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C O N T E N T S

<u>WITNESSES</u>	<u>DIRECT</u>	<u>CROSS</u>	<u>REDIRECT</u>	<u>RECROSS</u>
Robert Rosenthal By Ms. Chestnut	4694			
By Mr. Hall		4700		
Thomas P. Hill, Jr. By Mr. Hall	4732			
By Ms. Chestnut		4735		
By Mr. Kleppinger		4744		
Edward F. Sproat, III By Mr. Hall	4750			
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David R. Helwig By Mr. Hall	4768		4778	
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Vincent S. Boyer By Mr. Hall	4781			
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E X H I B I T S

<u>NUMBER</u>	<u>FOR IDENTIFICATION</u>	<u>IN EVIDENCE</u>
<u>PAIEUG Exhibit No.</u>		
12 (Response to oral data request to Mr. Pollock)	4693	4693
<u>Staff</u>		
Statement RAR-2 (Rosenthal)	4695	4698
Exhibit RAR-2A (Rosenthal)	4695	4698
<u>PECO</u>		
Statement No. 18K (Hill)	4734	4734
Statement No. 6A (Sproat)	4751	4751

E X H I B I T S (Continued)

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NUMBER

FOR IDENTIFICATION IN EVIDENCE

PECo

Statement No. 5A (Helwig)	4770	4772
Statement No. 5B (Helwig)	4772	4772
Statement No. 5C (Helwig)	4772	4772
Statement No. 1A (Boyer)	4783	4783
Statement No. 1B (Boyer)	4783	4783
Statement No. 1C (Boyer)	4783	4783

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P R O C E E D I N G S

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2 ADMINISTRATIVE LAW JUDGE JOSEPH MATUSCHAK: This is
3 the time and place set for further hearing in the matter of
4 Pennsylvania Public Utility Commission versus Philadelphia
5 Electric Company, docket number R-850152.

6 Are counsel ready to proceed?

7 MR. HALL: Yes, Your Honor.

8 MR. KLEPPINGER: Your Honor, perhaps as a brief
9 preliminary matter, I would just like to indicate for the
10 record that PAIEUG is serving Exhibit No. 12 on all parties
11 in the hearing room today and also by mail. Exhibit No. 12
12 is a response to an oral data request made to Mr. Pollock at
13 the hearing on Monday, March 10th. There was an agreement
14 at that time between myself and counsel for the Pennsylvania
15 Business Utility Users Group that we would provide that
16 response as an exhibit.

17 I have distributed this to the court reporter and
18 Your Honor and request that it be moved into the record.

19 JUDGE MATUSCHAK: Any objections?

20 (No response.)

21 JUDGE MATUSCHAK: Exhibit 12 is admitted into
22 evidence.

23 (Whereupon, the document was
24 marked as PAIEUG Exhibit No.
25 12 for identification, and
was received in evidence.)

1 JUDGE MATUSCHAK: Ms. Chestnut, do you have a witness?

2 MS. CHESTNUT: Yes, Your Honor. Before I present
3 the Staff witness, I would like to make a brief statement on
4 the record. Mr. Dennis Dougherty was scheduled to appear
5 this afternoon for cross-examination. Mr. Dougherty was
6 taken to the hospital this morning; so he will not be able
7 to appear for cross-examination.

8 With the agreement of Your Honor and the company,
9 I propose that Staff's alternate witness, who will adopt
10 Mr. Dougherty's surrebuttal testimony, be cross-examined on
11 Monday.

12 MR. HALL: That is agreeable to the company, Your
13 Honor.

14 JUDGE MATUSCHAK: Very well.

15 MS. CHESTNUT: Your Honor, Staff would like to call
16 as its witness Robert Rosenthal. Your Honor, Mr. Rosenthal
17 has already been sworn.

18 JUDGE MATUSCHAK: Yes.

19 Whereupon,

20 ROBERT ROSENTHAL

21 having previously been duly sworn, testified further as
22 follows:

23 DIRECT EXAMINATION

24 BY MS. CHESTNUT:

25 Q Good afternoon, Mr. Rosenthal.

1 A. Good afternoon.

2 Q. Are you the same Robert Rosenthal who has
3 testified previously in this proceeding?

4 A. Yes, I am.

5 Q. Did you prepare surrebuttal testimony for use
6 in this proceeding?

7 A. Yes, I did.

8 MS. CHESTNUT: Your Honor, I request that Mr.
9 Rosenthal's surrebuttal testimony be marked for identifica-
10 tion as Staff Statement RAR-2 and an exhibit which is attached
11 to that statement be marked as Staff Exhibit RAR-2A.

12 JUDGE MATUSCHAK: Very well.

13 (Whereupon, the documents were
14 marked as Staff Statement No.
15 RAR-2 and Staff Exhibit No.
16 RAR-2A for identification.)

17 MS. CHESTNUT: Copies of the statement and exhibit
18 have been distributed to Your Honor, the parties, and the
19 court reporter.

20 BY MS. CHESTNUT:

21 Q. Mr. Rosenthal, do you have before you what has
22 been marked for identification as Staff Statement RAR-2?

23 A. Yes.

24 Q. And Staff Exhibit RAR-2?

25 A. RAR-2A.

Q. RAR-2A; excuse me.

1 A. Yes.

2 Q. Do you have any additions, changes or corrections
3 to make to either of these documents at this time?

4 A. Yes, one minor change. On page 8, line 17, the
5 reference should be to "4-1-82." There have been some
6 updates to Schedule 6.

7 Q. Excuse me, Mr. Rosenthal. Before you do that --
8 oh, go ahead.

9 A. Pardon me?

10 Q. Go ahead.

11 A. There have been some revisions to Schedule 6
12 which correspond to various updates on the part of Mr. Hill.
13 If I can summarize what is currently contained, the current
14 Schedule 6, which was attached to Staff Exhibit RAR-2A,
15 corresponds to calculations contained in Mr. Hill's
16 Statement 18D.

17 We have also prepared an additional Schedule 6 (Revised)
18 with the date of 3-10-86, which corresponds to Mr. Hill's
19 Statement 18E.

20 I have also calculated new numbers to correspond
21 with Mr. Hill's Statement 18J.

22 Effectively, all these recalculations deal with the
23 present worth calculation and the difference between using
24 the two factors as Mr. Hill has done and the consolidated
25 factor that Staff has used.

1 If I may turn to page 7 of our statement where I
2 describe the difference in the original Schedule 6 versus
3 Mr. Hill's schedule 7.2 contained in Statement 18D, the
4 language as contained in there to reflect Statement 18E,
5 which is Mr. Hill's corrections, would read, beginning on
6 line 24, "The result of Staff's calculation is to increase
7 Mr. Hill's present worth cost of delay from \$91 million to
8 \$103 million for a difference of \$14 million."

9 That is how that language would read comparing our
10 3-10 revision to Statement 18E.

11 If you would follow along in Statement 18J, the
12 similar numbers would read, "The result of Staff's calcula-
13 tion is to increase Mr. Hill's present worth cost of delay
14 from \$63 million to \$72 for a difference of \$9 million."

15 Those three different expressions deal with the
16 like comparisons based on the present worth calculations
17 given the final -- what I believe to be the final update of
18 Mr. Hill's schedules.

19 We duplicated the same type of calculation for the
20 other portions of his analysis contained and described in
21 18J, which are principally his Schedule 1 revised 3-10-86.
22 It is captioned, "Schedule 1 of PECO Statement 18E," which
23 is revised 3-10-86.

24 Were the same calculations involving the present
25 worth factor used for all five items of Mr. Hill's development,

1 the numbers based on our present worth factors would read.
2 for Item 1, \$72 million, which I have previously described;
3 Item 2 --

4 MR. HALL: Excuse me, Mr. Rosenthal; would that be
5 in parentheses?

6 THE WITNESS: Yes, in parens.

7 Item 2 would read, \$147 million in parens. Item 3,
8 \$167 million; Item 4, \$64 million; and Item 5, \$335 million.
9 This is the same removal of what we consider to be an
10 internal compounding problem in the calculations.

11 That is, I believe, all of the updates to schedules.

12 BY MS. CHESTNUT:

13 Q With the changes, additions and corrections you
14 have noted, is the information contained in Staff Statement
15 RAR-2 and Staff Exhibit RAR-2A true and correct to the best
16 of your knowledge, information and belief?

17 A Yes, it is.

18 MS. CHESTNUT: Your Honor, I request the admission
19 of Staff Statement RAR-2 and Staff Exhibit RAR-2A subject
20 to any timely motions to strike or other objections.

21 JUDGE MATUSCHAK: The motion is granted.

22 (Whereupon, the documents
23 marked as Staff Statement No.
24 RAR-2 and Staff Exhibits No.
25 RAR-2A were received in
evidence.)

1 BY MS. CHESTNUT:

2 Q Mr. Rosenthal, do you have an additional comment
3 you wish to make at this time?

4 A Yes. I have reviewed additionally the full
5 statement of Mr. Hill in 18J along with, I believe, Mr. Clarey
6 and Mr. Boyer regarding discussion I contained in my Staff
7 Statement RAR-2 which deals with whether to use actual or
8 projected items in such an analysis.

9 When approaching the aspects of evaluating the impacts
10 of a prudent decision, there should be major recognition
11 of the aspects surrounding and conditions supporting the
12 decision. To incorporate only actual conditions without
13 examining the prospective conditions which supported the
14 decisions I believe provides an incomplete picture of the
15 decision review.

16 This is especially true when conditions have changed
17 dramatically from those forecasted at the time of the
18 decision.

19 For example, to simply adopt the water derated
20 savings calculation of Mr. Hill for the 1985 level of
21 savings assumes that the company would not have made any
22 greater or more successful efforts for a commercial
23 generating unit expected for full operation versus a
24 unit which was in test phase and which was not scheduled
25 for full requirements during the period and was in the midst

of licensing hearings.

1
2 I believe Mr. Boyer's discussion of his newly success-
3 ful water arrangements sheds some light in this area. Actual
4 experience may identify differences in expectation versus
5 reality as Mr. Hill in 18J has shown in his discussion on
6 page 5 where he provides the difference in station O&M
7 escalation experienced versus his assumption. However, a
8 fully informed review must weigh both analyses, remembering
9 it is the expectation which produced the decision and hence
10 should not be ignored.

11 Much as a great deal of this hearing time in this
12 case has been devoted to an exploration of expected fuel
13 savings and guarantees thereof, the decision in this
14 case will be based upon an expectation and may require a
15 guarantee. Such a requirement may also have been a part of
16 a 1983 decision such as has been proposed by OCA.

17 That concludes my comments.

18 MS. CHESTNUT: Thank you, Mr. Rosenthal. Your Honor,
19 Mr. Rosenthal is available for cross-examination.

20 JUDGE MATUSCHAK: Mr. Hall?

21 MR. HALL: Thank you, Your Honor.

22 CROSS-EXAMINATION

23 BY MR. HALL:

24 Q Mr. Rosenthal, one of the comments that you made
25 in your additional comments here this morning and which you

1 also make in your Statement RAR-2 was, as I understand it,
2 a disagreement on your part that in doing an analysis such
3 as Mr. Hill has done, that there should be employed in
4 performing that analysis actual data of conditions as they
5 exist.

6 Is that a fair characterization of your position?

7 A. I have discussed Mr. Hill's application of the
8 actual data or imposition of assumed Limerick operations on
9 the actual data, and I believe that in order to evaluate
10 what the delay may have been and the aspects associated with
11 that, that by limiting it to a water derated period or
12 calculation is insufficient, in that a full examination of
13 what the savings would have been without that water problem
14 is in order.

15 Q. Leaving aside the water problem, Mr. Rosenthal,
16 I am referring to the fuel savings issue and the magnitude
17 of the fuel savings, which I believe you discuss in your
18 prepared statement.

19 Let me see if I can ask the question this way: do
20 you disagree with the approach that Mr. Hill uses looking
21 at actual data as it has existed from 1983 to the present
22 in developing his analysis of the costs versus benefits
23 of the various alternative completion dates of the plant
24 which have been developed in this proceeding? Do you
25 disagree with his use of actual data in that analysis?

1 A. He has used the actual data appropriately for
2 the analysis. I just believe that there is more to the
3 analysis that should be done than just the actual data and
4 imposition of certain conditions on that data.

5 He is assuming, for instance, a Limerick schedule
6 which I presume is just a backing out or a change in time
7 of the currently projected schedule and just placing it down
8 over that. Certainly, an actual operation would have been
9 something different through any period of time.

10 But in terms of attempting to evaluate what that is
11 in a back-cast mode, that is one approach.

12 The other approach is to go in and try to rerun the
13 whole study with it in in that basis. You may get different
14 answers but not to a great deal of difference.

15 Q. As I understand you, Mr. Rosenthal, you're saying
16 you don't disagree with Mr. Hill's use of actual data, actual
17 O&M or actual fuel savings data, as he has used it in his
18 study?

19 A. Not specifically, recognizing that for the
20 initial portion of his study, he didn't use O&M data for
21 the Limerick unit. He used prospective de-escalated to
22 the period with an assumed escalation factor in addition
23 to inflation.

24 Q. Let's try to deal with this conceptually. I
25 think we are becoming confused by trying to look at specific

1 costs.

2 You don't disagree with Mr. Hill's approach of
3 factoring in what he perceives to be actual data or conditions
4 that he believes would have occurred as actuality during the
5 period 1983 to 1985 in his analysis -- say 1986 in his
6 analysis?

7 A. His approach overall is not in error in that
8 respect.

9 Q. Is not what?

10 A. Not in error in that respect. He is using actual
11 data. He is attempting to the best of his ability to use
12 that data. I don't disagree with how he has gone about using
13 it.

14 Q. One of the pieces of data that Mr. Hill uses
15 from the historic period that I take it you do disagree with
16 is the water availability assumption and Mr. Hill's assump-
17 tion that there might possibly have been a water unavail-
18 ability period during 1985 if the unit had been completed
19 earlier; is that correct?

20 A. Yes.

21 Q. Do you have any opinion of your own, Mr. Rosenthal,
22 based on any study of the various governmental agencies that
23 would deal with water availability questions as to whether
24 water would or would not have been available in 1985?

25 A. I have no studies of the water availability on

1 the Schuylkill at that point in time at my disposal.

2 Mr. Hill has provided an additional calculation in
3 Statement 18J of savings without the water problem as he
4 inputted it into the problem. That is one measure of the
5 impact.

6 Certainly records were being kept by the company
7 because of their anticipated testing program of what flows
8 were at the intake for the Limerick station; and whether
9 those have been specifically used in Mr. Hill's analysis
10 or an assumed period in addition instead of that used by
11 Mr. Hill, that is not clear.

12 I think a more base question, though, is: would
13 other efforts have been made or available to the company at
14 that point in time which would have been actually, probably
15 a part of 1984 also with a 1983 on-line date.

16 Q. But as far as I understand your answer, Mr.
17 Rosenthal, you yourself have no opinion based on any direct
18 study that you have done as to whether water would or would
19 not have been available in 1985?

20 A. Absent -- the only option that was approved
21 certainly was the Titus and Cromby utilization transfer.
22 There were no other agreements entered into by the company
23 for that period that were approved.

24 The other proposal was the Beechwood pit. That was
25 subsequently not approved, but certainly there were other

1 options that were considered by the company, but they were
2 not as critical for operation as the unit was not anticipated
3 to be on line and was having the licensing problems. Had
4 that been a commercial unit, there would have been more need
5 for the company to have that water available during that
6 period.

7 Q Mr. Rosenthal, I think you're not answering my
8 question. My question is: have you yourself done a study
9 of the conditions involving water availability in 1985 to know
10 whether water would or would not have been available?

11 A No.

12 Q Mr. Rosenthal, at page 5 of your testimony, you
13 refer to the inclusion of a future replacement unit in the
14 analysis that Mr. Hill has done; is that not correct?

15 A Yes.

16 Q That's at lines 18 to 19. Would you agree with
17 me, Mr. Rosenthal, that indeed at some point Limerick will
18 be retired; is that not correct?

19 A Yes.

20 Q And depending upon its initial operation date,
21 that will vary the point at which Limerick would be retired;
22 is that not correct?

23 A Presumably given no life extension, yes.

24 Q And even if there was a life extension, I take it
25 we would agree that there would come a point at which

1 Limerick will be retired?

2 A. Ultimately, yes.

3 Q. Could we further agree that the date of retirement
4 and the need to construct replacement capacity would, in fact,
5 involve the cost that would be borne by the company?

6 A. Yes. Presumably --

7 Q. And would it not be correct -- your answer is
8 yes?

9 A. Yes. I was thinking of some other option which
10 might be the development of an independent source outside of
11 the firm which may replace the unit in the future such
12 as cogeneration types of developments or an independent
13 consortium.

14 Q. But that in and of itself would also have a cost,
15 would it not, for perhaps the ratepayer rather than the
16 company, directly for the ratepayer?

17 A. The ratepayer will fund either scenario.

18 Q. Would it not be correct that the level and nature
19 of this cost would differ depending upon the in-service
20 date that is assumed for Limerick in the analysis?

21 A. Could you restate the beginning part of that
22 question?

23 Q. Certainly. Would you not agree, Mr. Rosenthal,
24 that the nature of this cost, its timing, its occurrence,
25 its magnitude on a present worth basis, would differ

1 depending upon the date upon which it is assumed that Limerick
2 goes into service?

3 A. Yes.

4 Q. Would you not finally agree, Mr. Rosenthal, that
5 if, in fact, there is this differential cost effect, should
6 it not be reflected in an analysis such as that Mr. Hill has
7 done which seeks to analyze differences in costs between
8 different alternative assumptions as to in-service date?

9 A. Yes. It is reasonable to include that. I would
10 actually agree with Mr. Hill where he discusses in his
11 18J that this was a major lacking element on the part of
12 company analyses over the course of the construction of the
13 unit and that they should have been considered as part of
14 the long-term analysis at any point in time.

15 We do have a utility which pays cogenerators on that
16 basis incorporating a replacement value of not only their
17 proxy unit but also subsequent units in the calculation, but
18 it is within the present worth mathematics for their payment.

19 Q. Mr. Rosenthal, at page 3 of your prepared
20 statement, you refer to the company's HVAC system and its cost
21 at Limerick. Do you have that reference, sir?

22 A. Yes.

23 Q. Can you describe for me what an HVAC system does,
24 Mr. Rosenthal?

25 A. The heating, ventilating and air-conditioning.

1 contract, I was reviewing the notes from our field audit
2 associated with this work. Effectively, I believe it has
3 been further described by Mr. Clarey as to the specific
4 Schneider Sheet Metal, Incorporated contract.

5 It dealt with an area, I believe, in the containment
6 and non-containment areas supplying a system for ventilation
7 and air exchange for the unit.

8 We isolated this as one work area in the audit.
9 Mr. Dougherty could probably better explain the specifics
10 of how these numbers were developed. It is more a case of
11 that would have required more analysis to make an adjustment
12 for. We have not attempted to make any adjustment for this
13 work, nor to explore the actual cause of why it ranged from
14 \$11.5 million to \$58 million.

15 The actual comparison that was used was why it was
16 so much higher than Susquehanna's unit with the same
17 Schneider Sheet Metal, Incorporated contractor.

18 Also, Schneider Sheet Metal, Incorporated was an
19 item of the company's own internal audit on the unit, which
20 has been provided in other answers to interrogatories
21 dealing with their allocation of labor costs to Limerick.
22 That was one matter of discussion between the company and
23 presumably ultimate settlement with the contractor.

24 This is not an isolated problem of dealing with
25 Schneider Sheet Metal. It is a problem that Susquehanna

1 also had with them and other companies--West Penn Power has
2 also had problems with this contractor. So there are some
3 other problems that would have surrounded any adjustment
4 dealing with them.

5 We have not proposed to do any direct adjustment
6 for any of their work. However, some of their work was
7 performed in the post-'81 period and that value has been
8 adjusted, but the manhours billed themselves have not been
9 adjusted, nor the materials billed have not been adjusted,
10 other than to de-escalate them back to a pre-4-81 period.

11 Q I believe, as you've mentioned, Mr. Rosenthal,
12 you have sought to make no analysis to determine the
13 reasons for differences between the Limerick HVAC cost
14 that you state in your testimony and the HVAC cost of
15 Susquehanna; is that not correct?

16 A I myself made no analysis of that.

17 Q And you're not aware that anyone else on Trial
18 Staff made such an analysis either; is that not correct?

19 A There was some limited analysis and investigation
20 done by the field auditors, but I was not party to that
21 analysis.

22 Q And I take it you draw no conclusions with
23 respect to the justness or reasonableness of Limerick HVAC
24 costs based on the figures that you provided in your
25 testimony?

1 A. That is correct.

2 Q. Mr. Rosenthal, would you agree with me that in
3 doing a quantification analysis pursuant to an effort to
4 quantify the costs of what may be alleged to have been an
5 imprudent action, that one should employ actual cost data,
6 data as to the actual effects of the action upon the rate-
7 payer?

8 MS. CHESTNUT: Objection, Your Honor. The question
9 has been asked and answered several times.

10 MR. HALL: I'm not sure I recall it, Your Honor.

11 JUDGE MATUSCHAK: Overrule the objection.

12 THE WITNESS: I believe that actual can be examined
13 and employed. However, the analysis should not be limited
14 to only actual data, as the actual data was unknown at the
15 time of the decision and didn't govern the decision.

16 Such differences between expectation and reality
17 are to be expected to some extent, but the ultimate decision
18 was based upon the expectations and not on the actual
19 occurrences.

20 The company would respond to actual conditions as
21 things were ongoing where those actions may not have been
22 forecasted either.

23 BY MR. HALL:

24 Q. Mr. Rosenthal, would you agree that in seeking
25 to quantify effects, are we not seeking to determine what

1 the impact is in actual fact, in the real world upon a rate-
2 payer or some other party of the action that has been found
3 imprudent? Aren't we looking to real-world conditions, or
4 do you disagree with that?

5 A. I think you look to both the real-world conditions
6 and the conditions that govern the decision and the progress
7 of the unit in its operation much as -- if we can go back
8 to the water de-rations -- the company's efforts with an
9 operating commercial unit may have been different than what
10 has been assumed was the case for the test unit or what
11 actually occurred for a test unit at the same time. So that
12 you would potentially generate different conclusions, but
13 these factors should all be part of the decision-making
14 when you quantify it.

15 Q Let's take a hypothetical, Mr. Rosenthal, and
16 see where we come out on it. Let's assume that there is a
17 situation where a company makes a decision and at the date
18 the decision is made some six years before, the company made
19 the decision it would appear there would be a negative effect
20 upon ratepayers from having made that decision. However,
21 when the date comes that the effects are actually realized,
22 because of changed conditions, there really is no effect
23 upon ratepayers and there is no cost borne by ratepayers.

24 Under your view of appropriate quantification theory,
25

1 Mr. Rosenthal, would Staff seek to quantify a penalty adjust-
2 ment for the company in those circumstances?

3 A. We may still seek to quantify the results of
4 the decision and the basis for the decision and how that
5 affected the ultimate outcome, and we may still seek to
6 penalize the company for imprudent decision were that the
7 case, because it is still the actions which have generated
8 the ultimate conditions.

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1 Q Let me stop you there, Mr. Rosenthal, and be
2 clear on my hypothetical. My hypothetical is that once
3 the decision begins to affect the ratepayers, there is in
4 fact no injury, there is in fact no additional cost borne
5 by the ratepayer.

6 Are you saying that despite that fact, Staff would
7 still seek to penalize the company in some respect?

8 MS. CHESTNUT: Your Honor, to the extent that
9 Mr. Hall is asking the witness for a legal conclusion, I
10 object.

11 I will let Mr. Rosenthal answer on the basis that
12 he is not a lawyer and can't testify to a legal conclusion.
13 He can give his opinion as a Staff member, but it is not a
14 legal opinion.

15 JUDGE MATUSCHAK: This is cross-examination. Objec-
16 tion overruled.

17 THE WITNESS: An evaluation would probably be done
18 to ascertain what would have been the costs or effects had
19 the decision been different. And in terms of overall
20 differences, there may still be room for a penalty adjust-
21 ment based upon the decisions. There is still the ultimate
22 collection of dollars which may be higher than should have
23 been over the period. It may have been the basis for the
24 decision assumed significantly different conditions and
25 generated turn-arounds which are no longer as timely as

1 originally forecasted.

2 There is, I believe, good reason that there may
3 still be need to penalize management for what would have
4 been an imprudent decision. If there is no imprudence in
5 the decision initially, then there would in all probability
6 be no penalty. But there is that condition of holding the
7 company to task for its decision-making as well as the
8 ultimate outcome.

9 BY MR. HALL:

10 Q Let me see if I understand what you have said,
11 Mr. Rosenthal. I think we can agree -- and I think you
12 said that if there is imprudence by the company, and if in
13 fact that imprudence has a cost effect upon the ratepayer,
14 then Staff would seek to impose some form of penalty upon
15 the company relative to that negative cost effect on the
16 ratepayer; is that not correct?

17 A. That would surely be the case.

18 Q Would it be Staff's position that the cost im-
19 posed upon the company as a penalty should equal the cost
20 imposed upon the ratepayer as a result of the company's
21 imprudence?

22 A. I'm not sure they should equal, but there
23 should be potentially some balancing; but whether they
24 should be equal would be an item for the ultimate Commis-
25 sion decision.

1 Q. Would they in fact in any situation exceed the
2 cost imposed upon the ratepayer, under Staff's view?

3 A. Absent no legal constraints to that, they may.
4 We may be constrained legally from doing that, but there
5 may be an effort, depending upon overall management rela-
6 tions and management of the company, where such an action
7 may be warranted.

8 Q. Let us take the position where there is, in
9 Staff's view, imprudence, but there is no perceptible cost
10 imposed upon the ratepayer as the result of that imprudence.
11 Let's take that as an assumption of the question. There is
12 imprudence, but there is definitely no cost imposed upon
13 the ratepayer. Would Staff, under those circumstances,
14 still seek to impose a penalty upon the company?

15 MS. CHESTNUT: Your Honor, I am not going to object
16 in light of your previous ruling, but I think the record
17 should be clear that Mr. Rosenthal is not a lawyer and the
18 statement that he is making now is not binding on the
19 legal arguments that Staff is going to make in its brief.

20 MR. HALL: Your Honor, I recognize that the Law
21 Bureau can advance any positions that it wishes, but this
22 is the witness who is sworn to the Staff position, and I
23 think I am entitled to ask him as the Staff representative.

24 JUDGE MATUSCHAK: Proceed.

25 THE WITNESS: Given no perceptible cost change,

1 there would be, in all probability, a limitation to any
2 penalty put forth, and there may be no penalty put forth,
3 depending upon a final evaluation of the conditions at the
4 time.

5 It would still be an internal decision, initially,
6 based upon the conditions at that time.

7 BY MR. HALL:

8 Q Do I understand your answer correctly,
9 Mr. Rosenthal, that Staff would do a review and might or
10 might not seek to impose a penalty upon the company even
11 if there is no cost imposed upon the ratepayer?

12 A We would certainly do the review. There would
13 be discussion and a decision made as to whether a penalty
14 was in order at that time.

15 There are many aspects which would be involved in
16 that, which may even get to a financial evaluation also.

17 Q Do I understand your testimony correctly,
18 Mr. Rosenthal, that Staff, in this instance -- and by that
19 I mean with regard to the Limerick facility and Philadelphia
20 Electric -- is here proposing an adjustment which is un-
21 related to any evaluation by Staff of cost imposed upon the
22 ratepayer?

23 A I won't say it is totally unrelated. It is
24 dealing with the valuation of the facility, which will
25 ultimately result in rates charged to the ratepayer.

1 Q But is it not correct, Mr. Rosenthal, that both
2 you and Mr. Dougherty have testified here -- and I believe
3 the words of Mr. Dougherty are perhaps the clearest --
4 that Staff has sought to make no recommendation as to what
5 the appropriate cost of Limerick 1 is -- this is at page 3
6 of Mr. Dougherty's testimony -- or when it should have
7 been completed, yet Staff is testifying here to what you
8 refer to as a penalty adjustment; is that not correct?

9 A Yes. We haven't sought to reschedule --

10 MS. CHESTNUT: Excuse me, Your Honor. Mr. Hall has
11 misstated Mr. Dougherty's testimony. Mr. Dougherty is
12 making no recommendation as to the appropriate cost of
13 Limerick or when it should have been completed.

14 MR. HALL: What I was asking is whether Mr. Rosenthal
15 was agreeing with that. I don't see that he is making a
16 recommendation either, but if he wishes to disagree with
17 me, he can do so.

18 THE WITNESS: I have used Mr. Dougherty's material
19 to develop what would be the recognition of the unit. We
20 have not attempted to reschedule, we have not attempted to
21 remove materials or labor. We have attempted to revalue
22 the unit based upon the decisions of the Commission which
23 have already been made.

24 To that extent, that was the purpose of the testi-
25 mony, was to quantify our interpretation of the Commission

1 decision and the impacts that that has resulted in.

2 JUDGE MATUSCHAK: Mr. Rosenthal, in your mind, what
3 did the Commission mean when they said that we were to
4 proceed in this proceeding to quantify the cost of the
5 delay? Did the Commission mean the effect upon the rate-
6 payers, the effect of the delay upon the cost to the rate-
7 payers, or did it also include a possible penalty by the
8 Commission upon PECO for acting imprudently?

9 I think the first thing we've got to know is what
10 we are talking about here. Are we talking about penalty,
11 or are we talking about quantification of the cost? By
12 quantification of the cost, does that mean the additional
13 cost that would be imposed upon the ratepayers, separate
14 and apart from any penalty that the Commission might, in
15 some other proceeding, impose upon PECO?

16 As we view it, at least at this stage, we don't
17 think the penalty matter has any place in this proceeding.
18 The Commission can impose a penalty at its own discretion
19 outside of any quantification of the cost upon the rate-
20 payer. I don't think it is our task in this case to deter-
21 mine what, if any penalty, should be imposed upon PECO as
22 a result of imprudence that the Commission found. The
23 Commission could have done that in the 341 investigation
24 case without any recourse to this proceeding.

25 Our impression would be that we are confronted

1 with the task to quantify the costs, additional costs that
2 were imposed upon the ratepayer by reason of the imprudence
3 that the Commission found in the delay decisions.

4 I don't think any penalty provisions that the
5 Commission might want to impose or could impose at its
6 discretion beyond that has any place in this proceeding.

7 In your computation, have you included -- in your
8 quantification of costs, have you included any provision
9 for penalty in considering the "quantification"?

10 THE WITNESS: In our computations, which have
11 focused primarily on the value of the unit and the excess
12 costs in terms of the escalation which occurred from not
13 meeting the original announced date of 4/81, that is how
14 we have quantified the impact of the decisions.

15 JUDGE MATUSCHAK: Is it your testimony that even if
16 there was no impact upon the ratepayers, that we should
17 consider whether -- at least I infer that you meant that
18 even if there was no impact upon the ratepayers by reason
19 of increased costs as a result of the '76 and '78 delays,
20 that we might also consider whether we should add some
21 recognition that a penalty should be imposed in this
22 proceeding, even if there was no impact on the cost to the
23 ratepayers. I don't think that is relevant in this pro-
24 ceeding, as far as we can see.

25 The Commission could have made a decision as to the

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1 penalty in the investigation without any determination or
2 quantification of costs. Penalty provisions do not
3 necessarily have to be related to whether any additional
4 costs were imposed upon the ratepayer. That could have
5 been done by the Commission in the 341 case.

6 As we understand the Limerick investigation case,
7 the Commission did not quantify the costs as requested by
8 the OCA because there was not sufficient evidence as to
9 what those costs would be.

10 In our impression, we view that expression of the
11 Commission to mean that they could not determine the
12 effects of the '76 and '78 delays upon the consumers.

13 MR. HALL: If Mr. Rosenthal has no comment, I have
14 one or two additional questions.

15 MS. CHESTNUT: Mr. Rosenthal may not want to comment,
16 Your Honor, but I think I do.

17 First, Your Honor, I think that issue that you
18 brought up is more appropriately addressed in the briefs.

19 Perhaps Your Honor's thinking might be changed when
20 he sees Staff's legal discussion on this issue.

21 JUDGE MATUSCHAK: We will ask counsel: does counsel
22 interpret the Commission's direction to quantify the costs
23 in this proceeding of the imprudency of the '76 and '78
24 delay decisions to include penalty provisions, or are we
25 confined to determining the additional costs that were

1 imposed upon the ratepayer by reason of those decisions?

2 MS. CHESTNUT: Your Honor, the Commission indicated,
3 in the strongest possible language, that those delay deci-
4 sions were imprudent. It did not quantify them at that
5 time, it did not impose a penalty at that time, because
6 the Commission did not know what the total cost of
7 Limerick would be; it did not know when Limerick would be
8 complete; so, therefore, it could not make any kind of
9 adjustment at that time.

10 JUDGE MATUSCHAK: That's not what I asked you. I
11 asked you whether the Commission's expression in that 341
12 case, that Limerick investigation case, whether the
13 Commission gave a direction to us in this rate case to
14 determine and quantify the costs of the imprudent '76 and
15 '78 decisions to delay construction of Limerick.

16 MS. CHESTNUT: Your Honor, the Commission used the
17 term "quantification." It didn't say: assess the impact
18 on the ratepayers of the delays and the ultimate cost.

19 Had the Commission wished to do that, it could have
20 said do.

21 JUDGE MATUSCHAK: We don't think we are concerned
22 with any penalty provisions in this case. The Commission
23 could have done that if they wanted to in the investigation
24 case. They could still do it in a separate proceeding.

25 We don't view our assignment in this case to

1 determine what, if any, penalty provision should be imposed
2 on PECO as a result of those imprudent delays. We don't
3 think that it has anything to do with our assignment in
4 this case.

5 We believe our assignment is to determine, quantify,
6 the costs of those delay decisions as they affect --

7 MS. CHESTNUT: Your Honor, Staff takes exception to
8 your ruling.

9 JUDGE MATUSCHAK: Beg your pardon?

10 MS. CHESTNUT: Staff would take exception to your
11 ruling.

12 JUDGE MATUSCHAK: Very well; you may.

13 MR. HALL: Your Honor, I only have one or two addi-
14 tional questions of Mr. Rosenthal.

15 JUDGE MATUSCHAK: Very well.

16 BY MR. HALL:

17 Q Mr. Rosenthal, is it not correct that at page 1
18 and 2, line 26 on page 1 and over to line 2 on page 2,
19 you state that -- and I quote -- "it is not Staff's
20 opinion that the April 1981 date could have been achieved,
21 and no such analysis was presented;" is that not correct?

22 A. Yes.

23 Q I take it from that statement that you, yourself,
24 have done no analysis as to whether or not Limerick could
25 have been completed at any specific date, and certainly

1 not at April 1981?

2 A. That is correct. We were reviewing the Commis-
3 sion's order and believed that the April '81 date was a
4 date specifically found in the order as the announced date
5 and was a major criteria in the Commission's decision.

6 JUDGE MATUSCHAK: Did the Commission, in the
7 Limerick investigation, make any finding that Limerick
8 should have been in service in April 1981?

9 (No response.)

10 JUDGE MATUSCHAK: I believe Mr. Dougherty has testi-
11 fied that the reason he used that date was because that
12 was the original in-service date.

13 THE WITNESS: That was the date announced by the
14 company after the '74 delay, and that date is expressed in
15 the order. It is the only date expressed, I believe.

16 JUDGE MATUSCHAK: That's not what I asked you. I
17 asked you: did the Commission, in the Limerick investiga-
18 tion case at 341, did they make any determination that if
19 PECO had not made the '76 and '78 decisions, that the in-
20 service date of Limerick 1 should have been April 1981?

21 (No response.)

22 JUDGE MATUSCHAK: That decision, I believe, was
23 made in '82. Did the Commission make any finding at all
24 as to when Limerick 1, absent the '76 and '78 delay de-
25 cisions, could have been in service?

1 (Witness perusing documents.)

2 THE WITNESS: There is no specific finding on that
3 date. The date is contained within the body and discussed
4 therein as the effective date prior to those delay decisions.

5 JUDGE MATUSCHAK: But the Commission made no finding
6 in its decision in 1982 as to when, if PECO had not made
7 its '76 and '78 delay decisions, Limerick could have been
8 put in an in-service condition?

9 THE WITNESS: They do not specify a date for any of
10 the on-line time for the company.

11 JUDGE MATUSCHAK: Between the '74 decision and the
12 '76 decision, --

13 THE WITNESS: That is when the 4/81 date was the
14 effective announced date. In fact, Forecast I was prepared
15 during that interim period and confirmed that date.

16 JUDGE MATUSCHAK: We understand that in '74, when
17 the delay decision was made in '74, Limerick 1 was delayed
18 until April of '81.

19 THE WITNESS: Yes. If you will refer to Exhibit 2A --

20 JUDGE MATUSCHAK: That is not what I am concerned
21 about. I am concerned that a lot of things happened be-
22 tween '74 and '76; and did the Commission in 1982 make a
23 determination that despite the original intention of PECO
24 to have Limerick 1 in service in April of '81, did the
25 Commission make any finding as to whether, because of

1 intervening events that may have taken place, it was
2 still possible, or they felt or they found that Limerick
3 l should have been in service April of '81 but for the '76
4 and '78 delays?

5 THE WITNESS: The order is not that specific to
6 make that finding. They felt that the delay decisions, in
7 their words, were made with insufficient judgment on the
8 part of the company to reach what they considered to be
9 a reasonable man standard.

10 They did not make a finding of a particular date to
11 be expected on line.

12 JUDGE MATUSCHAK: That's all I have.

13 Proceed.

14 MR. HALL: Thank you, Your Honor. I only have one
15 or two additional questions.

16 BY MR. HALL:

17 Q Mr. Rosenthal, would you agree that you have
18 made no analysis of the effects upon Limerick completion
19 of various changes in NRC requirements and whether the NRC
20 would have required PECO to have complied with those
21 changes prior to bringing the plant into service?

22 A We did not make an evaluation of whether or not
23 those would have been available. I believe Mr. Hall dis-
24 cusses some of those. However, we made no removal of any
25 items associated with those changes, either, from the

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1 quantification.

2 Q. When you say "we," Mr. Rosenthal, you are speak-
3 ing of the Staff as an entirety, I take it?

4 A. Yes.

5 JUDGE MATUSCHAK: Mr. Rosenthal, I am wondering what
6 help your testimony and Mr. Dougherty's testimony is to us
7 if you haven't considered any outside influences that
8 could have taken place in the construction of Limerick.

9 I can't understand how your computations and your
10 findings are of any help to us.

11 Does the Staff adopt the testimony of Consumer
12 Advocate witnesses as to the earliest time that Limerick 1
13 could have been put in service?

14 I mean, you leave us with -- you give us figures
15 and you make findings, but you admit that -- at least
16 there has been other testimony in this case that other
17 intervening things may have taken place which would have
18 prevented Limerick from being completed in April of '81
19 whether or not the '76 and '78 delay decisions were made.

20 MS. CHESTNUT: Excuse me, Your Honor. Maybe I
21 could clarify exactly what Staff's approach is in this
22 case, --

23 JUDGE MATUSCHAK: I wish you would.

24 MS. CHESTNUT: -- which we will explain in more
25 detail in the brief, hopefully.

1 There are two ways to approach this type of
2 analysis. One way is to do what the Consumer Advocate did,
3 which is you go back to the starting point and you do a
4 reconstruction of what would have happened had certain
5 events occurred, and then you arrive at a date that the
6 plant should have been completed under that scenario.

7 You are going back and you are basically hypothe-
8 sizing as to what would have happened and what would have
9 been the impact of certain intervening events or conditions.

10 That is not what Staff did. We took a completely
11 different approach.

12 JUDGE MATUSCHAK: You're taking the approach --
13 you're going to take it as if nothing intervened that would
14 have affected that outside of it, and then leave it to the
15 company to come in and --

16 MS. CHESTNUT: Not at all, Your Honor. The ques-
17 tion of a potential completion date for Limerick other
18 than the February '86 date is not relevant. We are not
19 saying the plant could have been done in April of '81. We
20 are not saying that at all.

21 Our analysis doesn't go back and attempt to do that.
22 We don't say when the plant should have been completed.

23 We recognize the fact that the plant was actually
24 done in February of '86. That is a fact. The dollars
25 that the company expended to produce the costs associated

1 with that plant are a fact.

2 We have confined ourselves, really, to dealing
3 with actual costs. We took the plant as built. We in-
4 cluded all the NRC-mandated changes. We included the
5 Mark II modifications. We took the whole plant and simply
6 de-escalated the costs to reflect those two delays.

7 The only reason we even mentioned the April 1981
8 date is to provide a period upon which we can accrue AFUDC.

9 It is a completely different type of analysis. We
10 are not going back and saying what would have happened or
11 what could have happened during that time period.

12 We recognize that the plant is finished now, and
13 this is what the cost is.

14 JUDGE MATUSCHAK: I believe Mr. Dougherty testified
15 that what he actually had done was figure what the plant
16 would have cost if it had been in service in April '81 and
17 what the actual cost of the plant was as it was completed.

18 MS. CHESTNUT: What the cost would have been using
19 April '81 as one of the period points for accruing AFUDC,
20 using the plant as it is actually finished. It is not
21 what a plant would be in April of '81. That is not
22 exactly correct.

23 Maybe I'm not being clear, Your Honor.

24 JUDGE MATUSCHAK: As I understand, the testimony of
25 Staff is to show the increased costs of Limerick 1 by

1 reason of not being in service in April of '81. I got
2 that from the testimony of Mr. Dougherty. He said he
3 accepted April of '81 as the time it would have been
4 otherwise in service and assumed that it would have been
5 in service in April '81, and figured the escalation of
6 costs as a result of it not --

7 MS. CHESTNUT: That's right, Your Honor. In fact,
8 in the Commission's order that April '81 date was the last
9 completion date found reasonable by the Commission.

10 JUDGE MATUSCHAK: The Commission didn't find that.

11 MS. CHESTNUT: They accepted the company's forecast.
12 Nobody controverted that. That's why it is not a finding.

13 JUDGE MATUSCHAK: You show me one place in that
14 Limerick investigation where the Commission said that but
15 for the '76 and '78 delays, Limerick 1 should have been
16 completed in April of '81.

17 MS. CHESTNUT: It wasn't necessary to do that,
18 Your Honor, because everybody accepted that April date
19 which was forecasted by the company.

20 JUDGE MATUSCHAK: The only problem I have is that
21 I am having problems just trying to find out how your
22 testimony of Mr. Rosenthal and Mr. Dougherty is going to
23 help me in this case to determine or quantify the costs of
24 the '76 and the '78 delays.

25 Now, the Consumer Advocate has come up with some

1 testimony and some evidence that at least has provided
2 some help, but the Staff testimony at this stage --

3 MS. CHESTNUT: Well, I hope Your Honor will keep an
4 open mind and read our brief.

5 JUDGE MATUSCHAK: I am going to keep an open mind.
6 I am asking for help, is what I am asking for, and I am
7 not getting it from Staff.

8 MR. HALL: If Your Honor please, I believe I have
9 two other questions of Mr. Rosenthal.

10 BY MR. HALL:

11 Q. Mr. Rosenthal, did you or others on Staff do
12 any analysis of the NRC licensing process and whether or
13 not Limerick could have obtained an operating license prior
14 to the date upon which it actually did?

15 MS. CHESTNUT: Excuse me, Your Honor; I think that
16 is outside the scope of Mr. Rosenthal's surrebuttal
17 testimony.

18 JUDGE MATUSCHAK: I think it is. Objection
19 sustained.

20 MR. HALL: Your Honor, I don't believe it is.
21 Mr. Rosenthal has proposed an adjustment here using a 4/81
22 date. I am trying to show that in fact he did not con-
23 sider a number of specific factors which the company
24 believes --

25 JUDGE MATUSCHAK: I think he admitted that, that he

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1 hadn't considered any outside influences in his computa-
2 tions, that he took the figures, the costs, as of one
3 date and the costs as of another date.

4 That is my difficulty. That is what I have ex-
5 pressed as my difficulty in this case. I don't know how
6 that testimony is really helpful if I don't have all of
7 the elements of it.

8 MR. HALL: With that, I will withdraw the question.
9 Thank you.

10 I have no further questions.

11 MR. WERSAN: Your Honor, we have no cross, so maybe
12 we can take a break.

13 JUDGE MATUSCHAK: Very well.

14 (Recess.)
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1 JUDGE MATUSCHAK: When you're ready.

2 MS. CHESTNUT: Your Honor, I have no redirect
3 examination of Mr. Rosenthal.

4 JUDGE MATUSCHAK: Do you have anything, Mr. Wersan?

5 MR. WERSAN: No, I have nothing, Your Honor.

6 JUDGE MATUSCHAK: Does anyone else have any cross-
7 examination?

8 MR. KLEPPINGER: No, Your Honor.

9 JUDGE MATUSCHAK: Thank you.

10 (Witness excused.)

11 MR. HALL: Your Honor, we have available for cross-
12 examination now Mr. Thomas P. Hill.

13 JUDGE MATUSCHAK: The witness has been previously
14 sworn.

15 Whereupon,

16 THOMAS P. HILL, JR.

17 having previously been duly sworn, testified further as
18 follows:

19 DIRECT EXAMINATION

20 BY MR. HALL:

21 Q Mr. Hill, I believe that you are being presented
22 here today to be available for cross-examination on portions
23 of your statements involving PECO Statement Nos. 18D, 18E,
24 18H, 18J and 18K; is that correct?

25 A. Yes, and 18I if anyone has questions.

1 Q. And 18I?

2 A. Yes.

3 Q. Could you state briefly for the record your
4 understanding, Mr. Hill, of the subjects which you are being
5 presented for cross-examination on here today?

6 A. Yes. It is my understanding that my cross today
7 will concern Limerick related issues, primarily the issue
8 associated with the quantification and the costs of the
9 1976 and 1978 announcements by the company to delay the
10 in-service date for Limerick.

11 In addition, there are some corollary issues
12 presented by the Governor's Energy Council, the Utility
13 Users Committee and the Industrial Energy Users Group on
14 certain economic issues contained in Statement 18H.

15 Finally, Statement 18I is my responsive statement
16 to the Commission's tentative order at Docket C-78080459,
17 which was a requirement to file certain data in response to
18 the Commission's amended order in the Keystone Alliance
19 proceeding.

20 Q. Mr. Hill, is it not correct that you have
21 identified and sworn to the accuracy of the information
22 provided in each of these statements except 18K?

23 A. That's correct.

24 Q. Do you have before you PECO Statement No. 18K,
25 Mr. Hill?

1 A. Yes, I do.

2 Q. Is that a document of some 6 pages with one
3 attached schedule?

4 A. Yes, it is.

5 Q. Was that document prepared by you or under your
6 direct supervision?

7 A. It was.

8 Q. Is the data contained therein true and correct
9 to the best of your knowledge and belief?

10 A. Yes, it is.

11 Q. Would you answer the questions stated there today
12 as stated if they were asked to you today?

13 A. Yes, I would.

14 MR. HALL: Your Honor, I would ask that Mr. Hill's
15 Statement 18K be identified as PECO Statement 18K and that
16 it be admitted into the record.

17 JUDGE MATUSCHAK: Subject to any timely objections
18 or exceptions, the motion is granted.

19 (Whereupon, the document was
20 marked as PECO Statement No.
21 18K for identification, and
was received in evidence.)

22 MR. HALL: Your Honor, Mr. Hill is available for
23 cross-examination.

24 JUDGE MATUSCHAK: Staff?

25 MS. CHESTNUT: Thank you, Your Honor.

CROSS-EXAMINATION

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BY MS. CHESTNUT:

Q Good afternoon, Mr. Hill.

A Good afternoon, Ms. Chestnut.

Q Mr. Hill, do you have a degree in economics?

A No, I do not.

Q Are you employed by Philadelphia Electric Company as an economist?

A No, I am not.

Q Mr. Hill, I would like to go through your various analyses concerning the carrying charges that you presented in your various statements.

First in Statement 18D, you presented an analysis to show that the delay of having Limerick go in service on February of '86 rather than November of '83 resulted in a benefit on a net present worth basis of \$264 million; is that correct? That is Schedule 7.2 of Statement 18D.

A Would you repeat your number that you utilized?

Q \$264 million.

A Yes, and I subsequently adjusted that number for the incorporation of further adjustments proposed by Consumer Advocate witnesses.

Q And you presented this revised analysis in Statement 18E?

A That's correct. I believe I also made another

1 modification in --

2 Q We'll get to that in just a second.

3 A Fine.

4 Q In 18E, Mr. Hill, your analysis shows that if
5 Limerick had gone into service in November of '83 rather
6 than February of '86, there would have been \$91 million less
7 of carrying charges on a net present worth revenue require-
8 ment basis; is that correct?

9 A Yes. Just for clarification, if we are going to
10 go on, those present worth benefits in cost that you have
11 stated are based upon Limerick 1 and 100 percent of common
12 plant.

13 Q Yes; you're right, Mr. Hill. You also presented
14 analyses showing Limerick and 50 percent of common.

15 A Yes, I did.

16 Q Then finally in Statement 18J, you further revise
17 your analysis to derive a cost of \$63 million, which means
18 that it would have cost \$63 million more in carrying charges
19 on a net worth revenue requirement basis had Limerick gone
20 into service in November of 1983; is that correct?

21 A Yes, that number is correct.

22 Q Will you be presenting any further analysis,
23 Mr. Hill, or do you have any further revisions to make to
24 that before the close of the record?

25 A No, I don't believe there should be any.

1 Q In addition, with respect to this analysis,
2 Mr. Hill, Mr. Rosenthal in his testimony identified an
3 internal compounding error which you discuss on page 6 of
4 Statement 18D; is that correct?

5 A Yes, I do discuss that.

6 Q Would you agree that this internal compounding
7 error also affects Line Item 5 on your various schedules,
8 which is the change in customer revenue requirements for
9 1975 to maintain mortgage coverage for earlier service date?

10 A Yes. The compounding error that Mr. Rosenthal
11 discusses affects to a minor degree, which I believe he has
12 indicated in his cross-examination today, several -- in fact,
13 all of the elements which I present in my revenue requirements
14 analysis.

15 The sum total of those is -- I can add them up, but
16 it's only several million dollars associated with that
17 compounding error, and I can accept Mr. Rosenthal's
18 proposed change to my present worth analysis.

19 Q Thank you, Mr. Hill. I guess with respect to
20 the mortgage cover factor, isn't it correct that you indicate
21 that the information that you show there came from the
22 testimony of Mr. Paquette?

23 A It was based upon the testimony of Mr. Paquette,
24 that's correct.

25 Q Mr. Hill, moving to your Statement No. 18J -- I'm

1 sorry; that's not right. It is 18D; I'm sorry.

2 MR. HALL: Did you say "D"?

3 MS. CHESTNUT: "D."

4 BY MS. CHESTNUT:

5 Q On page 13 of that statement, Mr. Hill, on line 2,
6 you're talking about the 80/20 ECR.

7 A Yes.

8 Q You use the word "proposal" on line 2. By
9 "proposal," do you mean the 80/20 split ordered by the
10 Commission?

11 A I think we've discussed this before. I think the
12 Commission's order indicates that we are to file within the
13 context of this case an 80/20 mechanism. I do not interpret
14 that as being a final order on the 80/20 mechanism.

15 Q Well, when you say "proposal," though, that is
16 what you mean. You don't mean any proposal such as
17 Dr. Wilson's or any other party?

18 A No. My wording refers to my understanding of
19 what the Commission ordered as a result of its ECR-8 order.

20 Q When you say, "If this proposal is adopted," the
21 fact as found by the Administrative Law Judge in this
22 proceeding is the Commission did already adopt that
23 modification, whether you agree with that or not?

24 A I have not read such a document, but I will
25 accept that if that is, in fact, correct.

1 Q Isn't it correct, Mr. Hill, that the company for
2 various items in this rate proceeding has to use an assumed
3 capacity factor for its nuclear units -- maybe I should be
4 more specific on that.

5 Isn't it correct, Mr. Hill, that the company has
6 to use a capacity factor to calculate the cash working
7 capital claim associated with Limerick fuel?

8 A Are you referring to the company's claim in our
9 accounting exhibit for the addition to rate base to reflect
10 the average over the next two-year period of the amount of
11 fuel in the reactor, which I believe is B-21 --

12 Q I am referring to page C-11 of TPH-2. Do you
13 have that with you?

14 A I have it, if you will give me a moment. Excuse
15 me.

16 (Pause.)

17 Q C-11 and C-11a, Mr. Hill.

18 A I have that exhibit and those references, and I
19 don't quite agree with your statement. The company does
20 not have to develop a capacity factor to develop this
21 average for fuel in the reactor.

22 What the company has to do is make assumptions with
23 regard to refueling outage and an estimated forced outage
24 rate; and when you look at that over a specific period of
25 time, one can derive a capacity factor, which is what was

1 done, by the way, on page C-11.

2 Q And the spent fuel claim, Mr. Hill, that also
3 rests on an assumption concerning operation of Limerick?

4 A Q The spent fuel claim does, to my understanding,
5 rely on a specified average capacity factor.

6 Q Now, Mr. Hill, further in your testimony at
7 Statement 18D, on page 15 you discuss the \$200 million
8 estimated average annual energy savings for the first two
9 years.

10 A Yes, I do.

11 Q And you state that that is no longer representative
12 of current operational conditions.

13 A That's correct.

14 Q I'm not quite sure if you answered this yesterday,
15 but have you prepared a revised estimated average annual
16 energy savings for the first two years? I know that you did
17 not revise the base energy component, but did you prepare
18 a revised savings estimate?

19 A No, I did not.

20 Q Do you know if anybody has?

21 A I believe, as I stated yesterday, Mr. Carroll
22 presented certain capacity factor results for the first
23 two years of operation for Limerick, and I believe he
24 presented savings results based upon the data included in
25 his Exhibit JJC-1, but I don't recall what those results

1 were.

2 Q Do you remember if it was lower than the 207
3 average?

4 A One was lower, I believe, and one was slightly
5 higher. As I indicated yesterday, the first year was
6 approximately \$150 million and the second year was 200-and-
7 some-million. I don't recall what the numbers were.

8 Q What about the average? Because to get to the
9 207, that rests on, I think, 155 for the first year and
10 200-something for the second year.

11 A I believe the average is lower. I also, as I
12 indicated yesterday, would believe it would be lower based
13 upon our agreement with the Consumer Advocate to supply
14 a re-estimate of the first year of rate effectiveness based
15 upon a \$24 per barrel price of oil.

16 Q Now, Mr. Hill, if you used a lower estimate for
17 annual energy savings for the first two years and you had,
18 in fact, reduced the proposed base energy component of the
19 filing, the reduction to the base energy component would
20 be less; isn't that correct?

21 A I don't know without performing that calculation,
22 because it requires two production cost model runs, one
23 with Limerick 1 in operation and one without.

24 What that delta would be which was the basis for
25 our reduction in the base cost of energy, I wouldn't know

1 without going through the calculations.

2 Q. But we are assuming for the moment, Mr. Hill,
3 that the estimated fuel savings is less than the \$207 million
4 average; okay?

5 A. Fine.

6 Q. I'm not going to venture to give you a number.
7 I'm just asking as a conceptual matter that if the anticipated
8 energy savings were less, then the reduction to the base
9 energy component would be less than what you have in the
10 filing?

11 A. Yes, that's correct, mathematically.

12 Q. And therefore, if that were done, the requested
13 base rate revenue increase would be higher than the net
14 number proposed by the company?

15 A. If there was a change in the base cost and the
16 company had performed such a calculation when we filed, the
17 net result of the base rate increase would be different than
18 \$671 million.

19 As I indicated yesterday, we have made no change to
20 our base cost in the energy cost rate. Therefore, there is
21 no change in our base rate request in this proceeding.

22 Q. I understand that, Mr. Hill. That's not really
23 what I'm asking you. I understand the company is not
24 changing the reduction to 20 mills, and that, therefore,
25 it is, in your opinion, still a net \$671 million rate

1 increase?

2 A. That's correct.

3 Q. But what I'm asking is --

4 A. Base rate increase.

5 Q. Base rate increase.

6 What I'm asking is: if instead of that \$207 million --
7 well, let me back up. If you had chosen instead to flow-
8 through less of the energy savings to the base energy
9 component, the net base rate increase would have been
10 greater than the net \$671 million number?

11 A. (No response.)

12 Q. Maybe I can ask it a different way.

13 A. I wish you would.

14 Q. The \$671 million number is net. It is not a
15 gross increase?

16 A. It is a net number which affects only base rates.

17 Q. We're only talking about base rates here. And
18 what it's net of is the \$207 million average energy savings
19 for the next two years?

20 A. Those were the mathematics to derive that, yes.

21 Q. If the \$207 million average energy savings were
22 less -- say it were \$150 million -- the net base rate revenue
23 increase would be greater than the net \$671 million?

24 A. I can agree with that.

25 MS. CHESTNUT: In that case, I have no further

1 questions. Thank you.

2 MR. WERSAN: No questions, Your Honor.

3 JUDGE MATUSCHAK: Mr. Kleppinger?

4 MR. KLEPPINGER: Thank you, Your Honor.

5 CROSS-EXAMINATION

6 BY MR. KLEPPINGER:

7 Q Good afternoon, Mr. Hill.

8 A Good afternoon, Mr. Kleppinger.

9 Q In Statement 18D, you attached as Schedule 1 the
10 company's response to the EEI survey regarding cost of
11 capital; is that correct?

12 A Yes.

13 Q On the first page of that schedule, the names of
14 Mr. Paquette and Mr. Wright appear. Do you know if
15 Mr. Wright or Mr. Paquette actually prepared this response?

16 A This response was prepared by Mr. Wright. It was
17 reviewed by me and submitted to EEI under Mr. Paquette's
18 name since the questionnaire came through Mr. Paquette.

19 I approved the submission that Mr. Wright sent to
20 EEI.

21 Q And that submission tells us on page 2, does it
22 not, that the company utilizes an incremental cost of
23 capital to conduct internal economic evaluations of plans
24 for new facilities; is that correct?

25 A The company's response indicates that we utilize

1 incremental costs of capital, because we generally employ
2 incremental costs of capital in our analysis for economic
3 alternatives but on an after-tax basis.

4 Q. That was the point I wanted to clarify. The
5 14.52 percent which is derived on this schedule is a pre-tax
6 number, however?

7 A. That's correct.

8 Q. So that when Limerick 1 --

9 A. We were not asked that question, by the way, by
10 this questionnaire.

11 Q. I understand. Now, when you were planning
12 Limerick 1 then, would I be correct that you would have
13 utilized a similar calculation of your incremental cost
14 of capital but have derived it on an after-tax basis?

15 A. That's correct, based upon incremental capital
16 costs that we expected at the time of the analysis.

17 Q. So that when you make the statement in 18H at
18 page 6 that the company has utilized an after-tax cost of
19 capital for 30 years, you are referring there to an
20 incremental after-tax cost of capital?

21 A. Statement 18H, what page?

22 Q. Page 6, lines 7 through 10.

23 A. Could you please repeat your question?

24 Q. You indicate there that for the last 30 years,
25 the company has employed an after-tax cost of capital.

1 Does that mean incremental after-tax cost of capital?

2 A. For prospective analyses, the company over the
3 last 30 years has utilized incremental after-tax cost of
4 capital.

5 Q. Now, the EEI form goes on, does it not, to request
6 a differentiation between net of tax if a company were to
7 utilize non-incremental capital cost for its economic
8 evaluation; is that correct?

9 A. That's correct.

10 Q. And that part of the form wasn't completed
11 by PECO because PECO utilizes the incremental cost; is that
12 true?

13 A. Because generally PECO uses incremental after-tax
14 cost of capital as our -- well, they don't ask about discount
15 rate. We generally employ incremental costs of capital
16 in our economic evaluations on a prospective basis.

17 Q. Now, at pages 14 and 15 of Statement 18D, you
18 discuss potential drops in fuel prices, particularly oil
19 prices, and the benefits that has on ratepayers. I am
20 referring generally to your rebuttal of Mr. Falkenberg
21 begining at the bottom of page 14 and carrying over to
22 page 15.

23 A. Yes.

24 Q. Now, based on what we heard yesterday concerning
25 the behavior of the 80/20 ECR, when you state now at

1 lines 3 through 7 that if there is an actual reduction in
2 the cost of the price of fuel, the energy cost rate, which
3 is constructed on the basis of total energy cost, will
4 decline, would I be correct that only 80 percent of that
5 energy cost rate would decline in the subsequent year and
6 that the 20 percent of that decline would not be reconciled
7 and would continue to -- at least PECO's collection of those
8 revenues would have been retained?

9 A. That's correct. The 80/20 only provides for
10 reconciliation of 80 percent of total energy cost.

11 Likewise, if oil prices increase, the company would
12 not be entitled to recover on 20 percent.

13 Q. Finally, Mr. Hill, if we move over to 18H, you
14 discuss on page 4 Mr. Falkenberg's use of a six-year average
15 revenue requirement for Limerick. I believe one of the
16 points you're trying to make there is that you can't view
17 Limerick in isolation; that you've got to view the entire
18 revenue requirement picture for the company; is that
19 correct?

20 A. Yes, responding to what I believe is
21 Mr. Falkenberg incorrectly interpreting what I stated in my
22 testimony.

23 Q. Had PECO been seeking a base rate increase in
24 this proceeding without Limerick, would you have perceived it
25 likely that the company itself would have proposed the

1 three-year phase-in that it did?

2 A. Without Limerick in this base rate proceeding,
3 I don't know whether we would be in a base rate proceeding.

4 Q. So it's safe to say that not only was Limerick
5 the driving force for the base rate increase request; it also
6 was the driving force behind PECO's thinking of a need for
7 some type of phase-in?

8 A. The total revenue requirement level established
9 as filed was the impetus for the company's proposed three-
10 year in/three-year out phase-in, not specifically Limerick.
11 Limerick, obviously, was the major element, but it was the
12 total revenue requirement which we propose to phase-in under
13 that six-year plan.

14 MR. KLEPPINGER: Thank you, Mr. Hill. I have no
15 further questions, Your Honor.

16 JUDGE MATUSCHAK: Any redirect?

17 MR. HALL: No, Your Honor.

18 JUDGE MATUSCHAK: Thank you.

19 (Witness excused.)

20 MR. HALL: Your Honor, we have three additional
21 witnesses that we can present today: Mr. Sproat, Mr. Boyer,
22 and we do have Mr. Helwig available. Our plan would be to
23 present Mr. Sproat first unless the parties have any other
24 preference.

25 MR. WERSAN: That's fine.

1 MS. CHESTNUT: Your Honor, we are prepared to cross
2 Mr. Sproat. We did not realize that Mr. Boyer was going to
3 be on today. We thought it was Sproat and Helwig.

4 MR. HALL: I guess we had some conversation about
5 Mr. Boyer being available today. He can be available
6 tomorrow, too.

7 Could we put him on and have him crossed to the
8 extent that folks have cross? I did not specifically talk
9 to the Staff. So that's why you didn't know. It is my
10 fault.

11 MR. WERSAN: I could do Mr. Boyer today.

12 MR. HALL: You still don't want to do Mr. Helwig
13 today?

14 MR. WERSAN: It turns out that I could ask Mr. Helwig
15 a few questions but not on the -- I could do him tomorrow
16 or today. I just have a few questions.

17 MR. HALL: Why don't we present him today on what
18 you can do and get that out of the way.

19 MR. WERSAN: Fine.

20 (Pause.)
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1 MR. HALL: Your Honor, Mr. Sproat has been previously
2 sworn.

3 Whereupon,

4 EDWARD F. SPROAT, III

5 having previously been duly sworn, testified further as
6 follows:

7 DIRECT EXAMINATION

8 BY MR. HALL:

9 Q Mr. Sproat, do you have before you a document
10 entitled "Rebuttal Testimony of Edward F. Sproat, III,
11 Engineering Restraints to Schedule Acceleration Due to Late
12 Regulatory Changes"?

13 A Yes, I do.

14 Q Is this document in fact your prepared rebuttal
15 testimony for use in this proceeding?

16 A Yes, it is.

17 Q Mr. Sproat, was this document prepared under
18 your direction and supervision?

19 A Yes, it was.

20 Q Is the data contained within the document true
21 and correct to the best of your knowledge and belief?

22 A Yes, it is.

23 Q If I were to ask you the questions contained
24 in the document today would your answers be as stated
25 therein?

0
1 A Yes, they would be.

2 MR. HALL: Your Honor, I would ask that Mr. Sproat's

3 --
4 JUDGE MATUSCHAK: You might identify the document
5 he is testifying about.

6 MR. HALL: I would ask, Your Honor, that the
7 document be identified as PECO Statement Number 6A, it
8 being a document which is entitled "Rebuttal Testimony
9 of Edward F. Sproat, III, Engineering Restraints to
10 Schedule Acceleration Due to Late Regulatory Changes."

11 Your Honor, I would also ask that the document be
12 admitted into the record.

13 JUDGE MATUSCHAK: Subject to any timely exceptions
14 or objections, the motion is granted.

15 MR. HALL: Thank you, Your Honor.

16 (Whereupon, the document was
17 marked as PECO Statement No.
18 6A for identification and was
19 received in evidence.)

20 MR. HALL: Mr. Sproat is available for cross-
21 examination.

22 JUDGE MATUSCHAK: Staff?

23 MS. CHESTNUT: Thank you, Your Honor.

24 CROSS-EXAMINATION

25 BY MS. CHESTNUT:

Q Good afternoon, Mr. Sproat.

A Good afternoon.

1 Q Mr. Sproat, in your testimony you discuss a
2 fire protection modification.

3 A Yes.

4 Q On page 5 of your testimony, for example, you
5 explain briefly that the purpose was to assure the nuclear
6 plant could be safely shut down given a major fire at any
7 location within the station; is that correct?

8 A That's correct.

9 Q Could you tell us a little bit about how that
10 is done, how that is to be implemented?

11 A That was done by performing an analysis of the
12 equipment in the plant that is needed to shut the plant
13 down from a full power operation level, and we then
14 determined where in the plant that equipment is located,
15 as well as the associated cables and supporting equipment
16 for that primary equipment.

17 At that point in time we determine what types of
18 fire barriers exist between the locations of those
19 pieces of equipment, and we then assume that a fire
20 occurs in the plant, however, and destroys everything
21 within a given area. And a given area is defined as any
22 room or area of the plant which is surrounded by a concrete
23 barrier of wall which has a three-hour fire rating.

24 In other words, a fire inside that room could burn
25 for three hours and not breach that wall that is containing

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it.

After we assume that fire occurs, we take a look at what remaining pieces of equipment are left in the plant that are unaffected by that fire, and we determine whether or not the plant can be shut down given the loss of that room where the fire occurred.

Q And as you have explained it, as I think you have described it in your testimony, the physical modifications included raceway encapsulation, sprinkler additions, coating of structural steel with fire-resistant material, and installing of floors and walls with materials rated as fire barriers?

A That is correct.

Q And that is the things that you have just described?

A Yes.

Q I would like to focus first on the raceway encapsulation that you have mentioned. Would you please define "raceway" for us, or tell us what it is?

A Sure. A raceway is -- there are three types of raceways at Limerick. They are either cable trays, conduits or what we refer to as gutter or wireway, and that is any type of support equipment the cables, the electrical cables, are contained in, so that when we run a piece of cable from one area of the plant to another

1 we don't run it across the floors in a raceway.

2 Q Conduit is just a pipe; is that correct?

3 A That is correct.

4 Q And what is a tray?

5 A A tray looks very much like a ladder. As a
6 matter of fact, the trays at Limerick are ladders, a
7 ladder design.

8 And how about a gutter; will you tell us what that
9 looks like?

10 A Just like a gutter except it has a top on it.

11 Q Is all raceway considered safety-related?

12 A No, it is not.

13 Q Is some of it safety-related and some of it
14 not?

15 A Yes, that is correct. Some is safety-related
16 and some is not.

17 Q Are the raceways marked to differentiate them
18 between safety and non-safety-related?

19 A Yes, they are. We use a color coding system
20 that you can just look at it and term it.

21 Q What kind of colors do you use? Do you remember?

22 A There are four colors used for the safety-related
23 raceways, and we use black letters on white for the non-
24 safety-related.

25 Q So you say there are letters also on the safety-

1 related ones?

2 A Yes, that is correct.

3 Q Mr. Sproat, are the additional NRC requirements
4 concerned primarily with safety-related systems?

5 A Yes, they are.

6 Q Mr. Sproat, you make a statement at page 1 of
7 your statement that -- well, actually the question is,
8 "Could Limerick have received its operating license and
9 gone into operation in 1981 or 1982 as stated in Messrs.
10 Hanauer, O'Brien, Hall and Dougherty's testimony;" is that
11 correct?

12 A That is correct.

13 Q Did you read Mr. Hall's testimony?

14 A Yes, I did.

15 Q Can you show us where he assumes an in-service
16 date of 1981 or 1982 for Limerick?

17 A In Mr. Hall's testimony I believe that there
18 is -- he performs a quantification, and that quantification
19 is based on a certain date, and that date is -- and I
20 don't recall whether it was Mr. Dougherty or Mr. Hall, but
21 I know in Mr. Dougherty's testimony the April 1981 date
22 was used for the basis of the quantification; and Mr. Hall's
23 testimony -- I don't recall whether it used the same date
24 or the date that Mr. O'Brien developed in his testimony.

25 Q Do you have a copy of Mr. Hall's testimony with

1 you?

2 A No, I do not.

3 Q Perhaps I could show you a copy to help you
4 refresh your recollection.

5 A (Witness perusing document.)

6 Q Have you had a chance to review that document?

7 A Yes, I have.

8 Q Can you tell us where in there there is a
9 quantification associated with Limerick?

10 A There is not a direct quantification in there
11 associated with Limerick as per a date; however, on page
12 8 of this testimony in his last question and answer Mr.
13 Hall draws a conclusion that the additional NRC require-
14 ments imposed on Limerick could have been met, and that
15 their associated expenditures could have been avoided if
16 the project was completed at an earlier date; and I'm
17 specifically referring to that answer and disagreeing with
18 his conclusion.

19 Q Where does it mention Limerick in that answer?

20 A Given that his entire testimony is associated
21 with Limerick, I assumed that is what he was referring
22 to.

23 Q Where does it mention Limerick in his entire
24 testimony?

25 A His testimony is referring specifically to

1 causes of delay and impact of delay in construction of
 2 nuclear generating stations, and so as he is making a con-
 3 clusion concerning the regulatory impact on construction
 4 schedules for nuclear power generating stations in general,
 5 and since this is filed in the Limerick docket, I am
 6 assuming he's making a statement that this is applicable
 7 to Limerick.

8 Q But that is implied?

9 A Yes.

10 Q He nowhere does a Limerick-specific analysis?

11 A He nowhere does a specific Limerick analysis;
 12 that is correct.

13 MS. CHESTNUT: I have no further questions.

14 JUDGE MATUSCHAK: Consumer Advocate?

15 MR. WERSAN: Thank you, Your Honor.

16 CROSS-EXAMINATION

17 BY MR. WERSAN:

18 Q Good afternoon, Mr. Sproat.

19 A Good afternoon, Mr. Wersan.

20 Q I would like to refer you to page 3 of your
 21 Statement Number 6A. Am I correct that on that page, and
 22 also on the previous pages, you are discussing the
 23 radiation and meteorological monitoring system, RMMS?

24 A Yes.

25 Q And at line 7 you talk about whether or not

1 this "sophisticated" system was necessary at all plants
2 to meet NRC requirements; is that correct?

3 A Yes, that is correct.

4 Q Is there an NRC requirement that some form
5 of radiation and meteorological monitoring system be
6 installed at nuclear plants?

7 A Yes, there is.

8 Q And on that same page you discuss the
9 Susquehanna Station.

10 A Yes.

11 Q And at line 13 you state, "Susquehanna
12 minimally met NRC requirements" with respect to this system
13 at its plant; is that correct?

14 A That is correct.

15 Q Mr. Sproat, you are not suggesting that
16 Susquehanna Station is unsafe or not in compliance with
17 NRC requirements, are you?

18 A No, in no way. As a matter of fact, I stated
19 specifically that they did meet the requirements.

20 Q Now if you could turn to page 4, at line 27 you
21 are again talking about the RMMS, and you state that PECO
22 and Bechtel began conceptual design of the RMMS in early
23 1981 and awarded the purchase order in March 1982; is that
24 correct?

25 A That's correct.

1 Q At the time that PECO began the conceptual
2 design and awarded the purchase order in 1981 and in 1982
3 could you please tell me what the scheduled fuel load date
4 was for Limerick Unit 1?

5 A In 1981 and 1982 the scheduled fuel load date
6 was October 1984.

7 Q So you would agree with me that at that time
8 those designs and those activities were initiated subse-
9 quent to the earlier decisions which resulted in the
10 delay of fuel load to 1984?

11 A That's correct.

12 Q At page 5, as you have indicated in your
13 discussion with Ms. Chestnut, you are talking about fire
14 protection modifications; is that correct?

15 A Yes.

16 Q And at line 45 you state that sprinkler
17 additions were completed in early 1985, and at line 47
18 you state that the installation of the fire-rated seals
19 was completed in February 1985; is that correct?

20 A That is correct.

21 Q When in 1985 were the sprinkler additions
22 completed?

23 A I believe they were completed in the first
24 quarter of 1985; I can't give you a specific date or month
25 on that, but I believe it was somewhere in the February/

1 March time frame.

2 Q And why do you list the sprinkler additions
3 and the fire-rated seal installation in your discussion
4 in that paragraph on page 5?

5 A The reason there is that, if you notice, they
6 were completed after receipt of the low-power license
7 in October of 1984. The additional work that was
8 required to install those fire seals and the sprinklers
9 came about from an NRC inspection that was done on the
10 site in September of 1984, approximately one month prior
11 to our receiving the low-power license.

12 As a result of that inspection, the NRC inspection
13 team required that we make these additions over and above
14 the provisions we had already made for fire protection,
15 and they allowed us to have until we went to full power
16 -- or prior to achieving full power to make those
17 installations. And so that is why they are called out
18 in my testimony.

19 Q So you agree with me that those modifications
20 as required by the NRC which were required prior to fuel
21 load were allowed to be completed after fuel load as long
22 as they were completed by full power?

23 A Prior to exceeding five percent power.

24 Q Five percent; I'm sorry.

25 If you could look at page 6, please, at line 48,

1 you state that the Limerick Fire Protection Evaluation Report
2 which documented Limerick's compliance with the 1976 and
3 1978 regulations was submitted to the NRC in March 1981;
4 is that correct?

5 A That's correct.

6 Q You would agree with me again that in March
7 1981 the company had already rescheduled the fuel load
8 for Limerick Unit 1 to 1984?

9 A I believe that is correct.

10 Q On page 9, still discussing I believe the Fire
11 Protection Evaluation Reports, you discuss the Susquehanna
12 Station, and at line 38 you state that Susquehanna was
13 licensed while only being in compliance with -- and then
14 you give the citations to the regulations -- which you
15 characterize as not as astringent and prescriptive as the
16 later regulations; is that correct?

17 A That's correct.

18 Q Do you know when the Susquehanna plant submitted
19 its Fire Protection Evaluation Report with the NRC?

20 A I am not aware that Susquehanna Station has
21 a Fire Protection Evaluation Report per se. At Limerick,
22 because of the depth of the analysis that was requested
23 of us, we decided to submit a separate stand-alone report
24 that was incorporated into the Limerick Final Safety
25 Analysis Report. I do not know whether or not Susquehanna

1 filed a separate report like that or not, or whether they
2 just incorporated their discussion of their fire protection
3 design into their FSAR.

4 Q If they incorporated it into their FSAR, do
5 you know when that might have been filed with the NRC?

6 A I think I might. Just a second.

7 (Witness perusing documents.)

8 I can't put my finger on that right away.

9 Q Do you know if it would have been presented
10 to the NRC prior to when Philadelphia Electric's FPER
11 was submitted?

12 A I believe the original Susquehanna FSAR
13 submittal occurred sometime -- did occur prior to the 1981
14 submittal of the Limerick FSAR; that is correct?

15 Q In your opinion, is the Susquehanna Station
16 in violation of NRC requirements regarding fire protection?

17 A I'm not in a position to make a legal opinion
18 on that, given the complexities of the fire regulations
19 of the Nuclear Regulatory Commission. The documents which
20 both we and Susquehanna designed to, the branch technical
21 positions, are called guidance documents or staff
22 positions, which means that you can design alternatives
23 to those documents if you can present justifying analyses
24 and the NRC staff will accept those analyses.

25 Whether or not Susquehanna has completely evaluated,

1 analyzed, and the NRC accepted the deviations from those
2 documents, I do not know.

3 As I indicated in my testimony, the last time I
4 had spoken to Pennsylvania Power and Light personnel
5 working on fire protection they were still in the process
6 of negotiations with the NRC staff on several of these
7 fire protection issues.

8 Q You would agree with me that the NRC has not
9 shut down the Susquehanna Station due to concerns about
10 fire protection?

11 A I would agree with that.

12 Q If you could refer to page 10 of your testimony,
13 starting at the top of the page you discuss the fact that
14 in 1981 and 1982 PECO had meetings with the NRC staff on
15 issues relating to fire protection; is that correct?

16 A That's correct.

17 Q An in fact on page 7 on the same topic you
18 state that there were meetings in 1981 and 1982 and 1983
19 to clarify how the requirements were to be applied and
20 met at Limerick; is that correct?

21 A That's correct.

22 Q Will you agree with me that throughout the time
23 period that Limerick was meeting with the NRC on how to
24 comply with fire regulations Susquehanna was completing
25 construction and in fact was loading the fuel?

1 A For at least part of that period, yes.

2 Q Starting at a period in the middle of 1982?

3 A Yes.

4 Q And Limerick had discussions starting in 1981
5 and going through at least 1983, if not longer?

6 A That is correct.

7 Q If you could refer to page 12 of your testimony,
8 starting at line 8 you are discussing environmental
9 qualifications, and you state that the ASLB -- is that
10 the Atomic Safety Licensing Board?

11 A That's correct.

12 Q -- reviewed the Limerick EQ program methodology
13 and assessed its compliance with 10 C.F.R. 50.49, which
14 codified the EQ requirements in January 1983; is that
15 correct?

16 A That's correct.

17 Q So you are stating that the environmental
18 qualification requirements were codified by the NRC in
19 January of 1983?

20 A Yes.

21 Q Would you agree with me that this codification
22 of the environmental qualification requirements occurred
23 some six or seven months after Susquehanna reached fuel
24 load?

25 A Yes, it did.

1 Q To which NRC regulations was Susuehanna's EQ
2 program reviewed?

3 A Basically it was reviewed to several, again,
4 guidance documents. There was NUREG --

5 Q Is this on page 11 where you list some documents?

6 A Yes.

7 There were -- at the top of page 11 I list IE
8 Bulletin 7808, 7901, 7901B, and NUREG 0588 and NUREG 0588,
9 Rev. 1.

10 Those guidance documents provided some direction
11 to the industry from the NRC staff as to what types of
12 environmental qualification programs would be expected
13 from the plant licensees.

14 Because of the inconsistent performance of the
15 various licensees in meeting those guidance documents,
16 and because of the amount of time that it was taking the
17 various licensees for near-term operating license plants
18 to complete their programs, the NRC decided to codify
19 the requirements in 10 C.F.R. 50.49 in 1983. And when
20 those requirements were codified, they were applied
21 retroactively not only to plants yet to be licensed, but
22 also to plants that were already operating.

23 Q And when you say they were applied retro-
24 actively to the plants operating, how were they applied?

25 A It was applied such that in the rule, itself,

1 there was an implementation date by which all licensees
2 had to have their environmental qualification programs
3 complete, and any equipment that required replacing had
4 to be replaced by that date.

5 What was that date; do you recall?

6 A That date -- just a second.

7 (Witness perusing documents.)

8 It was originally in either late 1983 or early 1984,
9 but the Commission then amended the code to allow some
10 extra time. The final date was November 30, 1985.

11 Q Do you have an opinion as to why the date was
12 extended by the NRC?

13 A It was extended because many of the plants had
14 trouble, once they had identified certain pieces of
15 equipment that needed to be replaced -- they had difficulty
16 in finding replacement pieces of equipment that were
17 qualified to act in the environments in which they were
18 being placed. And because this was an industry-wide
19 concern, it really wasn't the fault of the licensees, but
20 a problem with the supply industry, the NRC allowed that
21 implementation date to slip.

22 Q So the NRC was sensitive to the effect of its
23 regulations on the industry, you would say?

24 A In this particular case, yes.

25 Q Now, when there is an NRC requirement, I take

1 it that the staff reviews compliance by a specific plant
2 with those requirements?

3 A That is correct.

4 Q And so the implementation by the utility of
5 NRC requirements must pass staff muster; is that correct?

6 A The staff is what I will call the first level
7 of review in the total licensing process, and the staff
8 must approve the various aspects of the individual plant
9 designs before the plant can proceed through the licensing
10 process.

11 MR. WERSAN: Your Honor, that's all I have.

12 Thank you, Mr. Sproat.

13 JUDGE MATUSCHAK: Is there any redirect?

14 MR. HALL: If Your Honor would permit a minute
15 with Mr. Sproat?

16 JUDGE MATUSCHAK: Yes. We will recess for a few
17 minutes.

18 (Recess.)

19 JUDGE MATUSCHAK: On the record.

20 MR. HALL: Your Honor, I have no redirect for Mr.
21 Sproat.

22 JUDGE MATUSCHAK: Very well. The witness is
23 excused.

24 (Witness excused.)

25 MR. HALL: Next we have Mr. Helwig. Mr. Helwig

1 has been previously sworn.

2 It is my understanding that the Staff will cross-
3 examine Mr. Helwig on all of his submissions, and that
4 the Consumer Advocate will cross-examine him only as to
5 his Statement 5B.

6 JUDGE MATUSCHAK: Very well.

7 MR. WERSAN: 5B?

8 MR. HALL: 5A?

9 MR. WERSAN: Just so it is clear, since Mr.
10 Helwig just submitted additional testimony this morning,
11 I have a few questions I can ask that are not related to
12 engineering restraints or those kinds of construction
13 issues. They are very limited, going to capital additions.
14 I'll do those, but everything else I will put off until
15 tomorrow.

16 Whereupon,

17 DAVID R. HELWIG

18 having previously been duly sworn, testified further as
19 follows:

20 DIRECT EXAMINATION

21 BY MR. HALL:

22 Q Mr. Helwig, do you have before you three
23 documents, which documents are entitled Rebuttal and Sur-
24 Surrebuttal Testimony of David R. Helwig, PECO Statements
25 Nos. 5A, 5B and 5C?

1 A Yes, I do.

2 Q Referring to PECO Statement Number 5A, Mr. Helwig
3 is that a 31-page document with several attached schedules?

4 A Yes, it is.

5 Q Does this testimony constitute your rebuttal
6 testimony to Consumer Advocate witnesses in this proceed-
7 ing?

8 A It, plus the correction we filed on February
9 28, 1986; yes. It was corrected. We filed a correction,
10 an errata on February 28th.

11 Q Do you have that errata with you?

12 A Yes, I do.

13 Q Would you give me a copy of that?

14 A (Document handed to Mr. Hall.)

15 MR. WERSAN: You are referring to the errata to
16 your schedules?

17 THE WITNESS: Yes.

18 MR. HALL: Your Honor, the errata was submitted
19 to you and other parties on February 28th as a written
20 document. I will obtain that and provide it for the record.
21 I don't have it at this time.

22 BY MR. HALL:

23 Q Mr. Helwig, referring to your PECO Statement
24 Number 5A, do you have any additional corrections to make
25 to that document at this time?

1 A I found a stray comma.

2 Q We don't need those.

3 Mr. Helwig, is your PECO Statement Number 5A true
4 and correct to the best of your knowledge and belief?

5 A Yes, it is.

6 Q Was it prepared under your direction and
7 supervision?

8 A It was prepared by me.

9 Q If I were to ask you the questions contained
10 therein would your answers be as stated therein today?

11 A Yes.

12 MR. HALL: Your Honor, I would ask that Mr. Helwig's
13 rebuttal testimony be identified as PECO Statement Number
14 5A for use in this proceeding.

15 JUDGE MATUSCHAK: Subject to any timely exceptions
16 or objections, the motion is granted.

17 (Whereupon, the document was
18 marked as PECO Statement No.
19 5A for identification.)

20 BY MR. HALL:

21 Q Mr. Helwig, you have also submitted sur-surre-
22 buttal testimony in this proceeding, have you not?

23 A Which one?

24 Q Each of those.

25 A Sur and Sur-Sur, yes. They are both Sur-Sur.

Q Do you have before you a document identified

1 as PECO Statement Number 5B?

2 A Yes.

3 Q Do you also have before you a document identified
4 as PECO Statement Number 5C?

5 A Yes.

6 Q Do these documents constitute your sur-surrebuttal
7 testimony in this proceeding?

8 A Yes, they do.

9 Q Were these documents prepared by you or under
10 your direct supervision?

11 A Yes, they were.

12 Q Is the data contained within these documents
13 true and correct to the best of your knowledge and belief?

14 A Yes.

15 MR. HALL: Your Honor, I would ask that there be
16 identified for use in this record as PECO Statement Number
17 5B the four-page document identified as Sur-Surrebuttal
18 Testimony of David R. Helwig with regard to Capital
19 Additions Projections for Limerick Unit No. 1; and that
20 there be identified as PECO Statement Number 5C for use
21 in this record a document of some nine pages identified
22 as Sur-Surrebuttal Testimony of David R. Helwig, Licensing
23 Requirements and Engineering Restraints.

24 JUDGE MATUSCHAK: Under the same conditions the
25 motion is granted.

1 (Whereupon, the documents were
2 marked as PECO Statements Nos.
3 5B and 5C for identification.)

4 BY MR. HALL:

5 Q Do you have any corrections to these documents
6 in addition to those previously provided?

7 A Yes, I do. PECO Statement 5C, on page 7 at
8 line 5, the line should read "implemented during outages
9 because." And line 11 should read "installed in the AER
10 would require that a large penetration be made."

11 Q Does that complete your corrections?

12 A Yes, it does.

13 MR. HALL: Your Honor, I would ask at this time
14 that there be moved into evidence PECO Statements Number
15 5A, 5B and 5C.

16 JUDGE MATUSCHAK: Under the same conditions
17 previously mentioned, the motion is granted.

18 (Whereupon, the documents marked
19 as PECO Statements Nos. 5A, 5B
20 and 5C were received in evidence.)

21 MR. HALL: Your Honor, Mr. Helwig is available for
22 cross-examination.

23 JUDGE MATUSCHAK: Staff?

24 MS. CHESTNUT: Thank you, Your Honor.

25 CROSS-EXAMINATION

BY MS. CHESTNUT:

Q Good afternoon, Mr. Helwig.

1 A Good afternoon.

2 Q Mr. Helwig, were you here for the cross-examina-
3 tion of Mr. Rosenthal?

4 A I was not.

5 MS. CHESTNUT: Thank you. I have no further
6 questions.

7 JUDGE MATUSCHAK: Consumer Advocate?

8 MR. WERSAN: Your Honor, I have a few questions
9 today, and the remainder I will reserve until tomorrow
10 for Mr. Helwig.

11 CROSS-EXAMINATION

12 BY MR. WERSAN:

13 Q If I could start off with PECO Statement Number
14 5A, Mr. Helwig, and refer you to page 40?

15 A Yes.

16 Q On page 40 starting at line 21 you refer to
17 high density spent fuel racks which have been installed
18 already at Limerick, and which have to be added at
19 Peach Bottom.

20 A That's correct.

21 Q Could you explain briefly the function of those
22 racks?

23 A Yes. The racks have -- the primary function
24 of the spent fuel racks is to store the spent fuel, which
25 is discharged from the reactor in its refueling outages.

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Q Okay.

A If I might continue for a moment, they have a secondary function which is as far as the early operational days of the plants is concerned is more important; they are also used in the handling of the new fuel assemblies as they are constituted at the site, and inserted before they are inserted into the core. So the completion, installation and operability of the racks and the fuel-handling equipment is required to support the initial loading of the core.

Q So if I understand that properly, you would load fuel in those racks --

A I bring it in from --

Q -- initially when the fuel arrives at the plant?

A Yes, bring it in from the track, and we make it into fuel assemblies. We put it in the racks; and then when we are ready to load the fuel in the core, when we get our license to load fuel in the core, we move it from those racks into the core.

Q Is that then only for the initial loading that you are referring to there?

A No, that is done for all refueling -- in every refueling outage. I have to keep remembering I'm talking to lawyers.

1 In every refueling outage approximately one-third
2 of the core is replaced with new fuel, so the same process
3 is followed at every outage. The new fuel that is being
4 brought in and constituted is first placed in the spent
5 fuel racks. So they are really functionally new and spent
6 fuel racks, if you will.

7 Q Would fuel ever be placed there temporarily
8 during reactor repair and then put back into the reactor?

9 A Yes. As a matter of fact, one of the design
10 bases for the capacity of the spent fuel pool and the
11 racks in the pool are that at all times one must have a
12 reserve margin to be able to fully discharge the core from
13 an operating reactor.

14 Q Does the NRC require the company to maintain
15 this storage?

16 A Yes.

17 Q How much storage capability does the NRC
18 require?

19 A The NRC requires that we have the ability to
20 discharge a full core. If --

21 Q Go ahead.

22 A If I might continue, the NRC requirement is
23 a functional requirement on one's ability to take the fuel
24 out of the reactor so that repairs or inspections may be
25 made. Of course, for the plant to continue in operation

4/1/80
1 there must be in addition to that minimum storage an
2 amount that spent fuel can be discharged and new fuel
3 brought in.

4 Q What would the NRC do if the company did not
5 have adequate spent fuel storage capability.

6 A That's a very timely issue, as a matter of
7 fact. I don't have with me all the particular regulatory
8 citations, but it has always been the industry's plan to
9 either ship their spent fuel out for government or
10 commercial reprocessing, and in the Carter Administration
11 there was an administrative decision made that reprocessing
12 would be prohibited. And at that time that created a
13 very different situation for the operating plants. With
14 no prospect of being able to reprocess fuel and limited
15 storage capacity on site, there was historically
16 typically storage capacity provided to store the spent
17 fuel for maybe two or three fuel cycles.

18 Once it became apparent that that was not going
19 to be forthcoming, it was the responsibility of the
20 utilities, the plant owners, to provide for additional
21 interim storage capacity.

22 Right now the government has under way a program
23 to provide eventually in the -- I'm not sure of the
24 precise timing right now, but it's constantly slipping,
25 to provide for utility use eventually temporary

1 away-from-reactor spent fuel storage, and eventually
2 from their high level waste repositories.

3 Q So what happens --

4 A In the interim it's ours.

5 Q And if you don't have adequate storage, what
6 happens?

7 A The unit would have to shut down.

8 Q And attached to your Statement 5A you have as
9 the last page a table listing Peach Bottom's capital
10 additions?

11 A Yes, sir, Schedule 4.

12 Q You show a line item for high density fuel
13 racks?

14 A Yes.

15 Q Is that the total expenditures at Peach Bottom
16 on this item through the end of 1985?

17 A It is not -- it is the total cost of post-
18 commercial capital additions on this subject for the
19 calendar years '75 through '85, exclusive of AFUDC.

20 MR. WERSAN: That's all I have for today. Thank
21 you, Your Honor.

22 JUDGE MATUSCHAK: Is there any redirect?

23 MR. HALL: If I could have just a minute, Your
24 Honor?

25 JUDGE MATUSCHAK: Yes.

(Recess.)

MR. HALL: Your Honor, just two questions.

REDIRECT EXAMINATION

BY MR. HALL:

Q Mr. Helwig, you had answered a question from Staff Counsel Chestnut earlier about your being present during the cross-examination of Mr. Rosenthal. Do you wish to correct that answer at this time?

A I was present for your cross-examination today. I for some reason was thinking the last time around when there was cross-examination of Mr. Rosenthal. I was sitting behind you.

MS. CHESTNUT: That's what I thought.

THE WITNESS: My apologies.

BY MR. HALL:

Q In essence, you are saying you were here today, but your answer referred to the prior cross-examination of Mr. Rosenthal?

A That is correct.

Q Mr. Helwig, does Limerick presently have installed high density storage fuel racks?

A Yes, we do. That is the statement that I made on page 40.

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

MS. CHESTNUT: I have a question, Your Honor.

RECROSS-EXAMINATION

1
2 BY MS.CHESTNUT:

3 Q Mr. Helwig, in light of your last answer, is
4 it still your opinion that Staff is proposing an in-service
5 date of April 1981 for Limerick?

6 A I must admit I have been totally confused as
7 to how the Staff thought April 1981 had anything to do
8 with this case or Limerick's operations. To the extent
9 that I had no idea where it was coming from or any basis
10 for it, I still disagree with its use, because it has
11 no basis in reality.

12 Q Well, Mr. Helwig, if I were to tell you that
13 Staff has never proposed that as an actual in-service date,
14 would you accept that?

15 A It wouldn't make any difference one way or the
16 other to me. I would not accept it no matter who asserted
17 it as a date that was achievable for Limerick to load fuel,
18 be licensed or be completed construction.

19 Q You had no other criticisms of Staff's testimony
20 in this case, did you?

21 A That I have articulated in my filings?

22 Q Yes.

23 A Would you clarify for me which are the Staff
24 witnesses?

25 Q Staff witnesses are Hall and Dougherty.

1 A And Rosenthal, I presume.

2 Q And Rosenthal, but you don't mention Mr.
3 Rosenthal.

4 A Yes. I have not put forth any criticisms in
5 my testimony.

6 Q Thank you.

7 MS. CHESTNUT: I have no further questions, Your
8 Honor.

9 MR. HALL: I have nothing, Your Honor.

10 JUDGE MATUSCHAK: The witness is excused.

11 (Witness excused.)

12 MR. HALL: Would Your Honor have any objection if
13 we were to take a break at this point?

14 JUDGE MATUSCHAK: We'll take a ten-minute recess.

15 (Recess.)

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1 JUDGE MATUSCHAK: When you're ready.

2 MR. HALL: If Your Honor please, we have Mr. Boyer,
3 who has been previously sworn.

4 Whereupon,

5 VINCENT S. BOYER

6 having previously been duly sworn, testified further as
7 follows:

8 DIRECT EXAMINATION

9 BY MR. HALL:

10 Q Mr. Boyer, do you have before you three documents
11 identified in their right hand corner as PECO Statement No.
12 1A, PECO Statement No. 1B and PECO Statement No. 1C?

13 A I do.

14 Q Is the first of these documents, that being
15 identified as PECO Statement No. 1A, your rebuttal testimony
16 for use in this proceeding?

17 A It is.

18 Q Is this a document of some 22 pages?

19 A Yes.

20 Q Mr. Boyer, if I were to ask you the questions
21 contained therein today, would your answers be as set forth
22 therein and would they be true and correct as of this time?

23 A Yes, they would be.

24 Q Moving to PECO Statements Nos. 1B and 1C, is
25 PECO Statement No. 1B a document of some four pages, and is

1 it identified as the sur-surrebuttal testimony of Vincent S.
2 Boyer?

3 A. It is.

4 Q. Is that document sur-surrebuttal testimony to
5 Staff witnesses in this proceeding?

6 A. Yes.

7 Q. Referring to PECO Statement No. 1C, is that
8 document a document of some ten pages, being identified on
9 its front cover as "Licensing Schedule, Construction
10 Scheduling, Project Costs"?

11 A. Yes, it is.

12 Q. And is that document your sur-surrebuttal
13 testimony to OCA witnesses?

14 A. Yes, it is.

15 Q. Mr. Boyer, if I were to ask you the questions
16 contained in PECO Statement No. 1B and PECO Statement No. 1C
17 today, would your answers be as set forth therein and would
18 they be true and correct to the best of your knowledge and
19 belief?

20 A. Yes.

21 MR. HALL: Your Honor, I would ask that PECO State-
22 ments Nos. 1A, 1B and 1C be identified as I have indicated
23 for use in this proceeding.

24 JUDGE MATUSCHAK: They are so marked.
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(Whereupon, the documents were marked PECO Statements Nos. 1A, 1B and 1C for identification.)

MR. HALL: And I would ask that these statements, that being PECO Statements Nos. 1A, 1B and 1C, be moved into the record.

JUDGE MATUSCHAK: The motion is granted, subject to timely exceptions or objections.

(Whereupon, the documents marked PECO Statements Nos. 1A, 1B and 1C were received in evidence.)

MR. HALL: Your Honor, Mr. Boyer is available for cross-examination.

JUDGE MATUSCHAK: Staff?

MR. DELANEY: I will defer to Consumer Advocate at this point.

JUDGE MATUSCHAK: Very well.

MR. WERSAN: Thank you.

CROSS-EXAMINATION

BY MR. WERSAN:

Q Good afternoon, Mr. Boyer.

As I am sure is clear by now, Mr. Boyer, there has been a number of discussions of when Limerick Unit No. 1 could have reached fuel load and also could have reached commercial operation, and there have been comparisons to the Susquehanna station, is that correct?

1 A. Yes.

2 Q. And you would agree with me that for purposes of
3 fuel load, the Office of Consumer Advocate has referenced
4 the fact that Susquehanna Unit 1 reached fuel load in July
5 of 1982, is that correct?

6 A. It has.

7 Q. Do you know when Susquehanna Unit 1 reached
8 commercial operation?

9 A. I am aware of the date, but I don't keep it in
10 my mind.

11 Q. Sure, I wouldn't expect you to. Would you
12 accept, subject to check, June 8, 1983?

13 JUDGE MATUSCHAK: What's that date?

14 MR. WERSAN: June 8, 1983.

15 THE WITNESS: Yes.

16 BY MR. WERSAN:

17 Q. And would you agree with me that the schedule
18 analysis prepared by Mr. O'Brien on behalf of the Office of
19 Consumer Advocate in this case develops a commercial
20 operation date for Limerick Unit 1 of November 20, 1983, is
21 that correct?

22 A. I will take your word for it. I remember seeing
23 a date, but again, I didn't keep that in my mind.

24 Q. So, you would agree with me, at least in terms
25 of the comparison between commercial operation date for

1 Susquehanna Unit 1 and the commercial operation date
2 developed by Mr. O'Brien, Limerick 1 is allowed an extra
3 approximately six months longer than Susquehanna 1 --

4 JUDGE MATUSCHAK Excuse me. November 20, what year
5 was that?

6 MR. WERSAN: 1983, Your Honor.

7 THE WITNESS: That is the time difference roughly
8 between those dates that you named.

9 BY MR. WERSAN:

10 Q Now, at page 12 of your rebuttal testimony
11 Statement No. 1A, at line 15 approximately, you state, "As
12 noted by OCA Witness O'Brien, no contemporaneous BWR plant
13 such as Limerick could have achieved fuel load any time
14 during 1981. Do you see that?

15 A Yes.

16 Q Do you know whether a contemporaneous PWR achieved
17 fuel load any time during 1981?

18 A No, I don't have that in my mind.

19 Q Suppose I showed you a copy of PECO Exhibit RJM-1,
20 which has schedules showing low power license issuance dates.

21 A I think I have that here.

22 Q You have that?

23 A Yes.

24 Q Do you see any plants on Schedule 1 to PECO
25 Exhibit RJM-1 which received a low power license or achieved

1 fuel load in effect in 1981?

2 A. Yes, there are some.

3 Q. Could you tell me what differences between
4 a PWR and a BWR would make for the difference between
5 whether or not one of them would reach fuel load in 1981?

6 A. I think a lot would have to do, when they put in
7 their docket, when their final safety analysis report was
8 docketed, and their progress towards completion of
9 construction.

10 Perhaps they were ready to get licensed just prior
11 to the Three Mile Island incident, so that they would have
12 been ready to be licensed when the problems associated with
13 that accident were on the way to resolution.

14 Q. I guess my question is, on page 12 you say, "No
15 contemporaneous BWR," as if there is a distinction between
16 a BWR and a PWR. I am asking you why you stated it as a
17 contemporaneous BWR on page 12 of your Statement 1A.

18 A. I guess we were looking at the family of boiling
19 water reactors and just pulled out that statement. I think
20 you are probably correct in that some PWRs received their
21 license ahead of us.

22 We didn't examine their detailed conditions, since
23 there are basic design differences between PWRs and BWRs
24 with respect to licensing activities, the equipment and
25 subsystems that are needed by NRC requirements to meet

1 safety requirements. Containment problems and the like are
2 entirely different.

3 Q When you say, for example, containment problems
4 and the like are entirely different, you mean that for
5 example BWRs have either Mark I, Mark II or Mark III
6 containments, and PWRs don't use that kind of pressure
7 suppression design?

8 A Right. BWRs use a pressure suppression type
9 containment, where the pressurized water reactors use a
10 dry containment. They have gone to an improved version of
11 that with some ice condensers in the dry containment to
12 assist in the condensation of the steam, but they are still
13 basically a dry containment.

14 Q In your opinion, is there a design difference
15 between PWRs and BWRs such that PWRs were more able to reach
16 fuel load in 1981 than BWRs?

17 A No. Without making a study, I'd say that a lot
18 of it had to do with the fact that there are more pressurized
19 water reactors than there are boiling water reactors, and
20 the way that they were coming along in the licensing stream.

21 You'd really have to make an analysis to go any
22 further than that.

23 Q So, on page 12 of your testimony, your sentence
24 that says, "No contemporaneous BWR plant such as Limerick
25 could have achieved fuel load at any time during 1981" might

1 be amended to state, "However, contemporaneous PWR plants
2 did so"?

3 A. Yes. I would note, however, since you brought up
4 this question, the resolution of the Mark II containment --
5 and I would have to go in and look at the specific dates --
6 could have affected some of the licensing of boiling water
7 reactors in this time frame.

8 But I haven't made a study specifically directed
9 towards this time frame, so I can't state specifically.

10 Q. But apart from the fact that you haven't done a
11 study, what you are suggesting is that the Mark II contain-
12 ment problem would have delayed or prevented --

13 A. Could have impacted, could have impacted licensing
14 dates in this time frame.

15 Q. Now, staying with the Mark II topic, on page 5
16 of your Statement No. 1A, starting at lines 45 to 46, you
17 state that, "Dr. Hanauer would require that GE have
18 impossible foresight in providing these load specifica-
19 tions" -- and here we're talking about Mark II load
20 specifications -- "since neither the AEC/NRC, the utilities,
21 the industry nor the scientific community became aware
22 until after the Limerick containment design was developed of
23 the significance of these hydrodynamic loads," is that
24 correct?

25 A. Yes.

1 Q. When you state "impossible foresight," I take it
2 that is your personal opinion about the degree of foresight
3 that would have been required on the part of GE?

4 A. Yes. It's my view, based on the knowledge of the
5 test programs that were run and the results of those test
6 programs, the test programs were run to confirm the
7 adequacy of the pressure suppression concept, to prove that
8 steam would be condensed, to determine the size of the
9 vents, the number of the vent pipes that would be
10 required, to determine the maximum pressure of the
11 containment, and to confirm that the pressure would be
12 reduced using the pressure suppression concept and that
13 therefore there were economies to be gained in the use of
14 this concept.

15 There were normal water related events which occurred
16 during the discharge of steam such as water hammer and some
17 pressure pulses. These in a power plant are a common
18 occurrence.

19 We use bargers in heating condensate storage tank
20 water to keep it from freezing. If you walk by a tank, you
21 will hear it burping and guggling and banging all the time.

22 Such events would not have been of any great moment
23 in these early tests, since they would undoubtedly be
24 expected to occur.

25 There was no damage to the structures of the model

1 systems or the test systems, so that there would have been
2 no reason for them to look further into the occurrences.

3 Q Let me ask you this: would you agree with me
4 that there are other parties who believe that the foresight
5 required on the part of GE would not have been impossible?

6 A No, I don't necessarily believe that any
7 technically qualified person or group of persons -- you
8 will probably find some individuals, and on any subject
9 you will find individuals who will take one extreme
10 position or another.

11 But if you look at the vast majority of the
12 technical community, I am sure it would show that the
13 early tests of GE were responsible and well conducted tests.

14 Q Are you familiar with the Zimmer nuclear power
15 station?

16 A Yes.

17 Q Are you aware that the utilities which own the
18 Zimmer nuclear power station have filed a lawsuit against
19 General Electric and also against the architect of that
20 plant, Sergeant and Lundy?

21 A Yes.

22 Q I take it you believe those utilities are
23 unreasonable or not technically qualified?

24 A I haven't examined their lawsuit. I know that
25 the Zimmer people, the Cleveland Electric people were part

1 of the Mark II containment owners' group which worked with
2 General Electric in developing the details regarding the
3 chugging, air vent clearing, et cetera.

4 In fact, one of their members was in charge of a
5 subgroup of the Mark II owners' group for a period of time
6 and did a good job. At that time --

7 Q So, you think that the Zimmer owners are
8 technically qualified --

9 A Just let me finish. At that time, there was no
10 expression by them in our meetings concerned with
11 inadequate test program by General Electric in the early days.

12 Q You state you haven't examined the lawsuit. Do
13 you know how much the Zimmer owners are suing General
14 Electric and Sergeant and Lundy for?

15 A No, I don't.

16 Q Your position with Philadelphia Electric is
17 vice-president for nuclear, isn't it?

18 A Senior vice-president for nuclear power. Before
19 that I was in charge of the engineering and research
20 department under which design and construction of our
21 facilities occurs.

22 Q So, you are responsible for being aware of all
23 operations and all activities going on relating to nuclear
24 power both for Philadelphia Electric and I presume around
25 the country, is that correct?

1 A. Yes, I am aware generally of pretty much that
2 goes about, but I don't get down to the minutiae of how
3 much somebody is suing else.

4 Q. But have you gone into the details of why the
5 owners of the Zimmer station feel that they have a case to
6 bring against GE?

7 A. I have read excerpts from their brief, I guess
8 you would say, of Cleveland Electric.

9 Q. But I take it you have not recommended to
10 Philadelphia Electric Company that it delve deeper into this
11 lawsuit or in fact pursue a lawsuit on its own behalf?

12 A. General Electric participated in the cost sharing
13 of the Mark II owners' program, and in my view, they paid
14 their share, they paid their fair share.

15 Q. Let me ask you this: are you aware that the
16 owners of the Washington Public Power Supply System -- I
17 think that's the right title -- have also filed a lawsuit
18 against General Electric and also against their architect
19 engineer for Washington Power Nuclear Unit 2, and the
20 architect engineer was Burns and Roe?

21 A. No, I don't think I was aware of that.

22 Q. So, you wouldn't be aware of the details or the
23 basis why Washington Public Power has brought a lawsuit
24 against GE?

25 A. No.

1 Q Don't you think it's incumbent upon you, Mr.
2 Boyer, to look into these details, considering the enormity
3 of the costs that are involved?

4 A I probably will in due time, when I am not
5 preparing for hearings like this, and get a chance. I
6 don't know -- when did they bring that case?

7 Q How about if I show you a document entitled, "In
8 the United States District Court for the Eastern District of
9 Washington at Spokane, Washington Public Power System versus
10 General Electric Company and Burns and Roe," and as I see it,
11 it is dated January 28, 1985.

12 A Well, they have kept it well to themselves, then,
13 because I wasn't aware of it and haven't seen it before.

14 Q Are you familiar with the nuclear power plant
15 that is involved in the Washington Public Power System
16 lawsuit, WNP-2?

17 A WNP? No. Is that the production reactor of the
18 plant? I know that WPPSS, Washington Public Power Service,
19 had several plants out there, and there's one on the
20 Hanford Reservation which was the nuclear production reactors
21 which became a power producer. I don't know which one you
22 are referring to.

23 Q Let me show it to you, since I assume you are
24 familiar with the nuclear power plants around the country.
25 I refer you to page 3 of the complaint, in the introduction,

1 paragraph 7.

2 (Witness perusing document.)

3 A. Yes, that's the one on the Hanford reservation
4 which was converted to -- it's not a boiling water reactor,
5 is it?

6 MR. HELWIG: This is Hanford 2.

7 THE WITNESS: Apparently it's a suit against GE --
8 (Witness perusing document.)

9 THE WITNESS: Well, on pressure suppression contain-
10 ment, okay. So, that must be a similar case, but that
11 hasn't been available for public distribution.

12 BY MR. WERSAN:

13 Q. I take it you don't know whether or not a com-
14 plaint filed in a United States District Court is a public
15 document?

16 A. Well, we haven't sought, I guess, to find it.
17 All I can say is, to the best of my knowledge, I wasn't
18 aware of it. I may have been and forgotten it.

19 Q. With respect to the nuclear plant involved in
20 the Washington Public Power System complaint, are you
21 familiar with whether or not that nuclear plant went into
22 commercial operation?

23 A. No, I am not.

24 Q. Do you know how big it is?

25 A. I need to refresh my mind on the whole statistics

1 of it. I probably have some knowledge of it, but it's
2 not clear.

3 Q. Has Philadelphia Electric in any way looked into
4 the possibility of developing a claim against GE or Bechtel
5 with respect to the Mark II containment?

6 A. Yes, our people have.

7 Q. When was that review initiated?

8 A. I don't know, a year or so ago.

9 Q. Has that review been completed?

10 A. No.

11 Q. Could you tell me the status of that review?

12 A. Indefinite, right at the moment. It hasn't been
13 determined.

14 Q. Are you involved in that review at all?

15 A. I will be, yes.

16 Q. What elements or what items do you consider
17 relevant to a review such as this?

18 A. I don't believe that is pertinent here.

19 MR. HALL: Excuse me. Mr. Boyer, are you responsi-
20 ble for this review, or would that be done by some other
21 department of the company?

22 THE WITNESS: It's in the hands of our legal
23 department, so we really haven't been involved other than
24 furnishing them information.

25 MR. HALL: Mr. Wersan, we can get you a report on

1 that, but this witness obviously cannot address the topic
2 in detail.

3 BY MR. WERSAN:

4 Q Let me ask this, Mr. Boyer: you indicated you
5 would furnish technical information. Would you be
6 furnishing to your legal department your opinions about the
7 history of the Mark II reactor and whether or not GE
8 proceeded with proper foresight and caution?

9 A We have had some discussions along that line.

10 Q And have you given to your legal department the
11 same information that you provided in your testimony to the
12 Commission here?

13 A Yes.

14 Q And have you presented them with the same
15 opinions and conclusions?

16 A I have presented them with my opinions, yes.

17 Q And those opinions were the same as those that
18 you have expressed in your testimony here?

19 A Yes.

20 Q Now, attached to your sur-surrebuttal testimony,
21 Statement No. 1C, is a portion of your direct testimony from
22 the Limerick investigation at Docket No. I-80100341, is that
23 correct?

24 A Yes.

25 Q And if I could refer you to numbered page 9 of

1 that schedule?

2 A. Right.

3 Q. And the last paragraph, you discuss a meeting
4 of January, 1981 between the Board of Directors of PECO and
5 of Bechtel in San Francisco, and of General Electric in
6 San Jose.

7 A. Yes.

8 Q. And you state that a full day's program was
9 presented to the Board by the responsible personnel of
10 Bechtel, Philadelphia Electric and General Electric, is that
11 correct?

12 A. Yes.

13 Q. At this time, Mr. Boyer, I would like to show you
14 a document that has been admitted into the record as OCA
15 Exhibit No. 85.

16 This exhibit was made up of a document submitted by
17 the company in Interrogatory UUC/UP-2-22, and as I under-
18 stand it, it is entitled, "Limerick's Briefing Book," dated
19 January 29, 1981.

20 Are you familiar with this document, Mr. Boyer?

21 (Witness perusing document.)

22 A. Yes.

23 Q. Were you involved in the meetings in California
24 in January of 1981?

25 A. Yes.

1 Q Was this one of the documents that was presented
2 at that meeting?

3 A Yes.

4 Q If I could refer you to page 13 of that
5 document entitled, "Limerick Cost History" -- do you have
6 that?

7 A Yes.

8 Q Am I correct that this Limerick cost history is
9 discussing the increases in the cost of Limerick in the
10 years since construction was begun?

11 A From the time the construction permit or the
12 first forecast was made, yes.

13 Q And am I correct that there are a series of
14 line items in that exhibit discussing the different causes
15 for the increase?

16 A Yes.

17 Q Would you agree that there is a line item that
18 says, "Overheads associated with longer schedule, \$275
19 million"?

20 A Yes.

21 Q And there is one line item, "Escalation due to
22 longer schedule, \$402 million"?

23 A Yes.

24 Q And then the final item is, "AFUDC due to
25 schedule cost interest rate changes, \$1,059,000,000"?

1 A. Yes. There's also one that says, "Plant design
2 or scope changes, \$233 million."

3 Q. Yes, and that \$233 million is out of a total of
4 \$2,118,000,000?

5 A. Yes, because AFUDC is a large part.

6 Q. And wouldn't you agree with me that in the last
7 paragraph before the footnote on that page, it states that,
8 "The areas of escalation in AFUDC have shown the greatest
9 increases due to the prolonged construction period. These
10 are responsible for almost 70 percent of the increase."

11 A. Yes.

12 Q. And then the page following that, you show a
13 graphic of what was discussed on page 13, is that correct?

14 A. That is correct.

15 Q. And then starting on page 14, you give a summary
16 of cost and service date history for Limerick, is that
17 correct?

18 A. Yes.

19 Q. And if we go down the left hand column marked
20 "Date" to October, 1974, we see an extension of the service
21 date and in the far right hand column there's a comment,
22 "Rescheduled due to financial reasons," is that correct?

23 A. October, 1974, yes.

24 Q. And then if we go down to the next to the last
25 line item on page 14, dated May, 1978, the comment,

1 "Rescheduled due to reduced load forecast," is that
2 correct?

3 A. Well, that was --

4 Q. That's what it states, doesn't it, Mr. Boyer?

5 A. That's what it states, yes, that's what it states.

6 Q. And if we turn the page to page 15, the last
7 line shows May, 1976, when there was also a delay in 1976.
8 It states, "Construction expenditures were further reduced
9 as load growth estimates were reduced," is that correct?

10 A. Yes. You must appreciate, this may not give
11 every detail.

12 Q. I know, but this is what was presented to the
13 Board, is that correct?

14 A. Yes. And you must realize that the Board is
15 pretty well familiar about our financial conditions, so
16 you wouldn't have to remind them that financial problems
17 currently would affect things.

18 Q. But you would agree with me that when you gave
19 a comment on the 1974 delay, it said, "Financial reasons,"
20 and the 1976 and 1978 delays stated, "Load forecasts," is
21 that correct?

22 A. That's what it says, but you also notice that
23 there's six years' difference back to 1974, and you may
24 want to refresh their memory. In recent things, their
25 memory would be current.

1 Q Okay. And if we turn to page 16 of OCA Exhibit
2 No. 85, again we have May, 1978, and a line item that
3 states, "Construction expenditures were further reduced as
4 load growth estimates were reduced," is that correct?

5 A That's what it says.

6 Q And then for December, 1980, it says, "The
7 increase in the estimate is due mainly to delays in the
8 service dates of the unit," is that correct?

9 A Yes.

10 Q Mr. Boyer, I would like to discuss with you now
11 the subject of water at the Limerick station. Am I correct
12 that Philadelphia Electric Company has filed with the
13 Pennsylvania Public Utility Commission on March 7, 1986
14 copies of an agreement among Philadelphia Electric Company,
15 the Borough of Tamaqua, and the Tamaqua Borough Authority,
16 is that correct?

17 A Yes.

18 Q Does that agreement provide that a certain amount
19 of water will be sold to Philadelphia Electric Company by
20 the borough and by the borough authority for use at the
21 Limerick generating station?

22 A Yes, It states that they have excess space in
23 their reservoirs which can furnish us approximately 1 billion
24 gallons of water during the year 1986.

25 And even under drought conditions similar to that of

1 1985, the furnishing to us of that amount of water would not
2 impact their capabilities to supply their customers.

3 Q What is the maximum amount of water that can be
4 provided to Limerick through this agreement on a daily basis?

5 A 18 million gallons a day.

6 Q And at 18 million gallons a day, what operating
7 level can Limerick run at?

8 A Full power.

9 Q And how long will 1 billion gallons last?

10 A 57 days.

11 Q And are there limitations in this agreement as
12 to whether or not the borough can reduce the amount of
13 water that Limerick can use from their reservoirs?

14 A Yes. They can have the right to terminate the
15 agreement if DRBC imposes water restrictions or if there is
16 any potential disturbance to the earth embankment of the dam.

17 Q And how much is Philadelphia Electric going to
18 pay the borough for this water?

19 A Nine cents a thousand gallons. So, on a
20 billion gallons, it would be \$90,000. Take my word for it,
21 that's correct.

22 Q Does agreement have to be approved by the
23 Delaware River Basin Commission?

24 A No.

25 Q Is the company still pursuing other water

1 supplies?

2 A. Just to supplement, our application to the
3 Delaware River Basin Commission has to be approved by them.
4 It's a joint application between ourselves, Tamaqua and
5 Reading Anthracite for use of their Beechwood pool water
6 which supplements the water from Tamaqua.

7 Now, your last question again?

8 A. Let me just clarify in my mind, this agreement
9 between Philadelphia Electric and the borough is part of a
10 larger application to the Delaware River Basin Commission
11 that also includes the Beechwood pit water?

12 A. That is the agreement between us and Tamaqua for
13 resolving the details associated with the renting of the
14 space in their reservoir. That is the financial arrangement
15 with us.

16 The Delaware River Basin Commission has to approve
17 the discharge of the water from Tamaqua Reservoir into the
18 Schuylkill River, and its flowing down the Schuylkill River
19 so that we may withdraw it at Limerick.

20 Q. Can the DRBC modify the amount of water that can
21 be taken out of the borough's reservoir?

22 A. They will certainly be interested in the
23 confirmation, in looking into and confirming that the
24 engineering studies that have been made are reasonable and
25 that Tamaqua would not be unable to meet their own needs in

1 supplying us that quantity of water.

2 They will also be interested in the fact that we have
3 contacted the Department of Environmental Resources relative
4 to dam stability and so forth and the tests that we are
5 conducting to confirm that there will be no adverse impact
6 on the dam.

7 So, they will look at the environmental aspects of
8 the situation and the water supply aspects of the situation
9 to Tamaqua as well as other concerns associated with
10 discharge into the stream.

11 Q And apart from the water from the borough's
12 reservoir, what other water supply sources have you applied
13 for at the DRBC?

14 A Our application to the DRBC also includes the
15 discharge of water from the Beechwood pool into the west
16 branch of the Schuylkill River, in a quantity representing
17 30 percent of the total amount discharged from Tamaqua and
18 Beechwood.

19 This ratio results in water quality which meets
20 water quality standards in the main stem of the Schuylkill.

21 Q As presented by PECO to the DRBC?

22 A As presented by us to them.

23 Q And that still has to be reviewed by the DRBC?

24 A There is a hearing scheduled for April 15. We
25 have also applied previously in December for use of the

1 allocation of Titus and Cromby generating stations, and
2 for substitution of dissolved oxygen measures in lieu of
3 temperature in our permit restrictions for withdrawals for
4 water at Limerick.

5 These two items were approved last year and were
6 used last year.

7 Q Now, Mr. Boyer, when you first were cross-
8 examined on your direct testimony, you discussed an outage
9 at the Limerick station that would have to be scheduled
10 some time this spring, do you recall that?

11 A Yes.

12 Q Could you tell me when that outage is currently
13 scheduled?

14 A We are currently thinking of it between April 15
15 and May 1.

16 Q Is there an end date by which that outage must
17 begin?

18 A No. Well, we can go up until about May, let me
19 say the 20th. It's within a week of that.

20 Q Does May 26th ring a bell?

21 A We can go somewhere near the end of May before
22 we have to shut down by NRC to conduct some tests, but we
23 certainly will shut down by the second week in May, in my
24 opinion.

25 Q Would you agree with me that the NRC has issued

1 an amendment to the facility operating license of the
2 Limerick station allowing you a temporary extension of
3 12 weeks in surveillance testing to allow the testing to be
4 performed during a maintenance and surveillance testing
5 outage, which will begin on or before May 26, 1986?

6 A. Right. Okay, that's the date, then.

7 Q. Now, how long is that outage scheduled for,
8 Mr. Boyer?

9 A. We haven't determined the exact date. We are
10 looking at a five to six week outage.

11 Q. Do you anticipate that the length of that outage
12 will be scheduled in the manner PECO normally schedules its
13 nuclear plant outages?

14 A. It will be scheduled to be the shortest outage
15 that we are capable of having and getting the required work
16 done, which is the usual way we schedule outages. There is
17 an outage planning group which plans and schedules the out-
18 ages and the work to be done, and to implement the program
19 in the shortest possible time.

20 Q. Mr. Boyer, I would like to show you a copy of the
21 direct testimony of John J. Carroll, Docket No. M-850010, et
22 cetera, involving Philadelphia Electric's ECR No. 9, and
23 that was submitted into the record as PECO Statement No. 2.

24 I am going to be having you refer to page 11 and 12 of that
25 testimony. Maybe you want to take a chance to review that.
(Witness perusing document.)

1 A. Okay.

2 Q. Would you agree with me that in Mr. Carroll's
3 testimony he discusses the manner in which Philadelphia
4 Electric schedules the length of its outages at its
5 nuclear stations?

6 A. That might be a broad statement.

7 Q. Let me ask you this: would you agree with me
8 that Mr. Carroll discusses the fact that when Philadelphia
9 Electric schedules an outage at a nuclear power plant, it
10 schedules it on an optimistic schedule in which it
11 schedules the work to be performed but does not make allow-
12 ances for problems that may be encountered doing that
13 work?

14 A. Yes.

15 Q. So, in effect, the schedule developed, as dis-
16 cussed by Mr. Carroll, assumes that problems will not be
17 found and outage extensions will not be required to make
18 repairs or corrections to problems that are found?

19 A. Well, reasonable judgment is used in the deter-
20 mination of the schedule. If we expect to find some prob-
21 lems, we will put some time in there, but we will estimate
22 that relatively on an optimistic basis.

23 Now, I can see what you're getting at, but let me
24 make this comment. This shutdown at Limerick is mainly to
25 do surveillance testing. Limerick is a new plant; it has

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1 gone through the startup test program. There have been
2 repairs to things, to the few minors things that were
3 uncovered during the startup test program.

4 To my knowledge, at this moment there is no major
5 maintenance item which is controlling in this inspection.
6 The controlling item is the length of time to do the 500-
7 and-some surveillance tests which we must do, which means
8 testing of instrumentation to verify that the trip points
9 are right, to calibrate instruments and whatnot.

10 We don't expect to have any insurmountable problems
11 arise in that work, so that I expect the schedule to be
12 met.

13 Q Let me ask you this: would you agree with me
14 that Mr. Carroll said in his testimony at page 11, "Stated
15 another way, absent a known problem, the maintenance divi-
16 sion assigns only the time required for the inspection it-
17 self, not potential but unknown repair time for problems
18 that might be found by the inspection. For these reasons
19 the schedule ultimately prepared is 'optimum' for the items
20 on the work list that constitute the critical path of the
21 outage"?

22 A Yes, and that applies to equipment which is --
23 where preventive maintenance is being done, where equipment
24 is being taken apart to examine things to make sure that
25 there is nothing occurring that would indicate future

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problems and so that you can do planning for replacement parts and whatnot in the future.

Q. But you have just stated that you don't anticipate to find any problems during this inspection.

A. We don't anticipate doing that type -- any great amount of that type of work in this period.

Q. On the other hand, if it turned out that there was a problem, or problems, discovered during the inspections, your schedule would be short by the amount of time required to make those repairs if they were on the critical path?

A. I would say no, not for this outage, because we aren't going to be doing that type of work. What he is referring to is when you take a turbine apart. The main turbine is a big piece of equipment, and if you find seals rubbed in the turbine, or something like that, you have to replace them, you have to get the material and replace them. If you find some blades that have been damaged, you have to shine them up, or if you find cracks, you have to take care of replacing them. That adds to the work.

We will not be doing any of that work at this outage. We are too close to when we started. This outage would have been conducted probably before we went into commercial operation if it hadn't been for the concern about water availability.

1 We are optimizing our schedule now to take advantage
2 of the water during this winter period. In May is when we
3 might run up against a shortage, a time when we could not
4 withdraw, because the fish people want higher oxygen
5 levels in the spring for the spawning season; and very
6 likely in the spring, if we're going to get caught at all,
7 we're going to get caught on a limit on our permit.

8 So we are planning this shutdown to go until we
9 hit a limit on our permit, or until we hit May 10 or some-
10 thing like that, and then shut down.

11 So the likelihood -- we'll be shut down during some
12 of the otherwise water limiting time. That's what I call
13 good planning.

14 Q. You have been with Philadelphia Electric and
15 its nuclear division for a long time, Mr. Boyer; is that
16 correct?

17 A. Yes.

18 Q. In your experience, and in your knowledge, is
19 it a frequent occurrence that planned outages at Philadel-
20 phia Electric nuclear stations go longer than originally
21 scheduled?

22 A. Yes, where problems like stress corrosion
23 cracking have occurred after many years, yes, things of
24 that nature. In the early days you don't run into those
25 problems.

1 Q Would you agree with me that, for example, at
2 the Peach Bottom station, that almost every, if not all,
3 of the refueling outages have extended longer than the
4 schedule provided for?

5 A They might have, because we have had to do a
6 lot -- in addition to the stress corrosion cracking that
7 we have had there after ten years, we have also had to do
8 some of the retrofitting work required by NRC for fire
9 protection, equipment qualification and whatnot, which is
10 all done at Limerick.

11 Q Are you familiar with the Salem Unit 2 nuclear
12 plant, Mr. Boyer?

13 A Yes.

14 Q Would you agree with me that in Philadelphia
15 Electric's last base rate case it requested the Commission
16 to put Salem Unit 2 into rates?

17 A Yes.

18 Q And that on or about the last day of the record
19 in that case, the generator failed at Salem Unit 2?

20 A Yes.

21 Q And that subsequently the utility made repre-
22 sentations to the Commission about when the generator
23 would be repaired at Salem Unit 2?

24 A It probably did.

25 Q Do you recall whether or not the company

1 represented that Salem Unit 2 would be back on line on
2 April 1, 1985?

3 A. No. But I would guess that the time was ex-
4 ceeded because the replacement of a generator is a large
5 job. It is a very unusual job. It is not done but one in
6 50 years in a power plant, or something like that. That
7 is not expected.

8 Q. We hope.

9 A. That's right. Historically, it has not been.
10 So my hopes are based on past experience. I don't know
11 what yours are based on.

12 Q. Salem Unit 1 and 2, Mr. Boyer, where both
13 generators have been replaced.

14 A. Well, now, what was Salem 2's capacity factor
15 last year? Very high.

16 Q. If you're asking me, it is approximately 55
17 percent, I believe.

18 A. Well, it's 95 percent.

19 Q. I think we're arguing over in service and total
20 annual capacity here, Mr. Boyer.

21 A. Which shows we're coming out of the woods and are
22 going to have some good periods of good service by these
23 plants.

24 Q. Mr. Boyer, I hope so for my clients in this case.
25 But my question to you is: when the company presented its

1 case to the Commission in the Salem base rate case, it
2 made representations, did it not, about when that plant
3 would be back on line and actions the Commission should
4 take based upon those representations?

5 A. It probably did. If you are comparing that to
6 this outage, you are comparing apples and nuts; you aren't
7 comparing the two things, the same two things. I mean,
8 they are outages, yes; that is about where the similarity
9 ends.

10 Q. Well, there are also representations by the
11 company as to how long outages last; isn't that also a
12 similarity, Mr. Boyer?

13 MR. HALL: Your Honor, I think at this point we are
14 getting very argumentative here. The witness has indicated
15 that he doesn't know the data that is being requested.

16 MR. WERSAN: That's all I have, Your Honor.

17 Thank you, Mr. Boyer; Mr. Hall.

18 JUDGE MATUSCHAK: Does Staff have any?

19 MR. DELANEY: Your Honor, I would like to defer the
20 cross until tomorrow. Mr. Boyer will testify tomorrow.

21 JUDGE MATUSCHAK: Do you have any redirect now?

22 MR. HALL: Your Honor, I would prefer to defer my
23 redirect until tomorrow also.

24 JUDGE MATUSCHAK: Very well.

25 (Witness temporarily excused.)

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1 MR. HALL: If Your Honor please, there is one other
2 thing that I would like to raise at this time before we
3 break.

4 Your Honor has ordered, in the order in which you
5 ruled with regard to the Trial Staff's motion in limine,
6 that certain portions of the record of the first Limerick
7 investigation should be included in this record for pur-
8 poses of evaluation of the issue of the justness and the
9 reasonableness of the 1976 and 1978 delays.

10 What concerns me and what interests me is a process
11 by which the parties will designate what parts of that
12 record are in fact considered to be included in this
13 record, or if Your Honor intends to include the entire
14 record of that prior proceeding, simply so that we can
15 know, both as we go to appeal and as we go to briefing in
16 this case, what this record here consists of relative to
17 those decisions.

18 I believe the company would be amenable either to
19 designation by the parties, or if Your Honor simply wishes
20 to incorporate the entire record so that all of that would
21 be included in this particular case.

22 MR. DELANEY: Your Honor, may I say something? We
23 are preparing an exhibit which would include all of the
24 sections that we feel are appropriate. I was going to
25 discuss it with Mr. Hall after the hearing today.

1 We would not oppose if you also want to designate
2 to put things into the record from the prior investigation.

3 Our interpretation of your order was to include the
4 things that were relied on in the prior ALJ and Commission
5 decision, and we tried to restrict the things that we have
6 designated to cross-examination and direct statements that
7 we thought were referenced in the decision.

8 We would not oppose a reasonable designation by the
9 company. And we were going to move that exhibit in prior
10 to the end of the case.

11 MR. HALL: Your Honor, we would be willing to pre-
12 pare a similar exhibit. I think the parties should be
13 given an opportunity to review each others exhibits and
14 designate additional material as they think is appropriate.

15 JUDGE MATUSCHAK: We recognize that there will be
16 matters on which there may be some difference of opinion
17 as to whether it relates solely to prudence and whether it
18 relates solely to quantification, or whether it could re-
19 late partly to prudence and also partly to quantification.
20 We recognize there may be some difficulty.

21 Where the matter relates solely to prudence and the
22 Commission has considered that matter in the investigation
23 proceeding, then, of course, we are not going to consider
24 that. You can expect that to have been stricken.

25 Where there is a difference of opinion as to whether

1 the matter relates to prudence and quantification, it
2 would be relevant for both, then we would rather let that
3 be in the record and let the parties discuss that in their
4 briefs and let the Commission have that matter available
5 for determination.

6 If there is any doubt as to whether the matter is
7 relevant or not, we indicated before that we would resolve
8 the matter in favor of admissibility rather than exclusion.

9 MR. HALL: Would Your Honor care to establish a
10 time period for the filing of these exhibits of materials
11 that would be taken from the first Limerick record and
12 incorporated in this record, or would you prefer that the
13 parties discuss that and get back to you?

14 JUDGE MATUSCHAK: Suppose the parties discuss it
15 and see if they can come up with some common ground, and
16 if they can't, they may file additional -- advise us of
17 what grounds they agree on, what testimony they agree on
18 should be excluded, and then if there is some difference
19 of opinion on other grounds, they can so state.

20 MR. HALL: If Your Honor please, I am not speaking
21 of exclusion of testimony. I am speaking of incorporating
22 parts of the first Limerick investigation record.

23 JUDGE MATUSCHAK: Oh; I see.

24 MR. HALL: I am actually moving things in, not out.
25 Your Honor has ordered that some part of that first

1 investigation record -- now, it seems to me that there
2 are two ways we can do; we can try and identify items
3 and put them in, or we can simply put it all in.

4 JUDGE MATUSCHAK: That matter has been raised be-
5 fore us before. Frankly, we haven't considered it except
6 in a general way.

7 In our first order we did indicate that we would
8 incorporate that portion of the record that pertained to
9 imprudency.

10 MR. WERSAN: Your Honor, are you incorporating it
11 in for purposes of appeal and also for purposes of briefing
12 the decision?

13 JUDGE MATUSCHAK: No. We had to incorporate part
14 of that record into this proceeding if we are going to be
15 consistent and we determine by the finding of the Commission
16 that there was imprudency.

17 MR. WERSAN: My question, Your Honor, is the
18 purposes of incorporation of that record. You want to
19 incorporate that record so it is in this case, but you are
20 not expecting the parties to brief on the issue of
21 prudency, because that has already been resolved.

22 JUDGE MATUSCHAK: Oh, no, absolutely not.

23 MR. WERSAN: So it is only for purposes of ultimate
24 appeal that it is in the record of this case.

25 JUDGE MATUSCHAK: That's right. That's right. We

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1 are not presenting that record here for the purpose of
2 determining whether there was prudence or not. As far as
3 we are concerned, that matter has been established by the
4 Commission.

5 But in order to have that finding incorporated in
6 this proceeding, we have to incorporate that part of the
7 record in that proceeding which determined imprudence.

8 In other words, we indicated that we weren't going
9 to relitigate it here, and we don't intend that it would
10 be presented in this case for relitigation on appeal.

11 MR. HALL: If Your Honor please, why don't the
12 parties talk about this perhaps tomorrow, and we can make
13 a proposal to you as to how best to do this.

14 JUDGE MATUSCHAK: Very well. You may bring it up
15 tomorrow and we will discuss it. See what methodology you
16 can agree on as to what portion of that record we would
17 consider.

18 Our incorporation of that record was only for the
19 purpose of establishing the finding of the Commission that
20 the '76 and '78 delay decisions were imprudent. We do not
21 intend to incorporate that record in this proceeding for
22 further appeal as to the prudence.

23 We feel if there is any review of that determination,
24 that should have been done in that case, not here.

25 Is there anything further today?

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MR. HALL: No, Your Honor.

JUDGE MATUSCHAK: Very well. We will recess --
what time tomorrow, 9:30?

MR. HALL: Yes, please.

JUDGE MATUSCHAK: We will adjourn until 9:30
tomorrow.

(Whereupon, at 4:45 p.m., the hearing was adjourned,
to be reconvened at 9:30 a.m. on Friday, March 14, 1986,
in Harrisburg, Pennsylvania.)

C E R T I F I C A T E

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I hereby certify, as the stenographic reporter,
that the foregoing proceedings were taken stenographically
by me, and thereafter reduced to typewriting by me or
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