percent?

13 A. (Brennan) The specification of time is a linear
14 relationship. It was one that was done first out of
15 simplicity. However, it is not what people should accept
16 without further checking. And this study does not go to
17 1982. If it did go to 1982 when there was a general
18 observation of decline in interest rates, then I would think
19 the linear time trend would be inappropriate.

20 Now, I tested a log linear time trend and I also used
21 a time trend which consisted of dummy variables which makes
22 no assumption concerning what's going to happen to the trend
23 in years after your sample period.

24 In all those instances, the result, the 1.3 results
25 that we get from tax-free was generally supported. So I

1 would not want to take the model that was used for 1977 to
2 1981 and try to predict values for 1982. That's not what
3 it's for and that's incorrect statistical inference.

4 The linear time trend was used for simplicity and it
5 was discovered that whether we use a linear time trend, log
6 linear time trend or time trend more complicated, using
7 dummy variables which make no assumption about a pattern in
8 the time trend, we find out the results are basically
9 similar.

10 I would not want to predict the variables of 1982
11 based on regressions that were performed over the sample
12 period 1977 to 1981.

13 Q. If you were to drop out the X-5 time factor from
14 the equation, what would your R square be?

15 A. (Brennan) Dropping out the X-5 time factor
16 indicates that this is a cross sample of a cross sample
17 regression over five time periods. You must allow the
18 regression model to distinguish between points in time.

19 If you drop the time variable, the computer will not
20 know which is 1977, which is 1981 and there are important
21 differences between the data for those years.

22 The time variable is very important and it must be
23 used in this kind of regression which we call panel data
24 regression which uses cross sectional data over a number of
25 years.

1 We can't exclude it because the data we get and the
2 results we get are not going to make any sense.

3 Q. Do you know what the the square would be if we
4 dropped it? I am sorry. It's R squared?

5 A. (Macholm) Do you know what the R square would be?
6 No, because to drop it would render this kind of regression
7 equation meaningless. Therefore, why drop it.

8 Q. Can't this equation be applied in 1983 and 1984?

9 A. (Brennan) It would not, no. This is the data which
10 shows us what has happened between historical relationships.
11 This is not a predictive equation.

12 We should not use this to predict what the future is
13 going to be. But we know that certain relationships took
14 place between these variables historically. No, I would not
15 want to predict with this relationship and if you drop the
16 time term, you have a meaningless regression.

17 Q. Do you know what your R squared was when you used a
18 dummy variable with no time frame?

19 A. (Macholm) When I used the dummy variables with
20 respect to time. Yes, I do.

21 Q. What would it have been?

22 A. (Macholm) I will tell you what it was.

23 Q. Okay.

24 A. (Macholm) The R squared was .78.

25 Q. Can you tell me what the equation was, then?

1 A. (Macholm) Yes, I can. The equation was basically
2 the same until we get to the time term.

3 MR. MACNICHOLAS: I missed it, sir.

4 WITNESS MACHOLM: I am sorry. The equation was the
5 same until we get to the time term. Substituting for the
6 time term we have what are called dummy variables whereas
7 instead of one variable denoting time, we now have four. We
8 have five time periods, four variables to denote time.
9 That's a statistical reason why we don't have use five.

10 We would have perfect multicollinearity if we did. So,
11 it's specified that in 1977 all the observations pertaining
12 to 1977 will get a number 1 and all the observations not
13 pertaining to 1977 will get a number zero. That is our
14 first dummy variable.

15 The second one does the same thing for 1978. All the
16 observations for 1978 get a value of 1. All the non-1978
17 variables, observations, excuse me, get a value of zero. We
18 can construct five variables like this because we have five
19 years.

20 However, because of the statistical problem of perfect
21 multicollinearity, we do not include all five of those in a
22 constant same regression. So therefore, we drop one of
23 those variables out, include the other four and hence,
24 account for time with these dummy variables.

25 I would like to mention, however, that when we

1 increase the number of independent variables as we do when
2 we employ the dummy technique, we decrease the efficiency of
3 our tests, hence forth the standards which we have to meet
4 in order to derive whether or not a variable is or is not
5 significant are higher than they were before. Our tests are
6 less efficient. The standard which we must apply to the
7 model are more stringent.

8 MR. MCCLELLAND: Your Honor, we are ready to leave
9 this business on equations. We would simply just ask,
10 however, that we get a copy of the study using time as a
11 dummy variable. That seems to be important.

12 WITNESS MACHOLM: I believe that if the Consumer
13 Advocate has the data necessary to run the regressions based
14 on the data they have already received, running regressions
15 based on dummy variables is simply an easy extra step. I
16 have described the dummy variables here and dummy variables
17 are -- I need not provide them with data on dummy variables.

18 MR. MCCLELLAND: It may be an easy extra step but we
19 want to see how they did the easy extra step. It's been
20 used, Your Honor. We want to see the basis for it.

21 WITNESS BRENNAN: We will be happy to send you the
22 equation and I think you have all the raw data that there is
23 to get. So if you have the equation you have the raw data.

24 MR. ROTHSCHILD: I would appreciate a copy of --

25 MR. YOUNG: I think what Mr. Brennan is offering, Your

1 Honor, is complete. I don't think they need any help. They
2 can run their own studies. I don't see why we should run
3 these studies for them.

4 MR. MCCLELLAND: We want to see the computer output
5 that produces the the R square. We want to find out how
6 they did that.

7 MR. YOUNG: We don't rely on the one that produces .78
8 so you can run it and produce any one you want.

9 MR. MCCLELLAND: Your Honor, I think it was part of
10 the basis for confirming the use of the X-5 variable which
11 was time and we renew our request.

12 MR. YOUNG: I'll just repeat our position. We will
13 give them the material by which they can run it. I see no
14 reason for us to run it for them. We'll also give them the
15 formula.

16 JUDGE KLOVEKORN: Can you run it, yourself?

17 MR. MCCLELLAND: I don't know how we can.

18 JUDGE KLOVEKORN: Why don't you try and if not, you
19 can come back.

20 MR. MCCLELLAND: One other question.

21 BY MR. MCCLELLAND:

22 Q. Mr. Brennan, regarding the embedded cost of capital,
23 have you adjusted that to reflect any gains on the re-acqui-
24 sition of debt?

25 A. The answer is yes, but it's reflected in the -- it's

1 buried in the information shown on Page 4, Schedule 3 that
2 we show premium or discount.

3 For me to tell you what those gains were, I would have
4 to get the detail that went into those numbers shown which I
5 don't have with me.

6 Q. I understand you don't have it with you now, but we
7 would request, then, a table showing the same information
8 available at Page 4 breaking that one column out to show the
9 gains on the re-acquisition.

10 A. (Brennan) That's no problem. We will do that.

11 MR. MCCLELLAND: Thank you. Nothing else, Your Honor.

12 (Witness Macholm was excused.)

13 JUDGE KLOVEKORN: Thank you. Mr. Eaton, do you have
14 questions?

15 MR. EATON: Yes. I have a few.

16 BY MR. EATON:

17 Q. Mr. Brennan, I would like you to turn to Page 3 of
18 Schedule 1.

19 A. Page 3 of Schedule 1. I have it.

20 Q. I think that really fairly succinctly summarizes a
21 great deal of your testimony in this matter. I would like
22 to ask you just a few questions about that. One, in Part 1,
23 Growth and Value, in parts H and I, you have a projected
24 growth value -- excuse me in Part C and D you have some
25 projections with regard to growth in dividends. Did you

1 have a projected dividend that you used in those figures?

2 A. Well, yes. The growth in dividend, the so-called
3 next period dividend is a product of assuming that an
4 investor would give equal weight to the so-called future
5 growth rate and the historical growth rate.

6 Q. What was that projected dividend?

7 A. It wasn't the dividend per se. We took the yield
8 and adjusted it by an assumption of the expected growth rate
9 and that growth rate was the product of assuming that the
10 growth rate in dividend would be equal to the average of
11 historical and for indicated dividend growth.

12 Q. Can you from those figures derive what that
13 dividend would be if projected?

14 A. Okay. Let me try and back into that for you. If
15 you will refer to Schedule 15, I think it will be easy to
16 see. There, we show the current dividend at \$2.32 a share
17 as to current annual dividend.

18 If it was expected that that dividend was going to
19 grow by the average of the historical and forecasted
20 dividend growth rate, that growth rate would be 4 percent.

21 That's simply the average of the three and a half
22 percent historical dividend growth rate shown shown in the
23 next to last column on Schedule 15 and the 4 and a half
24 percent projected dividend growth rate.

25 Now, if we simply take the \$2.32 and multiply that

1 times 104 that suggests that the next period dividend, going
2 out 12 months would be roughly \$2.41.

3 Q. Now, going back up to 1-A, the current yield, this
4 was with the annual dividend priced as of 11/3/82.

5 A. Right.

6 Q. Now, am I correct that as you said earlier, that
7 that if that figure were corrected, the 11.2 percent were
8 corrected to reflect yesterday's closing price or Friday's
9 closing price, that would be 10.1 percent now?

10 A. I wouldn't use the word corrected. Updated.

11 Q. Updated, fine.

12 A. 11.2 may be more indicative than yesterday's price
13 but the updated figure would be 10.1 if you used yesterday's
14 price and today's dividend without regard to the next period
15 growth which the model requires you to use, I might add.

16 Q. Fine. Do you know what the average yield would be
17 using the 12 month period ending January 3 one, 1983?

18 A. Yes. 11.7 percent as opposed to 12.3 percent. So
19 that is a half of one percent change and I suggest that if
20 the price is now higher than it used to be, notwithstanding
21 the dividend be the same, that may in turn suggest investors
22 now expect a higher growth rate because the price of stock
23 doesn't rise for no reason at all, necessarily.

24 There's usually some explanation. Part of that
25 explanation may be that investors think the growth rate may

1 be higher. While you may have a lower dividend yield
2 occasioned by a higher price you may also have a higher
3 expected growth rate and the sum of the two may be unchanged.

4 Q. Now, using the \$2.41 projected dividend, can you
5 also give an updated figure for Item 1-C, the current yield
6 reflecting next period growth in dividends?

7 A. That would be 10.5 percent.

8 Q. And using the same projected dividend, can you give
9 us an updated figure for the average yield reflecting next
10 period growth in dividends?

11 A. Yes. 12.2 percent. And if you average all the
12 updated figures, the four updated figures, it would be 11.1
13 percent.

14 Q. So just speaking arithmetically without going into
15 whatever other factors there might be, we would have an
16 updated average yield of 11.1 percent?

17 A. That's correct. And if there is price movement
18 upward that gave rise to that one percentage point decline
19 in deferred yield with the product of expected higher growth,
20 then the 3.3 percent, which is the average growth value
21 inputs, would also have to go up.

22 Whether or not that would go up by one percentage
23 point or two percentage points or no percentage points, I
24 haven't addressed.

25 Q. Now, with regard to the growth in value, would you

1 agree that the price of stock is usually more related to a
2 multiple of earnings rather than to a multiple of dividends?

3 A. I think most investors value stock on the basis of
4 a multiple of earnings.

5 Q. But yet in your growth in value, you have waited
6 equally both by way of historic earnings and projected
7 earnings, the dividend and earnings. Would it be reasonable,
8 let's say, to give a little bit more weight to the earnings
9 portion of that calculation?

10 A. I have no reason to believe that investors, in fact,
11 would do just that. As a matter of fact, the DCF model
12 requires the assumption that the growth in value is the
13 growth in dividends, not earnings. However, you can't have
14 growth in dividends over time without growth in earnings
15 because ultimately, if you have continued increases in
16 dividend growth with no corresponding increase in earnings,
17 your payout ratio would be in a perpetual state of change
18 upward.

19 Another requirement of the DCF model is to assume that
20 there is no change in payout ratio. So to do what you
21 suggest would be to violate the DCF model, that is the
22 Gordon version of the model.

23 Q. Let me understand this. Don't you have a projected
24 dividend growth rate in excess of your projected earnings
25 growth rate?

1 A. Yes.

2 Q. And can that be maintained indefinitely over time?

3 A. No, it can't. If you go out 40, 50 years, some
4 very, very long period of time, you can't perpetually have a
5 dividend growth rate higher than earnings growth.

6 But the question here isn't what it's going to be 50
7 years from now or what investors think about 50 years from
8 now. It's what motivates them to pay the price of stock
9 that they are currently paying or have recently paid.

10 I suspect and I think it's rational to assume that
11 they are looking and giving weight to the recent payout
12 ratios and no assumption that there will be a significant
13 change in it.

14 Q. But it is true, nonetheless, that that is a
15 relationship which cannot exist indefinitely?

16 A. Absolutely. Just like you can't have -- let me
17 give you another --

18 Q. I understand.

19 A. This is pertinent to the DCF question. This
20 company's earnings, a very large portion of it, is AFC which
21 is non-cash earnings. Actually, this company pays out in
22 dividends as to many other electric companies, earnings they
23 don't have in cash.

24 The DCF model doesn't even address that. That's why I
25 refuse to give exclusive weight to DCF. That's why I think

1 you must use something else and I think the something else
2 that is appropriate is risk spread. The most, more
3 appropriate.

4 Q. Let me get back to your relationship between and
5 the weight given to earnings factors, both historic and
6 projected and dividend factors both historic and projected.
7 It seems to me clear, from your statement here and in your
8 testimony, that investors place more weight upon earnings
9 than they do upon dividends.

10 It would seem to me then when you are averaging for
11 these purposes the influence of those factors, wouldn't it
12 be more reasonable or would it be reasonable to give some
13 additional weight to earnings over dividends?

14 A. No.

15 MR. YOUNG: Objection. I think the witness already
16 answered that question. The exact same question was just
17 asked five minutes ago. Maybe two minutes ago.

18 JUDGE KLOVEKORN: Let's have one more shot at it. Mr.
19 Brennan.

20 THE WITNESS: No, I don't think it would be more
21 reasonable to to do, for the reasons I previously stated and
22 for the reasons cited in my direct testimony.

23 BY MR. EATON:

24 Q. Now, with regard to the adjustment which I believe
25 is explained in footnote 6 at 1.3 percent, which relates to

1 the change from dividends being tax-free to 100 percent
2 taxable, I believe you did acknowledge in your earlier
3 testimony that, in fact, some portions of existing dividends
4 will remain less than 100 percent taxable because of
5 provisions allowing for individual investor automatic
6 investment?

7 A. I don't remember saying that at all.

8 Q. Then I misunderstood you.

9 Q. Is it true that a portion of the dividends which
10 will be paid by PP&L will be subject to a lower tax rate
11 than regular income rates?

12 A. To different holders?

13 Q. Well, to individuals. Among individuals.

14 A. Yes. Individuals of different tax rates.

15 Q. Is there a tax law provision which provides for the
16 allowance of a \$750.00 reinvestment for individuals and
17 \$1,500.00 on joint return in a fashion that would permit
18 that dividend to be taxed at less than the full income tax
19 rate for the individual taxpayer?

20 A. The answer is they may reinvest dividends unto the
21 amounts you mentioned in your question which would defer any
22 tax at that time on that dividend. But it would defer it.
23 It doesn't eliminate it.

24 Q. Does that have an affect on the price of the stock
25 that the individual would be willing to pay for stock?

1 A. Probably does. And it's reflected in the prices
2 that I have used. And with respect to PP&L that's no
3 different in that regard than any other electric company.

4 Q. Was that factor included in the consideration and
5 calculations used to derive the 1.3 percent described in
6 footnote 6?

7 A. Implicitly, yes.

8 Q. Am I correct that that study was done for a
9 five-year period ending 1981?

10 A. Yes.

11 Q. Isn't it true that that Act which made that tax
12 savings available did not become effective until 1981?

13 A. That's correct. And therefore, the treatment of it
14 from PP&L or any other electric would be identical.
15 Therefore, the cost rate difference that you get by
16 measuring whether the dividend income received in tax is
17 free or not is the only thing that is really measured, since
18 it would be identical to the barometer companies that were
19 used with PP&L to make the calculations.

20 Q. Yes. But hasn't the tax law changed over that
21 period of time between the time the study was made of the
22 barometer group so that in fact, aren't these different
23 situations as far as the effect of moving from complete
24 taxability or 100 percent tax-free to 100 percent taxable?

25 You are never going to reach that 100 percent taxable,

1 are you, in the current situation?

2 A. Our cost rate for common equity capital that we use
3 we derive from a spot price in 1982 and a 12 month average
4 price ending in a period of 1982, all during which time
5 there was this provision permitting reinvestment of
6 dividends and avoid for the moment, the taxes.

7 So that the price of the stock that we used to get our
8 DCF cost rate for common equity capital reflects that fact
9 fully for the period of time that that law has been in
10 effect.

11 In regard to whether or not there may also be a change
12 in cost rate occasioned by the cash dividend paid being,
13 moving from totally tax-free to totally taxable, we used a
14 five-year period of time during which, during that period,
15 the tax law in that regard was unchanged. So that it's
16 really two bites.

17 One is reflected totally implicitly because we used
18 the price of stock to get the dividend yield for our DCF
19 calculation using spot and 12 months average all during the
20 time that law was in effect, the other is an attempt to
21 quantify the impact during a five-year period all during
22 which time whether or not cash dividends were taxable in
23 full or in fact was the same law for all companies.

24 Q. I understand that. But am I not correct that if
25 the dividends are 100 percent tax-free, any so-called

1 savings that you could get or deferment that you would get
2 through the \$750.00 provision is meaningless because you
3 already have received a dividend which is 100 percent tax-free.

4 A. You can only shield it once.

5 Q. You can only shield it once. So in the period that
6 the barometer group was taken, there was, in fact, a shift
7 from zero percent to 100 percent taxability for -- that was
8 possible all during those years because there wasn't any
9 deferment provision, isn't that correct?

10 A. There is a basic difference. If you reinvest the
11 dividend and leave them reinvested you may go on for ten
12 years and leave that money reinvested whereas if you are
13 counting on getting cash dividends which will be perpetually
14 free of income tax, that just can't be.

15 Sooner or later -- the company when its earnings are
16 right, the plant goes in service, the AEC, et cetera --
17 sooner or later, it is taxable. I believe the tax method we
18 have used recognizes both; and properly.

19 MR. EATON: Those are all the questions I have.

20 JUDGE KLOVEKORN: Thank you.

21 MR. MACNICHOLAS: No questions, Your Honor.

22 JUDGE KLOVEKORN: Thank you Mr. MacNicholas. Mr.

23 Zwally?

24 MR. ZWALLY: Yes.

25 BY MR. ZWALLY:

1 Q. Mr. Brennan, during your testimony earlier today,
2 you indicated, I think, that you anticipate a prospective
3 rate of inflation of approximately 9 percent for the, I
4 think you said, next several years.

5 A. No. I think you misunderstood. What I said was
6 right now, implicit in the price of money investors require
7 to be paid is an assumption that the average rate of
8 inflation for the next several years will be 9 percent. I
9 did not say that is what the rate of inflation of this year
10 is.

11 Q. I understand that. That was what I intended by my
12 question. Now, for what period of time are you looking at
13 in terms of that assumption?

14 A. Since I derive the 9 percent figure from
15 information pertaining to long term debt, it would be as
16 much as 15 or 20 years, to answer your question.
17 Furthermore, I derived the figure from Treasury Bill futures,
18 that is part of the answer, from Treasury Bill futures that
19 go out to 1985 or 1986. There, we are talking about a
20 minimum of five years.

21 Q. Five to 15 years, then?

22 A. I would think when they buy long term debt, they
23 think the average rate of inflation for the next 15 years or
24 so will be 9 percent.

25 Q. Do you consider that to be a reasonable estimate of

1 the rate of inflation over that period time period?

2 A. For the next period 15 years?

3 Q. Yes.

4 A. Yes. I think that history shows that during 1955,
5 which is the last year there was zero rate of inflation,
6 that the average annual increase has been nothing but onward
7 and upward and there's no reason to believe that the
8 conditions which gave rise to it namely politicians
9 primarily has changed one iota.

10 We are going to have a \$200 billion deficit. At the
11 same time we are cutting taxes.

12 Q. Now, theoretically, is it also correct based upon
13 your testimony, that the cost of capital for PP&L should be
14 expected to increase at something slightly above this rate
15 of inflation? Or is that not correct?

16 A. No. I don't assume that the cost of capital to
17 -- the inflation protection required by investors in PP&L
18 would be any different than the inflation protection
19 required by other similar risk investors.

20 Q. So it would be approximately the same rate?

21 A. Yes. I think new long term debt for PP&L if that's
22 going to be cost and I am being illustrative, 12 percent. I
23 think something in the magnitude of 9 percent is the
24 implicit inflation protection required by those investors in
25 long term debt that might have a maturity of 15 or 20 years.

1 I don't think that's any different than any other investors
2 who's going to invest in an electric company for 15 or 20
3 years in the form of debt. It's going to require a similar
4 inflation protection.

5 Q. I thought I testified that investors would look for
6 something in the way of protection slightly above what he
7 anticipated in the rate of inflation?

8 A. Yes. The real rate of return is the sum of the
9 inflation protection plus the real return. If the real
10 return is assumed to be somewhere between two to three
11 percentage points, say two and a half points, if inflation,
12 to be illustrative, averaged, let's say 9 and a half percent
13 in the next 15 years and today you could buy, or in the
14 immediate future you could buy an A-rated bond or a
15 Baa-rated bond that is priced to yield, let's say twelve and
16 a half percentage points, what you would wind up there with
17 is a real return of roughly 3 percent.

18 You have got your 12 percent, 12 and a half.
19 Inflation would occur to the tune of 9 and a half and you
20 would wind up with really 3 percent. I suggest that over
21 time, investors require a real return, somewhere in the
22 vicinity, in long term debt for utilities, of 2 to 3 percent.

23 Q. And would that be true with respect to other
24 components of cost of capital as well?

25 A. Yes. I think the inflation protection reflected in

1 an equity investor is similar. He's presumed to also be a
2 long-term investor. If he wasn't, I guess we would call him
3 a speculator.

4 In addition to the inflation protection equal to what
5 the average rate of inflation is going to be, viewed over
6 the long term, plus the real return when you get to equity,
7 you have got to add a risk premium to that because the
8 common stockholder is exposed to at least equal to the
9 business risk that the company is exposed to; an independent
10 financial risk, because he is last in line to get money out
11 of the earnings that are available, and he does not have a
12 first claim on assets earnings as does the secured long term
13 debt model.

14 So for that added financial risk of being last in line,
15 he requires a premium above the debt cost rate.

16 Q. And your 9 percent is an annual rate, is that
17 correct?

18 A. I said average annual rate. Right. It will change
19 from time to time depending on investor's beliefs, which are
20 a product of actions taken by the government, whether or not
21 they think those actions are sustainable, et cetera.

22 Q. At Page 12 of your testimony, 11 and 12, you
23 indicated you took a look at the company's capital
24 requirements for the period of the years 1983 to 1985. Did
25 you look at or make any assumptions with respect to capital

1 requirements beyond 1985?

2 A. Not really. I was interested primarily in what
3 their capital structure ratios are going to be over the
4 period of the next year or so and what kind of securities
5 they would need to sell to maintain the kind of capital
6 structure ratios that they think are prudent to be able to
7 select the ratios they used to develop an overall cost of
8 money. But I didn't go beyond 1985, 1986 in terms of
9 capital requirements.

10 Q. You indicated on Page 11 that the company intends
11 to move to a higher equity ratio and I believe that would be
12 by reducing the preferred ratio, and in effect, would
13 replace the amount of equity?

14 A. Actually it's a combination. As Mr. Fortune has
15 testified, the company's longer range goal is to get a debt
16 ratio that is not more than 45 percent which is the kind of
17 a debt ratio that if you had all the other criteria met, we
18 could possibly give you a strong A or a Aa rating.

19 Also, they are going to work toward at least in the
20 immediate future moving the preferred ratio, combination
21 preferred and preference ratio down to 15 percent so it
22 won't exceed 15.

23 So with a debt ratio that is not going to exceed, over
24 time, 45 and a debt ratio not over 15. That suggests over
25 the long term they are going to work toward a 40 percent

1 common equity ratio.

2 However, because it's not practical or realistic to
3 assume that during the period of time the rates in question
4 in this proceeding would be in fact more than 30 percent
5 common I wouldn't use them. I have used the one. In the
6 middle of 1983 roughly, what is roughly 35 or 36 percent.

7 Q. Do you agree with the company's policy here? Is
8 this what you recommend to them?

9 A. Yes. I do believe that the company and its
10 consumers and investors will be better off with a slightly
11 less leveraged capital structure because I do believe that
12 electric companies today are subject to a greater degree of
13 business risk than they used to be many years ago.

14 Q. Then you don't think that the replacement of
15 preferential stock or preferential capital by equity capital
16 at admittedly higher rates would necessarily increase the
17 cost of capital for this company?

18 A. It may increase the cost of capital but it may also
19 increase the the reliability of the ability of the company
20 to render service on reasonable terms for as far as the eye
21 can see.

22 They need to be in a capital attraction posture all
23 the time whether the money market is tight or loose. And if
24 you perpetually have, say, to be illustrative, 35 percent
25 common equity ratio in a very tight money market you may

1 discover you can't raise all the capital you need,
2 necessarily, and certainly not at necessarily reasonable
3 rates.

4 So it's a combination of not only whether it's less
5 revenue required for consumers but also the obligation to
6 serve, given a sure, reliable service.

7 Q. Wouldn't you agree that that is less of a concern
8 of a company that has reserve capacity of let's say in the
9 area of 50 to 60 percent?

10 A. No, I wouldn't. Because this company like every
11 other company sooner or later has to redeem or reacquire all
12 of its existing fixed cost obligations.

13 So that even if they didn't have to attract any new
14 capital whatsoever in terms of building additional
15 generation capacity they would still have to be in a good
16 capital attraction posture to replace the securities that
17 are now destined by contractual terms to mature either
18 through sinking fund operations or absolute maturity.

19 Q. Have you looked at those requirements beyond 1985?

20 A. No. My quest is to discover what is going to be
21 the proper cost of capital to reflect in the price of
22 service to the period approximately the middle of 1983 nor
23 the next year after that. To go beyond that at this time,
24 you would get a less certain conclusion for sure.

25 Q. Would it be a proper characterization, then of your

1 testimony, that a shift in the capital structure being a
2 reduction in the preferential stock and an increase in the
3 equity stock may result in a short term increase in cost of
4 capital but may well be to the benefit of the company over
5 the long term?

6 A. That's a possibility. But I also suggest that just
7 because you shift from preferred to common doesn't mean, in
8 fact, it costs more.

9 Let me explain briefly why. This company just sold
10 preferred stock recently at 14 percent. That's a higher
11 return rate on common equity. I am sorry. A higher return
12 on equity than the company is currently earning at the
13 moment on common equity.

14 Q. But it's not higher than what you are recommending
15 in this case?

16 A. No. What I am recommending is an opportunity
17 return. I am just trying to make the point that it happens
18 that they recently paid more to get this preferred stock
19 than in fact they are able to earn on common equity even
20 with all the bookkeeping earnings.

21 Q. Well, for purposes of that last question, my term
22 cost of capital is based upon what you would recommend as
23 the cost of capital for the company. And there may be some
24 slight increase over a short term period as a result of this
25 shift in capital structure?

1 A. Yes. The revenue cap cost of capital may be higher
2 in the short run by injecting more common and less preferred.
3 But the service may be more reliable over the long run as a
4 result of it.

5 MR. ZWALLY: No further questions, Your Honor.

6 MR. RYAN: I have no questions.

7 MR. MANN: I have no questions.

8 JUDGE KLOVEKORN: Let's take a ten minute recess at
9 this time.

10 (Whereupon, a brief recess was taken.)

11 JUDGE KLOVEKORN: Let's go back on the record.

12 MR. YOUNG: Your Honor, I have no redirect examination
13 of Mr. Brennan.

14 JUDGE KLOVEKORN: The witness Mr. Brennan may be
15 excused. Thank you very much, sir.

16 MR. YOUNG: The next witness is Mr. Baldwin.

17 JUDGE KLOVEKORN: Do you want to move your exhibits in?

18 MR. MCCLELLAND: I would like them marked for the
19 record. We propose to move them in at the end of the record;
20 but I would like to have them marked. OCA Exhibits 1 and 2.

21 JUDGE KLOVEKORN: Without objection, they will be so
22 identified.

23 (OCA Exhibit No. 1, One-page document entitled
24 Brennan Special Study, was produced and marked for
25 identification.)

1 (OCA Exhibit No. 2, One-page document entitled
2 Application to PP&L for 1981, was produced and marked
3 for identification.)

4 MR. POPOWSKY: I would like to state my understanding
5 on the record that the OCA rate structure testimony will be
6 filed on March 7 and that the OCA rate of return testimony
7 will be filed on March 4. It's also my understanding, while
8 Mr. Rothschild is here, that the company intends to cross
9 examine Mr. Rothschild on rate of return on the 15th of
10 March?

11 MR. YOUNG: That's okay. Can we get the Commission's
12 rate of return man the same time?

13 MR. WILMARTH: 15th of March? I think he was planning
14 to submit his testimony the 1st.

15 MR. QUAIN: I think he anticipates cross on the 15th.

16 JUDGE KLOVEKORN: Mr. Young.

17 MR. YOUNG: Your Honor, Mr. Baldwin's testimony has
18 been identified and moved in evidence as have his exhibits
19 and he is available for cross examination at this set of
20 hearings in connection with his rate design and rate
21 structure work, cost of service. He has already been sworn
22 in these proceedings.

23 ANDREW J. BALDWIN, recalled as a witness, having been
24 previously duly sworn, was examined and testified further as
25 follows:

CROSS EXAMINATION

1
2 MR. YOUNG: I wonder if for general guidance, we could
3 get some general guidelines of by whom and for what length
4 he is going to be cross examined; whether he is going to be
5 on for half of tomorrow or all of tomorrow or what. We
6 could be off the record.

7 JUDGE KLOVEKORN: Yes. Off the record.

8 (Discussion off the record.)

9 JUDGE KLOVEKORN: Back on the record.

10 MR. WILMARTH: Good afternoon, Mr. Baldwin. I think
11 we will be very brief here.

12 BY MR. WILMARTH:

13 Q. Do you agree with me that a principle, if not the
14 principle for the company's rate filing, is the fight for
15 recognizing base rates of Susquehanna Unit 1?

16 A. That's a large portion of the request, yes.

17 Q. On a Pennsylvania jurisdictional basis, Unit 1
18 represents plant investment of some \$1.5 billion, does it
19 not? And I am referencing here your Exhibit AJB-3, Section
20 Roman III, Page 30?

21 A. That's correct.

22 Q. On line Unit 1 represents some 50 percent of PP&L's
23 total production investment. Again I am on Section III,
24 Page 30, looking at \$1.5 billion for Unit 1 as against \$2.7
25 billion total production plant.

1 A. Yes, that's correct.

2 Q. Now, reference, if you would, Company Exhibit
3 Regulation IV-C-1. You are the witness responsible for that
4 exhibit, correct?

5 A. Yes, sir.

6 Q. Am I correct that Exhibit IV-C-1, Roman four
7 capital C-1, reflects for this rate case, an overall
8 lowering of base fuel expense through the reduction of
9 energy cost recovery from some 14.1 mills down to 9.7 mills.

10 A. That's the estimated effect of the unit on energy
11 costs, yes.

12 Q. And that's what's shown on IV-C-1, is it not?

13 A. IV-C-1 strips base rates of the energy costs
14 currently exhibited there. I think at least the first
15 portion of that exhibit does. And the second portion of the
16 exhibit strips the proposed rates of the proposed base in
17 the energy cost rate of 9.6 mills.

18 Q. In other words, PP&L is anticipating a significant
19 expansion of its rate base, that is production plant
20 representing fixed cost to the company and a concomitant
21 reduction in energy costs, base fuel expense essentially
22 representing variables costs?

23 A. Yes.

24 Q. Examining the proposed tariff rates, Mr. Baldwin,
25 am I not correct that no kilowatt-hour charge for any

1 customer class has been reduced?

2 A. That's correct.

3 Q. If I examine the commercial and industrial
4 schedules which segregate demand and energy charges, I find
5 the kilowatt-hour, that is the energy charges have been
6 increased anywhere from 39 to 40 percent, would you agree
7 with that? Subject to check?

8 A. Subject to check, yes.

9 Q. And as a general matter, would you also agree that
10 the company's tariff proposal concomitantly increases demand
11 charges, those associated with fixed costs to serve by only
12 approximately some 25 percent, in other words, significantly
13 less than the percentage increase for energy charges?

14 A. That's correct.

15 Q. Now, Mr. Baldwin, if we could assume that PP&L's
16 present rates, to some extent, properly serve to recover
17 costs prior to commercialization of Unit 1, given the
18 proposed increase in demand related investment and proposed
19 decrease in energy related costs associated with Unit 1, how
20 does the company purport to justify proposed commercial and
21 industrial intra class rate designs where under the
22 percentage increase in the demand charge component is
23 significantly less than the percentage increase to the
24 energy charge component?

25 A. As we stated in a couple of portions of the filing,

1 our intent in this filing was to create a rate increase that
2 was generally uniform across all schedules.

3 We had looked at the results of the allocation and
4 determined what would be required to attempt to achieve
5 unity and decided that the adjustments associated with that
6 move were far too great to impose on our customers, that are
7 certain classes of customers at this time.

8 We also examined other propositions and also examined
9 a fairly uniform assignment of increases, noted that the
10 assignment of trees increases, accept for two minor
11 variations in rate schedules LP-5 and LP-6 pushed all rates
12 of return closer to system average on an index basis and
13 therefore concluded that that was a practical way to proceed
14 with this proposal.

15 Q. When you talk about adjustments to achieve unity
16 and pushing class rates of return closer to system average,
17 you are not addressing the issue of proper allocation
18 between demand and energy components, are you?

19 A. You used the word proper which I might object to,
20 but my answer to your question did not address the demand or
21 the KWH charges that were also proposed.

22 Q. Mr. Baldwin, you tend to take issue with my
23 characterization or my use of the word proper. Is it your
24 opinion that the proposed intra class rate design when
25 changes proposed to the intra class rate design are properly

1 reflective of anticipated changes in the company's operation
2 as a result of Unit 1 being taken into rate business and
3 coming on line?

4 A. That depends on how one makes the transition from
5 the cost allocation or your notion of what has happened to
6 this company and how one collects these charges. That's
7 really what's at issue here between us at the moment.

8 Obviously, if you take the demand costs as defined in
9 the cost allocation and compare that with what the explicit
10 demand charges are in given rates, you will fall short of
11 collecting demand charges that way.

12 Hence, it follows that some demand charges are being
13 reflected in the energy charge or the kilowatt-hour charge.
14 Now, whether that's proper or not is, I guess, a matter of
15 opinion.

16 MR. WILMARTH: Thank you, Mr. Baldwin. I have nothing
17 further.

18 JUDGE KLOVEKORN: Thank you. Before we go on with the
19 next counsel, we will take a 2 minute recess.

20 (Whereupon, a brief recess was taken.)

21 JUDGE KLOVEKORN: Back on the record. Mr. Ryan.

22 BY MR. RYAN:

23 Q. Mr. Baldwin, would it be a fair characterization of
24 the testimony in your Statement 5 with respect to the
25 development of the new rates for this case that there were

1 two major constraints that you were working on? One was to
2 develop rates which would generate an increase in net
3 revenues of some \$315 million and the other was to assign
4 the increase to each class on a -- and I think this is
5 your words -- fairly uniform basis.

6 Is that a fair summary of the approach you took in
7 designing the new rates?

8 A. Yes, it is.

9 Q. Now, with respect to the \$315 million increase that
10 was your target in designing these rates, was that a figure
11 that was provided to you by someone other than those who
12 work directly under you in designing rates?

13 A. Yes, it was.

14 Q. Can you tell us who that was?

15 A. Well, it's largely a development of data out of the
16 financial department, men such as Vanderslice and Bernini,
17 Bob Fortune as well as a very careful review on the part of
18 our senior management, the amount of the request and the
19 nature by which it was to be assigned.

20 Q. And then you said in your testimony and I'm reading
21 from Lines 22 to 25 on Page 10 that, "A review of the
22 allocation of the increase to the various rate classes was
23 determined that due to the magnitude of the increase it
24 should be assigned to each class on a fairly uniform basis."
25 Who decided to use that approach in assigning the increase

1 among the rate classes that's referred to in that sentence I
2 just read you?

3 A. It was one of several suggested methods that the
4 rate department developed and presented to senior management
5 and as a result of discussions at that level, the uniform
6 assignment was agreed upon.

7 Q. The suggestions of several methods were made by
8 people in your department?

9 A. Yes.

10 Q. For the choice to be made by people in senior
11 management, is that correct?

12 A. Yes.

13 Q. Once they made the choice that it should be on a
14 fairly uniform basis, then you proceeded to design rates to
15 accomplish that result, is that correct?

16 A. That is correct.

17 Q. There are several cost allocation studies in the
18 record here, a Historic and a Future 1. Were those cost
19 allocation studies used at all in designing your proposed
20 rates?

21 A. Only in a very limited way.

22 Q. In fact, if you -- go ahead?

23 A. That's all right. I have nothing further.

24 Q. Was it necessary to use those cost allocation
25 studies at all if your goal was to increase the rates on a

1 fairly uniform basis in all classes?

2 A. Obviously we could have made that move without a
3 cost allocation study. The study, itself provided a guide
4 as to the direction in which that particular change would
5 move our rates of return by classes. And it's suggested
6 that it was a reasonable way to go.

7 Without the study, we would, of course, have had no
8 idea as to the relative position of rate schedules within
9 that family of tariff, so that the allocation provided some
10 guidance along those lines.

11 Q. But weren't you committed to use the across the
12 board type approach because of the management level decision
13 that apparently was primarily based on concern over the
14 magnitude of the increase?

15 A. No. It was the other way around. We had a pretty
16 good idea that the increase was going to be 25 percent and
17 what the Rate Department did was package different prop-
18 ositions with different emphasis, within different schedules,
19 in order to produce a 25 percent increase, among which was a
20 fairly uniform increase assigned to all schedules.

21 So we started with a given target as to how much
22 revenues the percentage change would be in the proposal and
23 then designed rates to meet that objective.

24 Q. And rates that met that objective on a fairly
25 uniform basis for a --

1 A. That was the final outcome, yes.

2 Q. Do you agree, Mr. Baldwin, that generally, rates
3 should be designed so that the revenues would attract the
4 cost saving for various classes of customers?

5 A. From a technical cost point of view, that would be
6 correct.

7 MR. RYAN: May I have a minute, please, Your Honor?

8 JUDGE KLOVEKORN: Certainly.

9 BY MR. RYAN:

10 Q. Let me go back to the sequence of events here.
11 Were the cost allocation studies prepared before the
12 decision by senior management as to how the increase would
13 be allocated among rate classes?

14 A. Yes.

15 Q. Were they available to the senior management at
16 that time?

17 A. Yes. Now, they may not have been in their final
18 refined state, but they were worked up well enough to make
19 these kinds of decisions.

20 Q. Could you tell us what the alternatives were that
21 were presented to the senior management?

22 A. There were three. One that's shown in I think my
23 Exhibit 4, which shows the percentage necessary to get each
24 class up to uniform rates of return. The second one was a
25 variation of assignment of increases based on an index basis,

1 a technique that we had used in previous cases.

2 It is difficult to put it into words. Perhaps an
3 arithmetic example would be helpful if we could summon one
4 up. It only goes part way in dealing with moving rates and
5 rates of return towards uniformity. It doesn't -- well, let
6 me use an example.

7 As I recall, 31 percent increase was required to get
8 the residential service up to the same rate of return as the
9 system rate of return. A modified position that we offered
10 was to increase that service 28 percent. That would take
11 the residential rate of return partway towards the system
12 but not all the way.

13 And of course, it would have a moderating effect on
14 different schedules so that you would -- it's kind of a
15 compromise position. You only go part way in a sense. The
16 third one was the uniform approach.

17 Q. But in all of those approaches that were laid out
18 for management's consideration, was the principal focus on
19 the percentage of increase to the class over existing levels
20 of rates?

21 A. Well, you are forcing me to speak for management,
22 now, but it would be my judgment that they were influenced
23 by the amounts of increases required to make certain
24 maneuvers and finally concluded that the best most practical
25 reasonable solution was to assign uniform increases.

1 Q. Can we put some names on this senior management?

2 Who the people were who made that choice?

3 A. Well, there is the President, Robert Campbell;
4 Senior Vice President, Robert Fortune; Leon Nonemaker, John
5 Kauffman, Merlin Herzog, Harley Collins.

6 Q. You mentioned that management was given, senior
7 management was given cost allocation studies that were, I
8 believe you said, perhaps a little earlier stage than what's
9 in evidence here, but basically the cost studies that have
10 been introduced into evidence in this case, is that correct?

11 A. That's correct.

12 Q. Were there any substantial changes in methodology
13 involved than that which was shown for management to review
14 in making that decision and what you have put in evidence in
15 this case?

16 A. Neither method nor result.

17 Q. Nor result. Cost allocation studies tend to show
18 rates of return on service to various customer classes, is
19 that correct?

20 A. Yes, they do.

21 Q. Were the studies that were given to senior
22 management based exclusively on the 12 coincident peak
23 method of allocation that the company prefers and that the
24 company has used in its two studies introduced into evidence
25 in this case?

1 A. It's my recollection that our general discussion
2 with senior management dealt only with the cost allocation
3 recommended by the company in this case.

4 Q. Therefore, the indicated rates of return would be
5 the same as the ones that you have put into evidence or very
6 close to it?

7 A. It would be very close or exactly the same as the
8 results of the average of 12 contribution to monthly peak.

9 Q. The use of the 12 coincident peak method that you
10 have used here, and that I believe was used in prior cases
11 is a selection of methodology by senior management or by
12 members of the Rate Department?

13 A. I would characterize that as a Rate Department
14 recommendation accepted by management.

15 Q. But they didn't really know the alternatives in
16 this case because they were only given the 12 CP study,
17 right? As far as indicated rates of return under other
18 methodologies?

19 A. We spent little or no time on other methods.

20 Q. You did have to do other methods, right, in order
21 to meet the filing requirements? Didn't you have to provide
22 that in this case?

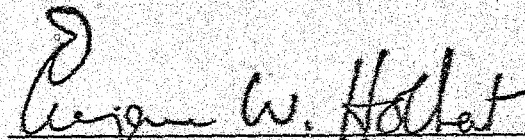
23 A. We did, indeed.

24 MR. RYAN: Your Honor, I have no more questions of a
25 general nature that I wanted to ask.

1 JUDGE KLOVEKORN: Thank you, Mr. Ryan. We have
2 nothing further this afternoon, this hearing will stand
3 adjourned until 9:00 o'clock tomorrow morning.

4 (Whereupon, at 3:50 p.m., the hearing recessed, to
5 reconvene at 9:00 a.m. the following day.)
6

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

$$Y = 3.35 + .2498X_1 + .00008X_2 - .0125X_3 - .01339X_4 + 1.289X_5$$

 X_1 = common equity ratio X_2 = capitalization X_3 = bond rating X_4 = tax free dividend X_5 = time**DOCUMENT
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Application to PP&L for 1981

SECRETARY OF THE
Public Utility Commission

$$Y = 3.35$$

- + .2498 X 31.53% common equity
- + .00008 X \$4,206 million capitalization
- .0125 X 1 bond rating
- .01339 X 100% tax free dividend
- + 1.289 X 5 time factor

$$= 3.35 + 7.88 + .34 - .01 - 1.34 + 6.45 = \underline{\underline{16.67\%}}$$

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