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E X H I B I T S

<u>NUMBER</u>	<u>FOR IDENTIFICATION</u>	<u>IN EVIDENCE</u>
<u>Staff Statement No.</u>		
41	DPD-2 (Dougherty)	5060 5060
<u>Staff Exhibit No.</u>		
61	(Documents from I-80100341)	5196 5198
42	(Response to Data Request from Mr. Gallagher)	5197 5198
<u>UCC/UP Exhibit No.</u>		
10A	(PAIEUG et al response to transcript request of 2-19-86)	5109 5109
<u>OCA Statement No.</u>		
1B	(James J. O'Brien)	5121 5128
<u>OCA Exhibit No.</u>		
89	(DR-OCA-6-1, 7-2 & 4-8)	5098 5120
<u>PECo Statement No.</u>		
33	(Coughlin)	5078 5078
32A	(Coughlin)	5078 5078
4A	(Clarey)	5078 5078
4B	(Clarey)	5078 5078
4C	(Clarey)	5078 5078
8A	(Love & Kononetz)	5176 5176
8B	(Love & Kononetz)	5176 5176
8C	(Love & Kononetz)	5176 5176
<u>PECo Exhibit No.</u>		
WSB-1	(Boyer)	5032 5032
JJC-1/JRC-1	(Clarey & Coughlin)	5078 5078
JJC-2/JRC-2	(Clarey & Coughlin)	5078 5078
JJC-2	(Clarey)	5078 5078
JJC-2	(Coughlin)	5078 5078

P R O C E E D I N G S

1
2 ADMINISTRATIVE LAW JUDGE JOSEPH MATUSCHAK: This is
3 the time and place set for the further hearing in the matter
4 of the Pennsylvania Public Utility Commission versus the
5 Philadelphia Electric Company at R-850152.

6 Are counsel ready to proceed?

7 MR. HALL: Yes, Your Honor.

8 JUDGE MATUSCHAK: Very well.

9 MR. HALL: Your Honor, we have this morning
10 Mr. Vincent S. Boyer for a continuation of cross-examination.
11 Mr. Boyer was cross-examined by the Consumer Advocate on
12 Thursday. He is available for cross-examination by the
13 Staff.

14 Mr. Boyer has been previously sworn and his various
15 statements have been previously authenticated. However,
16 I do have one question respecting an additional correction
17 that Mr. Boyer wishes to make to his statements.
18 Whereupon,

19 VINCENT S. BOYER

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

22 DIRECT EXAMINATION

23 BY MR. HALL:

24 Q Mr. Boyer, do you have a correction which you
25 would like to make to your Statement No. 1A this morning?

1 A. Yes, I do.

2 Q. Could you explain that correction --

3 MR. HALL: I would note, Your Honor, that we have
4 passed out an errata sheet, which I believe we have given
5 Your Honor a copy of, which contains the correction upon it.

6 BY MR. HALL:

7 Q. Mr. Boyer, would you explain the nature and
8 purpose of the correction that you are making and where it
9 appears in your direct statements?

10 A. Yes. On pages 8 and 9 of my prepared statement,
11 I discuss the three cases which we made in analyzing the
12 construction progress at Limerick. In summarizing the work
13 of our other people, there was some lack of clarity or
14 perhaps an erroneous impression that crept into that. So
15 I have rewritten that section which begins on page 8, line 31
16 and goes to page 9, line 19.

17 The first five lines, lines 31 to 39, are modified
18 on page 8, and the first full paragraph on page 9 is
19 rearranged.

20 MR. HALL: Your Honor, I believe that the nature of
21 the correction, which is really a matter to attempt to make
22 the statements more clear and following the analyses
23 presented by Mr. Clarey and Mr. Coughlin, is clear.

24 I would request that the correction sheet be permitted
25 into the record as Exhibit VSB-1. It does not change any

1 substantive analysis or add any substantive discussion or
2 analysis. It is simply an effort to clarify that Mr. Boyer's
3 paragraphs are intended simply to summarize the analyses
4 presented by Mr. Clarey and Mr. Coughlin.

5 JUDGE MATUSCHAK: Any objections?

6 (No response.)

7 JUDGE MATUSCHAK: Without objection, the motion is
8 granted.

9 MR. DELANEY: What was your identifier for this
10 document?

11 MR. HALL: Exhibit VSB-1.

12 (Whereupon, the document was
13 marked as PECO Exhibit No. VSB-1
14 for identification, and was
15 received in evidence.)

16 THE WITNESS: In addition, on page 3 there is one
17 word that should be corrected and that is on line 31; the
18 title of Mr. Clarey is PECO's Limerick Construction
19 Superintendent rather than Station Superintendent. So the
20 word "Station" should be stricken and replaced with
21 "Construction."

22 On page 9, line 37, there is a typo. The second
23 word from the end of the line which reads "case" should be
24 "cash."

25 BY MR. HALL:

Q Does that conclude the corrections that you wish
to make to this document, Mr. Boyer?

1 A. Yes.

2 MR. HALL: Your Honor, with those additional correc-
3 tions, Mr. Boyer is available for cross-examination.

4 JUDGE MATUSCHAK: Very well.

5 Staff?

6 CROSS-EXAMINATION

7 BY MR. DELANEY:

8 Q. Good morning, Mr. Boyer. My name is Dan Delaney.
9 I have a couple of questions on your rebuttal and sur-
10 surrebuttal testimony.

11 I note that your sur-surrebuttal statement, PECO
12 Statement 1B I think it is responsive to the Staff's
13 position on the Limerick rate base addition presented by
14 the company in the case, as I understand your comments
15 concerning that, it is your position that the Staff's
16 adjustment would have required the plant to have been
17 completed in April of 1981; is that correct?

18 A. The Staff indicated that April of 1981 was the
19 date by which they felt the plant or the unit could have
20 been completed.

21 Q. And it is your position and your summation of
22 the company's evidence that such a completion date was and
23 is impossible?

24 A. That is correct.

25 Q. On Statement 1B, again which is your sur-surrebuttal

1 testimony, on the third page of that statement you speak of
2 the company's continuing efforts to obtain interim water
3 supplies for the Limerick 1 plant.

4 We had some cross-examination on this aspect of
5 the company's case on December 17th, Mr. Boyer, and I think
6 at that time I showed you an interrogatory response that
7 you had prepared and that we used as Exhibit No. 9.

8 (Document handed to witness.)

9 Q. On that interrogatory response, which was
10 DR-Staff-Limerick-8, we asked you to indicate what might
11 be additional sources of supply for the operation of the
12 Limerick 1 unit, and you have two entries there. I think
13 one is the temporary use of reservoir water, and the second
14 entry is mines, and the third is on-site storage.

15 Could you simply indicate to us the current status
16 of any applications the company may have for each of those
17 categories before the Delaware River Valley Basin
18 Commission?

19 A. Yes. With regard to the first one, the temporary
20 use of reservoir water, we have made an application to the
21 Delaware River Basin Commission for the use of water from
22 the Tamaqua City reservoirs.

23 Q. That is the application that is described in
24 your Statement 1B?

25 A. Yes. It is the Borough of Tamaqua rather than

1 the city. In 1B, yes.

2 Q. Page 3?

3 A. Yes. A public hearing is scheduled on that
4 matter on April 15, 1986.

5 Q. As I understand your testimony in your sur-
6 surrebuttal, you have reached agreement with the Tamaqua
7 Borough Authority and are now seeking to have that approved
8 by the Water Basin Authority?

9 A. That is correct. We have a signed agreement
10 between ourselves, the Borough of Tamaqua and the Tamaqua
11 Water Authority relating to the use of storage space in
12 their reservoir and the use of water from that storage
13 space to be discharged into the Schuylkill River to flow
14 down the Schuylkill River for our use at Limerick.

15 Q. Are there any other reservoir-based applications
16 before the DRBC right now?

17 A. Not reservoir-based other than the one which
18 would come under the second category, mines; and that is
19 in our application to DRBC, we have also included the
20 discharge of water from the Beechwood pool of the Reading
21 Anthracite Company.

22 The application to the DRBC was a joint application
23 signed by Reading Anthracite, the Borough of Tamaqua, the
24 Tamaqua Water Authority and Philadelphia Electric.

25 We are proposing to use water from Beechwood pool in

1 an amount that the quantity of Beechwood water would represent
2 no more than 30 percent of the total water being discharged
3 from both Tamaqua and Beechwood.

4 Q. Would that restriction be because of the water
5 quality from the pit?

6 A. Yes. There was a question in our prior
7 applications with regard to use of the Beechwood pool
8 relating to the dissolved solid content which is higher
9 and for which we need a variance from the Department of
10 Environmental Resources of the State of Pennsylvania to
11 discharge that water into the West Branch of the Schuylkill
12 River.

13 By using the mixture of water from Tamaqua and
14 Beechwood at the point where the West Branch joins Little
15 Schuylkill approximately 20 miles downstream from each of
16 the discharge points, the total dissolved solids of the
17 mixture will be equal to that in the Schuylkill River at
18 that point.

19 We have also specified river flows at which we would
20 cut off the use of the Beechwood pool water, namely 400 cubic
21 feet per second as measured at Pottstown, and we have said
22 that the total dissolved solids in the river at the first
23 downstream user below Limerick, namely the citizen's home
24 water intake, will not exceed 455 parts per million total
25 dissolved solids.

1 This value was approved in our initial application to
2 the DRBC in 1975 and was again used as the basis for DRBC's
3 granting us withdrawals from the Schuylkill River down to
4 415 cfs in lieu of the 530 cfs, which is our normal permit
5 condition, that approval being given to us last October 2nd.

6 The water quality standards specify 500 parts per
7 million as the limit on total dissolved solids. So we are
8 considerably below that value.

9 Q. In response to a prior question, you indicated
10 that the Tamaqua Borough application would be presented to
11 the DRBC for its April 15th meeting?

12 A. It has been presented to them. A public hearing
13 on the matter is scheduled for April 15th.

14 It is the custom of the DRBC on any application to
15 hold a public hearing.

16 Q. What would the applicable schedule be for the
17 Beechwood pit application you just described?

18 A. That will be reviewed at the same time since it
19 is part of our application. The application is what will
20 be reviewed on April 15th, and the application consists
21 of discharge from Tamaqua and discharge from Beechwood. The
22 DRBC could approve it in total or it could separate it and
23 approve part of it.

24 Q. Would I be correct in presuming that the actual
25 decision will be made sometime after April 15th?

1 A. It could be made on April 15th or sometime shortly
2 thereafter. As part of that review, our prior application,
3 which was submitted last December, for use of water alloca-
4 tions from the Titus and Cromby Unit 2 generating stations
5 and for the substitution of dissolved oxygen measurements
6 in lieu of a temperature restriction will also be considered.

7 Q. Would I be correct in understanding that all
8 those things you just described are outstanding applications
9 to the DRBC?

10 A. They are outstanding applications, correct.

11 Q. Are there any other applications the company has
12 before the DRBC at this point?

13 A. No.

14 Q. Excuse me for a second, Mr. Boyer.

15 (Pause.)

16 Q. Could you indicate to us when you initiated the
17 discussions with the Tamaqua Borough that you described
18 to us just previously?

19 A. Last fall, towards the end of last year. I can
20 remember being up there looking at the reservoir on a very
21 pleasant day in probably I would guess October.

22 Q. How about the Beechwood pit application; do you
23 recall when you initiated them?

24 A. Those discussions were initiated more than a
25 year ago.

1 Q. By more than a year ago, do you mean the spring
2 of 1985, Mr. Boyer?

3 A. I would guess it would have been about the spring
4 of 1985 at some time prior to the summer, because we put
5 in an application for its use during the summer or fall.
6 So the spring of 1985, yes.

7 Q. Once again, on your Statement 1B, Mr. Boyer, on
8 the first two pages of that statement, you talk about the
9 company's practice of using both publicly announced and
10 construction target completion dates.

11 Could you indicate to us: were Bechtel and the
12 other subcontractors working on Unit 1 aware of the company's
13 practice in this regard of having different dates publicly
14 announced and construction schedule dates?

15 A. Well, Bechtel was aware of our public announced
16 date. Whether the subcontractors were or not, I really
17 can't say. The subcontractors and the people, including
18 Bechtel, at the site were all working towards the construc-
19 tion target date.

20 Q. And Bechtel at least knew of the existence of
21 a different publicly announced date?

22 A. Yes. It was reported in their various summaries.

23 Q. Excuse me for a second, Mr. Boyer.

24 (Pause.)

25 Q. As I understand, the publicly announced completion

1 dates were the ones that were the subject of press releases
2 by the company which would then subsequently be picked up
3 by the media and publicized?

4 A. Yes.

5 MR. DELANEY: That's all the questions I have for
6 Mr. Boyer. Thank you, Your Honor. Thank you, Mr. Boyer.

7 JUDGE MATUSCHAK: Any other cross-examination of
8 this witness?

9 (No response.)

10 JUDGE MATUSCHAK: Mr. Boyer, you were asked about
11 Zimmer and the Washington plants for the alleged suits to
12 be filed in regard to alleged GE errors in design.

13 I think you said that you do not know whether the
14 plant in the Washington Power Supply was completed.

15 THE WITNESS: At the time I was cross-examined and
16 was shown a document by Mr. Wersan, I didn't have a chance
17 to really glance through that document. What he showed me
18 was WNP-2, I think, but at least a WNP as the identification
19 of the unit. He asked me whether I was familiar with that.

20 Well, there was some confusion in my mind because
21 Washington Public Power System had at one time up to five
22 units proposed. Some of these have been cancelled. Others
23 are nearing completion.

24 There was also a plutonium production reactor at
25 the Hanford site which was known as the nuclear production

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1 reactor. This had a steam generating system added on to
2 it. I knew that this was a natural uranium reactor and
3 not a boiling water reactor, although GE had been involved
4 in the design of that facility.

5 There was some confusion when he showed me WNP. I
6 thought he was talking about that reactor rather than what
7 was known as the WPPS No. 2 reactor, which is a boiling
8 water reactor.

9 I actually have visited the WPPS No. 2 reactor, and
10 I have been inside that containment. The containment is a
11 different type of containment from that which we have at
12 Limerick. It is a Mark II containment, but whereas
13 Limerick is a reinforced concrete structure, the WPPS is a
14 steel structure, which uses the strength of the steel to
15 hold the pressure that is required, rather than utilizing
16 the concrete as well.

17 So there are some design differences.

18 In addition, when I was talking about Zimmer, I be-
19 lieve I said Cleveland instead of Cincinnati Gas & Electric,
20 which I am well aware that Zimmer is part of Cincinnati Gas
21 & Electric's system.

22 JUDGE MATUSCHAK: Has the WPPS plant been completed?

23 THE WITNESS: I believe it has; yes, it has.

24 JUDGE MATUSCHAK: What about the Zimmer plant?

25 THE WITNESS: Zimmer, no, has not been. It was

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1 canceled, basically, as a nuclear plant and is being inves-
2 tigated to be used as a -- converted into a fossil-fired
3 unit.

4 JUDGE MATUSCHAK: Any redirect?

5 MR. HALL: Your Honor, if I could have just a minute.

6 JUDGE MATUSCHAK: We'll take a short break.

7 MR. HALL: Thank you.

8 (Recess.)

9 JUDGE MATUSCHAK: When you're ready.

10 MR. HALL: Thank you, Your Honor.

11 REDIRECT EXAMINATION

12 BY MR. HALL:

13 Q Mr. Boyer, you were asked a series of questions
14 by Staff Counsel Delaney with respect to the company's
15 practice of having its construction site work toward a con-
16 structure target date which was more advanced than the
17 publicly announced completion date as stated in financial
18 press releases.

19 Could you state briefly what specific actions did
20 the company take in an effort to assure that the construc-
21 tion personnel and the sub-contractors and contractor were
22 in fact treating the construction target date seriously in
23 attempting to work toward that date for completion?

24 A Yes. I would note that the construction opera-
25 tions, the entire site operations, were geared towards the

1 construction target schedules.

2 The schedule of procurement, the schedule of engineer-
3 ing and design, the schedule of construction installation
4 and the reports, the monthly reports, weekly and monthly
5 reports, which were prepared and reviewed were geared to
6 that construction target schedule whether we were ahead of
7 it or slightly behind it or our position relative to it,
8 rather than to the commercial operation or the publicly
9 announced schedule.

10 Our cash flow was generated and expended on the
11 basis of meeting that construction target schedule.

12 We, in the engineering and in the field, realized
13 that completing the plant as rapidly as possible would re-
14 sult in the lowest capital cost expenditure for the plant.

15 The construction targets were made and developed on
16 the basis of what we believed we could achieve and entire
17 plant forces, Bechtel, Philadelphia Electric and all sub-
18 contractors, were working to that schedule.

19 Mr. Clarey can give further details regarding this
20 if it is desired.

21 Q Mr. Boyer, you were asked a question by
22 Mr. Wersan on Thursday with regard to certain PWR facilities,
23 pressurized water reactors, that were completed during the
24 time period late 1980 through the end of 1981.

25 Are you familiar with that question?

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1 A. Yes.

2 Q. Do you have any additional comment to make at
3 this time respecting those facilities and whether they are
4 a proper comparison to the Limerick plant?

5 A. Yes. The plants that were identified in last
6 Thursday's hearing were listed on Schedule 1 of RJM-1, and
7 they show that there are five pressurized water reactor
8 plants who received their low power license in 1980 and '81.

9 While I didn't note the correction which Mr. Wersan
10 made, I think he might have added Sequoyah No. 1 into that
11 group -- I didn't note that on my paper -- so it could be
12 six.

13 I would note that all of these plants had their
14 FSARs docketed in 1971 through 1974, most of them being in
15 the 1973 and 1974 period, and that the plants were essen-
16 tially completed and ready for licensing or approaching
17 licensing at the time of the Three Mile Island event, and
18 that they were basically impacted by TMI; and after the
19 essential reviews of that event had taken place, these
20 plants were ready to receive their license and so were the
21 first ones issued.

22 The boiling water reactor plants, such as Susquehanna,
23 did not docket its FSAR until 1978. The LaSalle County
24 No. 1, LaSalle No. 1, which was the first boiling water
25 reactor license, had not docketed its FSAR until 1977, and

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1 so it was at a different stage of construction completion
2 at the time of the Three Mile Island event.

3 In summary, the fact that five or six pressurized
4 water reactors received their low power licenses earlier
5 than boiling water reactors was due to the nature of the
6 ordering of the plants in past history and the fact that
7 these plants were practically ready for licensing by mid-
8 '79.

9 Q Mr. Boyer, you were also asked a series of
10 questions by Mr. Wersan on Friday respecting the company's
11 position with regard to suing General Electric Company
12 with regard to the Mark II containment matter.

13 Have you any additional comments to make with re-
14 spect to that matter today?

15 A Yes. I have contacted our legal department.
16 They are aware of the initial suit in the Zimmer matter and
17 of the amended complaint. They are watching it closely,
18 and if there is any evidence of fraud indicated, Philadel-
19 phia Electric would file a suit.

20 We are also aware of the WPPS or WNP suit and are
21 following that matter, and will take whatever action we
22 feel appropriate at the appropriate time.

23 The engineering department is supplying any techni-
24 cal information which the legal department feels it may
25 need.

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1 Q Mr. Boyer, in response to a question by the
2 Administrative Law Judge today, you noted that the WNP-2
3 plant had a steel containment.

4 Is that a factor which distinguishes it from the
5 Limerick plant respecting the possible effects of the
6 Mark II design loads area, and can you explain the nature
7 of that difference?

8 A Yes. The analysis of that steel structure
9 would be different from the analysis of a pre-stressed con-
10 crete containment vessel.

11 There is a different view that would be taken with
12 regard to safety analysis, accident analysis, the prospect
13 of failures and releases of activity from the containment.

14 The cost of the containment would be different since
15 it was a slightly different design, being a steel vessel
16 versus a concrete vessel, and a much heavier steel vessel,
17 and the construction conditions in its installation would
18 be somewhat different.

19 So there are many variables; although you could say
20 it's a car, but it's a different model car, and there are
21 many different features associated in talking about the two
22 types of containments that would have to be considered.

23 Q Mr. Boyer, I believe you have indicated today,
24 also in response to the Administrative Law Judge's ques-
25 tions, that the Zimmer plant was canceled or is being

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1 considered for conversion to coal.

2 Was the cancellation of the Zimmer plant as a nuclear
3 plant related at all to the Mark II issue?

4 A. Could you repeat that last sentence? I was
5 thinking of the former and I missed the last sentence.

6 Q. In essence the question asked, Mr. Boyer, what
7 was the reason for the cancellation of the Zimmer plant?

8 A. The cancellation of the Zimmer plant related to
9 concerns over documentation on the quality of the installa-
10 tion of various features of the plant.

11 In considering the cancellation of a plant, the
12 costs associated with the containment would be different
13 from a plant that is being placed in service.

14 Q. Would I be correct, Mr. Boyer, that the Mark II
15 issue, to the best of your knowledge, had no relationship
16 to the cancellation of the Zimmer plant?

17 MR. WERSAN: Objection; it is a leading question.

18 JUDGE MATUSCHAK: Yes. Sustained.

19 BY MR. HALL:

20 Q. Mr. Boyer, do you have any opinion as to what
21 relationship the Mark II issue may have to the cancellation
22 of the Zimmer plant?

23 A. To the best of my knowledge, it did not play a
24 part in the cancellation of the plant. The Cincinnati Gas
25 & Electric people were part of the Mark II program. One

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of their employees, as I mentioned before, was a group leader in some of the efforts that were going on for the lead plants, and the work on the Mark II was progressing; and since it was just about ready for licensing, it presumably had been completed at the time that the cancellation decision was made.

So the Mark II would not have played any part in the overall decision to cancel the plant.

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Q Finally, Mr. Boyer, you were asked a series of questions by the Consumer Advocate on Thursday as respects OCA Exhibit 85. Do you recall that series of questions?

A Yes.

Q Mr. Boyer, have you any additional comment that you wish to offer at this time in respect to that exhibit?

A Yes. OCA Exhibit 85 was a briefing book which was prepared in January of 1981 to distribute to our Board of Directors prior to taking a trip to the West Coast to visit General Electric and Bechtel. The purpose of the book, as indicated in the preface, was to acquaint the Board with the major aspects of the Limerick project and to identify areas of concern, and to point out places where the Board could be of assistance in encouraging General Electric and Bechtel to do a first class job and pay strict attention and put their top people on the Limerick project.

Included in the material is a project description and a summary of milestones. On page 13 a cost summary is given, and I was asked certain questions relative to it, to read the numbers. I would point out that all of the costs there were for Number 1 and 2 units on the common portion of the plant, so it was a total plant cost projection.

There was no effort to really break down the costs into various categories other than the broad categories of overhead, taxes, AFUDC and so forth.

1 The intent of that is pointed out on the graph which
2 follows that page, which shows the increases in AFUDC and
3 direct costs and the extension and schedules to the present
4 commercial service dates.

5 The AFUDC was a large part, and the only way to reduce
6 that is to get the plant completed on an earlier schedule.
7 To get it completed on the existing schedule and avoid any
8 future delays we were encouraging the Board of Directors
9 to use their influences, their pressures on General Electric
10 and Bechtel to use their top talent and keep our job on
11 schedule.

12 The following page, page 14, lists a summary of service
13 date history and announced delays, and I was asked to read
14 the reasons for the delays of 1974, October; May, 1975; and
15 May, 1978. The latter two state in this document that the
16 plant was rescheduled due to reduced load forecasts. I would
17 point out that this whole document was put together by our
18 System Planning Division with input from Construction and
19 other sources, but the wording was written by them.

20 The System Planning Division deals in load forecasts,
21 load projections and load-related matters, and they just
22 put "rescheduled due to load forecast" as the primary thing
23 in their mind. The document was not intended to be an
24 official document related to the cause of delays, and I would
25 point out that the official statements of the company are

1 included in the Board of Directors' minutes and in the press
2 releases which were released at the time of the delays.

3 For the 1976 and '78 delays the reasons I've stated
4 to be financial conditions and load growth.

5 Beginning on page 19 of the document were the areas
6 of concern that we wanted to call the Board's particular
7 attention to when we were discussing matters with Bechtel
8 and General Electric. These areas included labor shortage,
9 the containment situation, the anticipated transients with-
10 out scram, licensing and hearings, Public Utility Commission
11 hearings, the action of opposition groups where public
12 information programs are needed to get messages across to
13 the public, and the news media where it is necessary to make
14 attempts to get objective presentations on nuclear energy
15 rather than some of the material which the newspapers feel
16 will encourage purchase of their publications and in which
17 they tend to emphasize the negative aspects.

18 Each of these items had a little summary and concluded
19 with a statement of encouragement to the Board members to
20 emphasize the importance of these items with General Electric
21 and Bechtel and to encourage action on their part to be of
22 particular assistance in these areas.

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

25 MR. DELANEY: I have a few, Your Honor.

RE CROSS-EXAMINATION

1
2 BY MR. DELANEY:

3 Q I just have one or two questions, Mr. Boyer. On
4 your redirect Mr. Hall asked you some questions about the
5 company's practice of the dual construction dates and
6 publicly announced completion dates. I understood one of
7 your initial responses to these questions to be that the
8 company's practice in doing this resulted from their
9 realization that the faster the plant was completed the less
10 expensive it would be to construct?

11 A The Engineering Department's view was always that
12 the quicker we could get the plant completed, the capital
13 costs would be the least amount, since AFUDC is an over-
14 riding cost.

15 Q In the various filings made with different
16 regulatory authorities I'm interested as to what dates the
17 company would use. In the SEC filings that the company was
18 making during this period, what date did they report to the
19 SEC concerning the progress of the construction?

20 A I would expect that in the official filings we
21 would use the official published commercial operation date
22 or fuel loading date.

23 Q Which was not necessarily identical to the --

24 A Which was not necessarily the construction target
25 date, no.

1 Q What about in the company's annual reports?

2 A We would use the official date, but we might
3 mention -- although I don't think we did mention the
4 construction target dates there.

5 Q What about in the bimonthly reports to this
6 Commission which the company began in May of 1983?

7 A They would all utilize the official dates, the
8 official announced dates.

9 Q The publicly announced dates --

10 A The publicly announced dates.

11 Q -- which again were not identical to the
12 construction target dates?

13 A Right.

14 MR. DELANEY: That's all the questions I have.

15 Thank you, Mr. Boyer.

16 JUDGE MATUSCHAK: OCA?

17 RECROSS-EXAMINATION

18 BY MR. WERSAN:

19 Q Mr. Boyer, you discussed some of the plants
20 listed in the schedule to RJM-1 and discussed when they
21 filed their FSAR with the NRC and began licensing proceedings.

22 Suppose one of those plants had been a BWR instead
23 of a PWR and had filed its FASR in 1973 or whenever those
24 other ones did, and that plant had been working toward
25 completion on a rapid pace; do you believe that that BWR

1 would have been able to have been licensed and resolve the
2 Mark II problems in 1980 or 1981?

3 A Well, I can't say without making a further study
4 of it. The Mark II program had a lead plant program. Had
5 there been another plant whose scheduled date was earlier
6 than the others in the group, the total program would have
7 been directed toward addressing that concern. And, undoubt-
8 edly, using bounding loads, they would have been able to
9 design and construct that facility in a manner which would
10 have been acceptable to the NRC, using bounding loads, and
11 would have been able to get licensed earlier.

12 Q You also discussed the steel containment at the
13 WPPSS-2 nuclear plant as compared to the reinforced concrete
14 containment at Limerick, and you indicated that the analysis
15 on how to deal with the Mark II hydrodynamic loads might
16 be a little different because it was a different kind of
17 containment; is that correct?

18 A Yes.

19 Q Would you agree, however, that whether you are
20 analyzing for a steel containment or for a concrete contain-
21 ment you first have to have the proper definition of what
22 the loads are and then move from that point, and while steel
23 may present a different kind of problem you still have to
24 design it to accommodate the hydrodynamic loads?

25 A Yes, it would have to be designed to accommodate

1 them, either the bounding loads or the actual loads as
2 developed by future test programs.

3 Q So the difference I guess, in your opinion,
4 between the steel containment and the concrete containment
5 is how the Mark II loads were eventually accommodated or
6 resolved, not the fact that the loads did not exist or
7 were qualitatively different at one plant or the other?

8 A Well, the loads could be different. I guess it
9 is really the effect of the loads could be different. The
10 loads might be slightly different, depending upon the
11 configuration of the vent pipes and the relief valve piping.
12 I wouldn't suspect that there would have been too much there,
13 but it's possible. Without studying the designs I really
14 can't tell you.

15 Q You also discussed OCA Exhibit Number 85, which
16 is the Bechtel briefing book, and you stated that that
17 document was prepared by System Planning. Does that mean
18 that everything in there was prepared by System Planning?

19 A No. Some of the input came from the Construction
20 Division and others other than Engineering.

21 Q Did some also come from the Financial Division?

22 A Well, I don't think in preparing this that too
23 much would have come from the Financial Division because
24 the Engineering Department had all the cost figures, and
25 that's what's being recorded here. They had the cash flows

1 and the materials, they were aware of the problems, they
2 were aware of the plant description; Engineering had the
3 plant description. I doubt that very much came from the
4 Financial Department in the preparation of this booklet.

5 Q This was presented to the Board of Directors of
6 Philadelphia Electric Company; is that correct?

7 A Yes.

8 Q Do you suspect that information prepared by
9 company employees and presented to the Board of Directors
10 could be inaccurate or misleading?

11 A It would be appropriate for the purpose for
12 which it was intended. This was undoubtedly reviewed by
13 the Financial Department, since when it was prepared and
14 circulated for distribution to the Board all of the depart-
15 ments would have been given a chance to make sure that there
16 was nothing in there that was obviously wrong from that
17 department's viewpoint.

18 Q Do you think Mr. Paquette might have reviewed
19 that document?

20 A Whether he reviewed it personally, I'm sure that
21 his department looked at it to see that it was appropriate
22 for presentation to the Board. Remember, this is 1981.

23 Q I recall that.

24 A At that time there was not any great concern
25 relative to the particular reasons that may have been

1 identified in the construction program delay. The explanation
 2 tion for the delay was not the purpose of this document.
 3 The purpose of this document was to give a general description,
 4 to look forward, to look forward at the problems we
 5 had ahead of us, and to get support for the resolution of
 6 those problems in a prompt manner.

7 We were not looking back other than just briefing
 8 materials for the Board.

9 Q But when providing the briefing material and
 10 trying to give a very short synopsis of historical events,
 11 would you assume that the authors of the book might try to
 12 present the key items rather than tangent items?

13 A I think the key items were. I would say that
 14 the reasons for some delay in the past would have been a
 15 tangent item and could have been omitted actually without
 16 reducing the effectiveness of this document for the purpose
 17 it was intended.

18 Q So you think that the document was possibly
 19 misleading or inaccurate in not giving the key reasons for
 20 the delay, in your opinion?

21 A Absolutely not. I said just the opposite. In
 22 fact, on page 1 we do say that the delay in the receipt of
 23 the construction permit, failure of anticipated load growth
 24 to materialize and financial constraints have resulted in
 25 postponement of commercial operations. So it is covered

1 in other areas.

2 Q Mr. Boyer, you also indicated the purpose of the
3 document was to brief the Board in its discussions with
4 Bechtel and General Electric, to get Bechtel to continue
5 pushing ahead and to assign its best people to the project;
6 is that correct?

7 A That's correct. You must realize that at this
8 time there was a tremendous amount of construction activity
9 going on in the industry. Bechtel had a lot of other
10 projects. We wanted to make sure that the good people
11 which we had on our job stayed there, and that where
12 additional efforts were needed that we got their top talent.

13 Q So I take it, therefore, that there was a
14 concern or at least a potential concern that Bechtel might
15 not assign its best people to the Limerick station?

16 A I would would put it in the class of a potential
17 concern. It was something out there that could occur if
18 we just laid back and let things go on and let the water
19 flow down the river, so to speak. With all the competition
20 for their good people, it was prudent on our part to be sure
21 that we got the attention that we felt was necessary.

22 Q Was that concern the key reason for the meeting
23 with Bechtel and GE?

24 A Basically that's the reason the Board of
25 Directors went out and visited these companies, and to get

1 confirmation of both parties' ability to be able to meet
2 the schedules which we then had.

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

4 MR. HALL: I have nothing further, Your Honor.

5 JUDGE MATUSCHAK: Is there anything further of this
6 witness?

7 (No response.)

8 JUDGE MATUSCHAK: The witness is excused.

9 (Witness excused.)

10 MR. HALL: Your Honor, I believe it has been agreed
11 that the Staff is going to present Mr. Fawcett for Mr.
12 Dougherty's testimony.

13 MS. CHESTNUT: Yes, Your Honor. Mr. Dougherty still is
14 unavailable because of a medical emergency, so Staff is
15 going to present his associate, Mr. Fawcett, to authenticate
16 and adopt Mr. Dougherty's surrebuttal at this time.

17 JUDGE MATUSCHAK: Does counsel agree to the admission
18 of that testimony without authentication?

19 MR. HALL: Yes, Your Honor.

20 JUDGE MATUSCHAK: You may make your motion.

21 MS. CHESTNUT: Your Honor, subject to the agreement
22 with respect to authenticity, Staff would like to have the
23 surrebuttal testimony of Mr. Dennis P. Dougherty marked as
24 Staff Statement DPD-2 and moved into the record in this
25 proceeding subject to any timely motions to strike or any

other objections.

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JUDGE MATUSCHAK: The motion is granted.

(Whereupon, the document wa marked as Staff Statement No. DPD-2 for identification and was received in evidence.)

MS. CHESTNUT: Your Honor, I would like to have Mr. Fawcett sworn in because he does have an additional comment to make.

JUDGE MATUSCHAK: What is the name of this witness?

MS. CHESTNUT: Mr. Fawcett, Your Honor.

JUDGE MATUSCHAK: He hasn't been sworn?

MS. CHESTNUT: No, he hasn't been sworn, Your Honor.

Whereupon,

GARY A. FAWCETT

having been duly sworn, testified as follows:

MS. CHESTNUT: Your Honor, I would also like to note for the record that this morning I distributed to Your Honor, the court reporter and to the parties a statement of Mr. Fawcett's professional qualifications.

DIRECT EXAMINATION

BY MS. CHESTNUT:

Q Mr. Fawcett, is there anything further you would like to address with respect to Staff Statement DPD-2?

A Yes. I would like to address the contention contained in the sur-surrebuttal testimony of Mr. Clarey

1 on PECO Statement 4B.

2 On page 2 of this statement Mr. Clarey makes the
3 contention that by including a calculation in our surre-
4 buttal testimony that presents a rough estimate of the over-
5 all effect of not including the post-October, 1984 start-up
6 costs in our analysis we are attempting to correct an
7 analytical error. This is not true.

8 This is only a very rough estimate and was only
9 included because of the considerable discussion that occurred
10 on the matter during the cross-examination of Mr. Dougherty's
11 direct testimony. During that cross-examination the overall
12 effect of excluding the post-October, 1984 start-up costs
13 was discussed at length.

14 After reviewing Mr. Clarey's rebuttal testimony in
15 PECO Statement Number 4A, it became apparent that Mr.
16 Dougherty's position was still unclear. We have included
17 this estimate to demonstrate that the exclusion of the post-
18 October, 1984 direct costs results in an overstatement of
19 our calculated costs of delay of only \$12 million, and not
20 the \$631 million which was contended by the company during
21 the cross-examination of Mr. Dougherty's direct testimony.

22 My intent in presenting this tabulation is to try to
23 clear this up and not to correct an analytical error. We
24 are not attempting to adjust our total calculated costs of
25 delays because, in fact, after a further review we are not

1 at all sure there is anything to correct.

2 In our quantification we assumed that the post-1984
3 start-up costs would have been spent evenly over the 42-month
4 period prior to April, 1981. On that basis we accrued
5 AFUDC of approximately \$30 million. Of this amount we say
6 that approximately \$18 million is an offset because the
7 actual start-up costs would have to be deflated. But by
8 the company's own contention, the longest period of
9 time over which these start-up costs would have been
10 incurred is 15 months.

11 If we spread these start-up costs into only the 15
12 months prior to April, 1981 the amount of allowable AFUDC
13 that we would have calculated would have only been approxi-
14 mately \$13 million, which when offset by the \$18 million
15 of start-up deflation would result in an understatement to
16 our cost quantification of approximately \$5 million.

17 To take this one step further and assume that the
18 start-up period was six months, as was projected by the
19 company prior to the announcement of the 1976 delay, the
20 amount of allowable AFUDC that we would calculate would be
21 approximately \$6 million. This again would have to be
22 offset by the amount of the start-up costs deflation.

23 So because of the fact that there are several
24 different assumptions that we can work with, and in any
25 event the dollar amount of the change to our total

1 calculation either over or under-stated is immaterial, we
2 do not choose to adjust the total costs of delay that was
3 presented in Mr. Dougherty's direct testimony.

4 Q Thank you, Mr. Fawcett.

5 MS. CHESTNUT: Mr. Fawcett is available for cross-
6 examination, Your Honor.

7 MR. HALL: Your Honor, I would ask that we be given
8 a copy of Mr. Fawcett's written material and given the
9 opportunity to review that, and then have cross-examination
10 of Mr. Fawcett this afternoon, if that is possible.

11 MS. CHESTNUT: Your Honor, there is no written state-
12 ment prepared.

13 MR. HALL: I note that he has been reading from
14 notes.

15 MS. CHESTNUT: He has his notes, Your Honor. I don't
16 believe there is any provision for written sur-surrebuttal.
17 If Mr. Hall would like we can have it typed up on the
18 understanding that it may vary slightly from what Mr.
19 Fawcett gave today.

20 MR. HALL: That wouldn't leave us the opportunity
21 I think then to review it.

22 JUDGE MATUSCHAK: I think he read from what he has
23 before him. Do you have any objection to having the
24 company review that and read that?

25 MS. CHESTNUT: No, I don't have any objection, Your

1 Honor.

2 MR. HALL: That's all we want. We would like to
3 review the written statement.

4 JUDGE MATUSCHAK: Before the cross-examination they
5 want to read it.

6 MS. CHESTNUT: Your Honor, the normal procedure has
7 been for oral sur-surrebuttal here. I don't mind making
8 it available, but I do want to note that we are the only
9 people who have been asked; that we haven't asked the
10 company to provide that.

11 MR. HALL: Your Honor, I don't believe we have presented
12 this type of testimony, but whatever; that's the only request
13 we make. If we can do that and talk to Mr. Fawcett this
14 afternoon we would be most pleased.

15 JUDGE MATUSCHAK: If you will let the company read
16 that, we will defer cross-examination and take up some other
17 matter and have the witness available.

18 MR. HALL: Thank you.

19 (Witness temporarily excused.)

20 MR. HALL: Your Honor, we have Mr. Clarey and Mr.
21 Coughlin to be presented at this time.

22 Your Honor, I have spoken to the other parties. Mr.
23 Clarey and Mr. Coughlin have presented a joint analysis as
24 well as separable testimony. I believe it is agreeable to
25 the other parties that we should present Mr. Clarey and

Mr. Coughlin as a panel on their joint analysis.

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MR. WERSAN: That's fine, Your Honor.

JUDGE MATUSCHAK: Very well.

MR. HALL: May I have a moment, Your Honor?

JUDGE MATUSCHAK: Yes.

(Pause.)

MR. HALL: Thank you, Your Honor. We have for presentation at this time the rebuttal and sur-surrebuttal testimony of Mr. James J. Clarey and Mr. James R. Coughlin.

Mr. Clarey has been previously sworn; Mr. Coughlin has not.

Whereupon,

JAMES J. CLAREY

having previously been duly sworn, testified further as follows:

and

Whereupon,

JAMES R. COUGHLIN

having been duly sworn, testified as follows:

DIRECT EXAMINATION

MR. HALL: Mr. Clarey, would you state your full name and affiliation for the record please?

WITNESS CLAREY: James J. Clarey. I am Superintendent of Construction at Limerick for Philadelphia Electric Company.

1 MR. HALL: Mr. Coughlin, would you please do the same?

2 WITNESS COUGHLIN: My name is James R. Coughlin. I'm
3 an employee of Bechtel Power Corporation.

4 MR. HALL: Mr. Clarey, do you have before you three
5 documents entitled in their right-hand corner PECO Statement
6 Number 4A, PECO Statement Number 4B and PECO Statement Number
7 4C?

8 WITNESS CLAREY: Yes.

9 MR. HALL: Are these documents -- or is the first
10 of these documents entitled PECO Statement Number 4A in
11 fact your rebuttal testimony prepared for use in this pro-
12 ceeding?

13 WITNESS CLAREY: Yes.

14 MR. HALL: Mr. Clarey, do you have any corrections
15 to make to this document at this time?

16 WITNESS CLAREY: Yes, I do.

17 MR. HALL: Would you please go ahead and make those
18 corrections?

19 WITNESS CLAREY: The first correction would be on
20 the title page. In the description of the content the
21 middle line reads "Limerick on Susquehanna Schedule Cost
22 Analysis." That line shall be deleted.

23 Secondly, on page 4, line 1, the words "accepted by
24 Mr. O'Brien" shall be deleted.

25 MR. HALL: On page 1?

1 WITNESS CLAREY: I'm sorry; I was out of order. On
2 page 1 I have a correction at lines 24 through 28, the
3 sentence that begins "in addition, I will" etcetera, and
4 then it ends with "commercial operation date" shall be
5 deleted.

6 On page 11, on line 45, first the exhibit is entitled
7 JCC-1. That should be JJC-1.

8 And also the word "Schedule" should be "Section."

9 And in Schedule 3, the cost and schedule comparison,
10 in the description of the data referring to Plant I there
11 is a typographical error wherein the fuel load date should
12 be 3-86S. I would note that that is a typographical error
13 and does not affect the calculations or other data in that
14 schedule.

15 MR. HALL: Mr. Clarey, was the document identified
16 as PECO Statement Number 4A prepared under your direction
17 and supervision?

18 WITNESS CLAREY: Yes, it was.

19 MR. HALL: With the corrections that you have made
20 to this document, is it true and correct to the best of your
21 knowledge and belief?

22 WITNESS CLAREY: Yes, it is.

23 MR. HALL: Mr. Clarey, moving to the two documents
24 which are identified in the right-hand corner as PECO
25 Statement Number 4B, do you have any corrections to make

1 to these documents?

2 WITNESS CLAREY: No, I do not have a correction on
3 that document.

4 MR. HALL: And the second document that is
5 identified as PECO Statement Number 4B, the one that is
6 dated March 13, 1986, do you have a correction to that
7 document?

8 WITNESS CLAREY: Yes, I do On the title page in the
9 upper right-hand corner it should be number 4C rather than
10 4B.

11 MR. HALL: Does Your Honor have that?

12 JUDGE MATUSCHAK: The March 13th?

13 MR. HALL: The March 13th statement has unfortunately
14 been identified improperly in the right-hand corner. It
15 should be 4C instead of 4B.

16 Mr. Clarey, do you have any other corrections to make
17 to this document?

18 WITNESS CLAREY: Yes. On page 1 in lines 14 and 16
19 that sentence should read, "I have previously filed direct,
20 rebuttal, and sur-surrebuttal testimony identified as
21 PECO Statement Nos. 4, 4A and 4B respectively."

22 And on page 9 there is a minor correction. In the
23 middle of the page the calculation shown there reads "ratio
24 to AFUDC." That should be "ratio of AFUDC" etcetera.

25 That's all I have.

1 MR. HALL: Mr. Clarey, with those corrections, are
2 the documents identified in their right-hand corners as
3 PECO Statement Number 4B and PECO Statement Number 4C true
4 and correct, to the best of your knowledge and belief?

5 WITNESS CLAREY: Yes, they are.

6 MR. HALL: And are they, in fact, your prepared
7 sur-surrebuttal testimony for use in this proceeding?

8 WITNESS CLAREY: Yes, they are.

9 MR. HALL: Mr. Clarey, do you also have before you
10 two documents -- in fact three documents, the first one of
11 which is entitled PECO Exhibit JJC-1/JRC-1, the second one
12 of which is entitled PECO Exhibit JJC-2/JRC-2, and the third
13 one of which is entitled PECO Exhibit JJC-2?

14 WITNESS CLAREY: I have JJC-1/JRC-1; I have JJC-2/
15 JRC-2. JJC-2 I don't have.

16 (Document handed to witness by Counsel Hall.)

17 WITNESS CLAREY: Yes.

18 MR. HALL: Mr. Clarey, would you explain your partici-
19 pation in the development of PECO Exhibit JJC-1/JRC-1 and
20 PECO Exhibit JJC-2/JRC-2?

21 WITNESS CLAREY: Yes. These documents reflect the
22 analyses that were performed of the materials submitted by
23 the -- the testimony submitted by the OCA. My role was to
24 supervise the activities of Philadelphia Electric Company
25 in preparing this material, and to also overview the

1 material as it was prepared and as it was completed, and
2 in doing that review to provide my assessments and evalua-
3 tions of the assumptions that were made, and in general to
4 assure to the best of my ability the correctness of this
5 work.

6 MR. HALL: And, to the best of your knowledge, Mr.
7 Clarey, is the material which you have provided to be used
8 jointly with Mr. Coughlin in PECO Exhibits JJC-1/JRC-1 and
9 JJC-2/JRC-2 true and correct?

10 WITNESS CLAREY: Yes, it is.

11 MR. HALL: Mr. Clarey, would you state briefly the
12 purpose and what is contained in PECO Exhibit JJC-2?

13 WITNESS CLAREY: JJC-2 is a compilation of photo-
14 graphs which depict the commodities contained within the
15 drywell, the drywell portion of the containment at Limerick.
16 It consists of photographs at various -- at all elevations
17 within the drywell, and provides various views of the
18 complexity, congestion, access to those items as they are
19 upon completion of that work.

20 MR. HALL: Are these photographs true and correct
21 reflections of the conditions in the drywell, and are they
22 in fact photographs of the drywell as you have stated?

23 WITNESS CLAREY: Yes, they are.

24 MR. HALL: Mr. Coughlin, do you have before you two
25 documents, those being identified in their right-hand corners

1 as PECO Statement Number 33 and PECO Statement Number 33A?

2 WITNESS COUGHLIN: Yes, I do.

3 MR. HALL: Referring to PECO Statement Number 33,
4 which is entitled "Rebuttal Testimony of James R. Coughlin,"
5 being a document of some 24 pages with one schedule, is this
6 in fact your rebuttal testimony prepared for use in this
7 proceeding?

8 WITNESS COUGHLIN: Yes, it is.

9 MR. HALL: Do you have any corrections to make to
10 that document at this time?

11 WITNESS COUGHLIN: Yes, I do. I have one. On page
12 9, line 25, where it says "accomplished by adding 2 months,"
13 that should be "3."

14 At the end of that line "4.5" should be changed to
15 "4."

16 At the following line, line 27, where it says
17 "one month," it should be "one-half."

18 That completes the correction.

19 MR. HALL: With that correction, Mr. Coughlin, is
20 in fact your PECO Statement Number 33 true and correct in
21 terms of the information and data that it contains?

22 WITNESS COUGHLIN: Yes, sir.

23 JUDGE MATUSCHAK: I didn't get that correction.
24 What was the correction?

25 WITNESS COUGHLIN: Would you like me to repeat it?

1 JUDGE MATUSCHAK: Yes.

2 WITNESS COUGHLIN: At page 9, line 25, the figure
3 "2" should be "3," and the figure "4.5" should be "4." On
4 the following line of printed matter starting on line 27
5 "one month" should be "one-half."

6 JUDGE MATUSCHAK: "Half" or "one-half"?

7 WITNESS COUGHLIN: "One-half."

8 MR. HALL: Mr. Coughlin, referring you to the
9 document identified as PECO Statement Number 33A, identi-
10 fied as the sur-surrebuttal testimony of James R. Coughlin,
11 being a document of some ten pages in length, is this
12 document in fact your prepared sur-surrebuttal testimony
13 for use in this proceeding?

14 WITNESS COUGHLIN: Yes, it is.

15 MR. HALL: Do you have any corrections to make to
16 this document at this time?

17 WITNESS COUGHLIN: Yes, I do. There is one on page
18 4, line 5, the last word, instead of "corrections," it would
19 more properly be "correctness."

20 That is the only correction.

21 MR. HALL: Mr. Coughlin, with that correction is the
22 data and information provided in PECO Statement Number 33A
23 true and correct to the best of your knowledge and belief?

24 WITNESS COUGHLIN: Yes, it is.

25 MR. HALL: Mr. Coughlin, do you have before you the

1 documents which Mr. Clarey has previously described, being
2 PECO Exhibits JJC-1/JRC-1 and PECO Exhibit JJC-2/JRC-2?

3 WITNESS COUGHLIN: Yes, I do.

4 MR. HALL: Could you state your contribution to the
5 preparation of these documents?

6 WITNESS COUGHLIN: Yes. I worked with the Phila-
7 delphia Electric personnel in the assembly of the informa-
8 tion contained in the documents, and supervised a small
9 group of Bechtel people who participated in the development
10 study.

11 MR. HALL: Mr. Coughlin, is the data and information
12 that you have provided for use in this study and which is
13 contained in PECO Exhibits JJC-1/JRC-1 and JJC-2/JRC-2 true
14 and correct to the best of your knowledge and belief?

15 WITNESS COUGHLIN: Yes, it is.

16 MR. HALL: Finally, Mr. Coughlin, do you have before
17 you a document entitled PECO Exhibit JRC-2?

18 WITNESS COUGHLIN: Yes, I do.

19 I must say something. We have a correction to make
20 on those previous exhibits.

21 MR. HALL: I'm sorry. Would you make that correction
22 at this time?

23 WITNESS COUGHLIN: Yes. On JJC-2/JRC-2 at page 7,
24 line 8, the sentence which begins "Similar calculations"
25 should be corrected to read "The results of similar

1 calculations."

2 MR. HALL: Mr. Coughlin, I don't believe the exhibit
3 has page numbers. Flipping back, I take it it is the seventh
4 typed page; at the bottom it has a chart, "Containment, Peak,
5 Manpower, Density, Forecast 7"?

6 WITNESS COUGHLIN: That's correct.

7 MR. HALL: Would you restate the correction that you
8 are making at lines 7 to 8?

9 WITNESS COUGHLIN: Yes. The sentence which begins
10 "Similar calculations" should be changed to read "The results
11 of similar calculations" etectera.

12 MR. HALL: Mr. Coughlin, referring you to PECO
13 Exhibit JRC-2 --

14 WITNESS COUGHLIN: Again may I hasten to interrupt.
15 In Exhibit JJC-1/JRC-1 that contains several large drawings
16 which are a reflection of the network that was created in
17 our various case load studies. There is one activity that
18 needs to be added to each of those drawings.

19 MR. HALL: Would you briefly describe what that
20 activity is?

21 WITNESS COUGHLIN: That activity is titled "Comple-
22 tion of the RPV lift rig and test." It would have a
23 duration of 7.6 weeks; it would have predecessor activity
24 of the completion of lifts 4 and 5; and it itself would
25 restrain the setting of the RPV.

1 MR. HALL: Does that activity add to the critical
2 path which you have shown in PECO Exhibit JJC-1/JRC-1 or
3 delay the completion dates that you have reported in your
4 prepared rebuttal testimony?

5 WITNESS COUGHLIN: It does not delay the completion
6 dates; it is in fact parallel to the previously defined
7 path. It does not change the final result in any way.

8 MR. HALL: Have you done a thorough analysis of PECO
9 Exhibit JJC-1/JRC-1 to see if there are now additional
10 corrections that need to be made at this time?

11 WITNESS COUGHLIN: Yes, I have, and it is correct.

12 MR. HALL: Referring to PECO Exhibit JRC-2, Mr.
13 Coughlin, could you describe very briefly for the record
14 what is contained in that document?

15 WITNESS COUGHLIN: That document contains what we
16 call a parametric study that corrects the Susquehanna plant
17 schedule for the impact of Limerick quantities.

18 MR. HALL: Is the data contained in that document
19 true and correct to the best of your knowledge and belief?

20 WITNESS COUGHLIN: Yes, it is.

21 MR. HALL: Your Honor, I would ask that there be
22 identified for use in this record the statements of Mr.
23 Clarey as PECO Statement Number 4A, PECO Statement Number
24 4B and PECO Statement Number 4C, the rebuttal statement of
25 Mr. Coughlin as PECO Statement Number 33 and the sur-surebuttal

1 testimony as PECO Statement Number 33A, and that the exhibits
2 be identified in the manner in which I have described and
3 discussed with the witnesses, and that these documents be
4 admitted into evidence in the proceeding.

5 JUDGE MATUSCHAK: Subject to any timely objections
6 or motions to strike.

7 Do you have any objection?

8 MR. WERSAN: Yes, Your Honor. With respect to PECO
9 Statement Number 33A, the sur-surrebuttal testimony of James
10 R. Coughlin, starting at page 1, line 27 through page 3,
11 line 41 in his sur-surrebuttal testimony Mr. Coughlin
12 discusses what he believes to be the qualifications of Mr.
13 O'Brien. I believe Mr. O'Brien's qualifications were
14 presented in his direct testimony, and if there had been
15 any attack by the company on those qualifications, at a
16 minimum it should have been done on rebuttal, and
17 certainly not the subject of sur-surrebuttal testimony.

18 MR. HALL: Your Honor, the company presents this
19 material not as a direct attack on Mr. O'Brien's direct
20 testimony, but rather to contrast the qualifications and
21 experience of the Bechtel Power Corporation, who has done
22 the company's schedule analysis in this proceeding, with
23 the qualifications of Mr. O'Brien and OKA.

24 The material is presented here because Mr. O'Brien
25 in his surrebuttal testimony has in fact quite often

1 referenced his purported qualifications with regard to his
 2 construction management experience and expertise in
 3 seeking to evaluate the company's analyses and to argue that
 4 they are inappropriate and should be rejected by Your Honor.

5 The company seeks to respond to that material
 6 presented for the first time in surrebuttal here by showing
 7 the comparison between the organization that we have had
 8 perform our schedule analysis and that which has been
 9 provided by the Consumer Advocate.

10 MR. WERSAN: Your Honor, I would note on page 2 that
 11 Mr. Coughlin refers to Mr. O'Brien's direct testimony in
 12 his discussion of the Engineering News Record. In fact,
 13 Mr. Hall cross-examined Mr. O'Brien on the Engineering News
 14 Record. I really don't believe that is a proper issue to
 15 go into sur-surrebuttal testimony.

16 JUDGE MATUSCHAK: Which page is that on?

17 MR. HALL: Your Honor, I would agree that indeed
 18 Mr. Coughlin in presenting his analysis has used all of the
 19 information that was available to him, including the
 20 Engineering News Record material. However, the purpose of
 21 the analysis is as I have stated, to contrast the qualifica-
 22 tions of Mr. O'Brien's organization and the Bechtel organiza-
 23 tion. That is in fact an appropriate purpose for sur-
 24 surrebuttal testimony, and simply because material has been
 25 referenced earlier in the proceeding does not deny it the

1 ability to be provided for an appropriate purpose in sur-
2 surrebuttal.

3 JUDGE MATUSCHAK: We think the reference does not
4 attack the qualifications, but is attacking the weight to
5 be given to Mr. O'Brien's testimony. We will overrule the
6 objection.

7 MR. HALL: Your Honor, Mr. Clarey and Mr. Coughlin
8 are available for cross-examination.

9 JUDGE MATUSCHAK: I didn't finish admitting your
10 testimony.

11 MR. HALL: I'm sorry, Your Honor. I would ask that
12 all of the testimony and the exhibit be admitted into the
13 record subject to any appropriate motions to strike.

14 JUDGE MATUSCHAK: The motion is granted.

15 (Whereupon, the documents were
16 marked as PECO Statements Nos.
17 4A, 4B, 4C, 33 and 33A, and PECO
18 Exhibits Nos. JJC-1/JRC-1,
JJC-2/JRC-2, JJC-2 and JRC-2 for
identification and were received
in evidence.)

19 JUDGE MATUSCHAK: We will take a ten minute recess.

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

MS. CHESTNUT: Thank you, Your Honor.

CROSS-EXAMINATION

MS. CHESTNUT: Good morning, gentlemen.

WITNESS CLAREY: Good morning.

WITNESS COUGHLIN: Good morning.

MS. CHESTNUT: Mr. Clarey, I have a few questions for you with respect to PECO Statement No. 4B.

At page 2 of that statement you make the assertion that "Mr. Dougherty's entire analysis is based upon imprecise approximations and unsupported assumptions;" is that correct?

WITNESS CLAREY: On which line was that, ma'am, please?

MS. CHESTNUT: That begins at line 19, and that is Statement No. 4B dated March 11, 1986.

WITNESS CLAREY: And the page again?

MS. CHESTNUT: Page 2.

WITNESS CLAREY: Yes, ma'am.

MS. CHESTNUT: Isn't it correct, Mr. Clarey, that the costs which form the basis of Staff's adjustment were taken directly from the company's books?

WITNESS CLAREY: That's correct.

MS. CHESTNUT: And you don't disagree, do you, Mr. Clarey, that the escalation identified by Staff as

1 having occurred from the period April '81 through October
2 '84 actually occurred?

3 WITNESS CLAREY: That's true.

4 MS. CHESTNUT: Mr. Clarey, another criticism that
5 you have of the Staff's presentation refers to the period
6 required for power ascension testing; is that correct?

7 WITNESS CLAREY: Yes.

8 MS. CHESTNUT: When you use "power ascension test-
9 ing," am I correct that you are referring to the period
10 between the date of the fuel load and commercial operation?

11 WITNESS CLAREY: That's true.

12 MS. CHESTNUT: And that is not the same as the term
13 "pre-commercial testing," pre-commercial testing incorporates
14 other activities that can be done prior to load of fuel?

15 WITNESS CLAREY: I'm sorry, I don't think pre-
16 commercial testing -- I would think that pre-commercial
17 testing and power ascension would be similar periods.

18 MS. CHESTNUT: If you want to use those terms inter-
19 changeably, that's fine; I just wanted to clarify what you
20 meant by them.

21 WITNESS CLAREY: I'm sorry; you're saying did I use
22 that term?

23 MS. CHESTNUT: I'm not sure if you do or other
24 witnesses do. I just wanted to make sure that I know what
25 we're talking about here.

1 WITNESS CLAREY: The contrasting term in my mind
2 would be the startup testing period which occurs prior to
3 fuel load; so there is that period before fuel load, and
4 then between fuel load and commercial operation would be
5 power ascension -- it has several names, but power ascension
6 -- but pre-commercial testing, unless I -- if you would
7 show me where I have used it, I would intend it to be
8 after fuel load and before commercial operation.

9 MS. CHESTNUT: That's fine, Mr. Clarey.

10 Am I correct that it is your opinion that
11 Mr. Dougherty should have known that after the NRC licensing
12 requirements were increased dramatically after 1976, that
13 six months would not be a long enough period for that?

14 WITNESS CLAREY: Yes; I think that's the case with
15 the entire presentation, both the --

16 MS. CHESTNUT: Let's just talk about power ascension
17 testing.

18 WITNESS CLAREY: Sure.

19 MS. CHESTNUT: And that he certainly should have
20 realized that six months was not long enough in the
21 immediate aftermath of the TMI-1 accident; is that correct?

22 WITNESS CLAREY: Yes, in the later era post-TMI.

23 MS. CHESTNUT: Mr. Clarey, are you familiar with the
24 bimonthly reports submitted by the company to the Commission?

25 WITNESS CLAREY: In general terms I am, yes.

1 MS. CHESTNUT: Do you have those reports with you?

2 WITNESS CLAREY: No, I do not.

3 MS. CHESTNUT: I just happen to have them here.

4 You are familiar with the purpose of these, which
5 was to provide information to the Commission concerning the
6 status of the Limerick project?

7 WITNESS CLAREY: Yes; cost and schedule status, I
8 think it is.

9 MS. CHESTNUT: Yes; various milestones in terms of
10 construction and costs are identified, and the company's
11 progress was reported in these reports.

12 WITNESS CLAREY: Yes.

13 MS. CHESTNUT: I would like to show you the No. 1
14 Bimonthly Report, Mr. Clarey, and give you a minute to
15 familiarize yourself with it. That is my only copy.

16 (Document handed to Witness Clarey.)

17 (Pause.)

18 WITNESS CLAREY: I have looked at it in general.

19 MS. CHESTNUT: Mr. Clarey, when was that Bimonthly
20 Report No. 1 submitted to the Commission?

21 WITNESS CLAREY: The date of the transmittal letter
22 is May 31, 1984.

23 MS. CHESTNUT: I would like to refer you to Section
24 3, Table B. Am I correct that that shows the scheduled
25 milestones and the anticipated dates for meeting those

1 milestones?

2 WITNESS CLAREY: Yes.

3 MS. CHESTNUT: Can you tell us what that schedule
4 shows for the item "load nuclear fuel into reactor"?

5 WITNESS CLAREY: "Load nuclear fuel into the reactor"
6 shows a mark of an "x" under the column headed "September/
7 October."

8 MS. CHESTNUT: When is commercial operation for
9 Unit No. 1 and common scheduled on that?

10 WITNESS CLAREY: Again, it is in the column headed
11 -- it is in the column headed "March/April."

12 MS. CHESTNUT: What period of time is that between
13 those two dates?

14 WITNESS CLAREY: September to April would be what,
15 eight months?

16 MS. CHESTNUT: So the period six to eight months,
17 since it is in two-month increments?

18 WITNESS CLAREY: Yes.

19 MS. CHESTNUT: Mr. Clarey, I would like to show you
20 Bimonthly Report No. 2, which you will agree is formatted the
21 same as Bimonthly Report No. 1?

22 (Document handed to Witness Clarey.)

23 WITNESS CLAREY: Yes, it appears to be.

24 MS. CHESTNUT: What is the date of submittal of that
25 report?

1 WITNESS CLAREY: Again, the transmittal letter is
2 July 31, 1984.

3 MS. CHESTNUT: I would like to refer you to Section
4 3, Table B, also.

5 WITNESS CLAREY: Yes.

6 MS. CHESTNUT: What is the date shown there for
7 "load nuclear fuel into reactor"?

8 WITNESS CLAREY: Again, it looks like it's under
9 the column headed "September/October."

10 MS. CHESTNUT: How about commercial operation for
11 Unit No. 1 and common?

12 WITNESS CLAREY: It looks like it's under the same
13 column, basically, "March/April."

14 MS. CHESTNUT: I would like to show you Bimonthly
15 Report No. 3, Mr. Clarey. What date was that submitted to
16 the Commission?

17 (Document handed to Witness Clarey.)

18 WITNESS CLAREY: September 28, 1984.

19 MS. CHESTNUT: Referring you to the same Table B of
20 Section 3, can you tell us what the date for fuel load is?

21 WITNESS CLAREY: September/October.

22 MS. CHESTNUT: How about commercial operation?

23 WITNESS CLAREY: In March/April 1985.

24 MS. CHESTNUT: I would like to show you Bimonthly
25 Report No. 4, Mr. Clarey. Can you tell us what date that

1 was submitted to the Commission?

2 (Document handed to Witness Clarey.)

3 WITNESS CLAREY: November 30, 1984.

4 MS. CHESTNUT: Referring you to Table B, Section 3,
5 what date does that have for fuel load?

6 WITNESS CLAREY: "Load fuel into reactor" is com-
7 plete November 13.

8 MS. CHESTNUT: What is the date for commercial
9 operation?

10 WITNESS CLAREY: It is forecast under the column
11 "July/September."

12 MS. CHESTNUT: I would like to show you Bimonthly
13 Report No. 5, Mr. Clarey. What date was that submitted to
14 the Commission.

15 (Document handed to Witness Clarey.)

16 WITNESS CLAREY: January 31, 1985.

17 MS. CHESTNUT: That shows an actual date for fuel
18 load, doesn't it, on Table B of Section 3?

19 WITNESS CLAREY: "Load fuel into reactor" -- the
20 previous report, I guess, had the date. This is actual
21 under the column "November/December."

22 MS. CHESTNUT: How about commercial operation?

23 WITNESS CLAREY: Under "July/September '85."

24 MS. CHESTNUT: Now, Mr. Clarey, I would like to re-
25 fer you to Exhibit JJC-2, which is the collection of

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1 photographs depicting conditions in the drywell.

2 Do you have that?

3 WITNESS CLAREY: Yes.

4 MS. CHESTNUT: Mr. Clarey, in the first page of
5 that exhibit you say that "The purpose of this collection
6 is to illustrate the substantial additional commodities
7 which had to be installed in order to construct a licensable
8 plant;" is that correct?

9 WITNESS CLAREY: Yes.

10 MS. CHESTNUT: When you say "licensable," you mean
11 licensed by the NRC?

12 WITNESS CLAREY: Yes.

13 MS. CHESTNUT: And you specifically note that the
14 substantial additional commodities are large and small
15 pipe, pipe hangers, cable tray and conduit; is that correct?

16 WITNESS CLAREY: Yes, it is.

17 MS. CHESTNUT: Can you show us which of these pic-
18 tures, Mr. Clarey, show cable tray? -- First off,
19 Mr. Clarey, you know what cable tray is, I assume?

20 WITNESS CLAREY: Yes, I do.

21 (Witness Clarey perusing document.)

22 WITNESS CLAREY: Because of the congestion, it is
23 very difficult, but -- it looks like the pages aren't
24 identified, so I would go with the 11th plastic-enclosed
25 page opened to your left, the bottom photograph. The

1 bottom photograph shows a run of cable tray. It is a more
2 open view there, and so the tray is visible, the tray
3 principally being back toward the wall of the drywell.

4 MS. CHESTNUT: It's the thing that looks like a
5 ladder, right?

6 WITNESS CLAREY: Yes, to the left side of the
7 photograph. A lot of conduit is available, but that's the
8 only run of cable tray I saw.

9 MS. CHESTNUT: Is that cable tray safety-related?

10 WITNESS CLAREY: In the drywell I would presume so,
11 but I really can't answer absolutely. It would be required
12 to be seismically supported and so forth; but the cables
13 within, I really can't say what those cables are. I pre-
14 sume some kind of instrumentation associated with the
15 reactor process.

16 MS. CHESTNUT: And that is the only picture you can
17 find that shows a cable tray?

18 WITNESS CLAREY: Yes. I say that because of the
19 congestion, that's the only one I saw as I went through.

20 MS. CHESTNUT: Were you able to find any examples
21 of safety-related conduit?

22 WITNESS CLAREY: Yes, there are many, many examples
23 of safety-related conduit. Many, many photographs contain
24 conduit.

25 MS. CHESTNUT: Safety-related conduit, Mr. Clarey?

1 WITNESS CLAREY: Again, being in the drywell, I be-
2 lieve all or a great majority of it would be. I cannot
3 specifically identify these conduits from the photographs
4 and tell you so.

5 MS. CHESTNUT: Now, I am correct, am I not,
6 Mr. Clarey, that safety-related tray and conduit is marked
7 as either red, blue, green or brown; is that correct?

8 WITNESS CLAREY: They are identifiers for the
9 channels, yes.

10 MS. CHESTNUT: And non-safety-related is black and
11 white?

12 WITNESS CLAREY: Yes. The issue of safety-related
13 or not is really a matter of terminology. That is not the
14 thrust of what is being presented here. The thrust is the
15 complexity and the amount of commodities being installed,
16 and being installed within the drywell they fall under the
17 purview of the NRC quality assurance regulations and those
18 of the company.

19 MS. CHESTNUT: Now, Mr. Clarey, going back two pages
20 from the pictures you identified previously, opening to the
21 eighth page.

22 WITNESS CLAREY: Eighth from the --

23 MS. CHESTNUT: The eighth from the front.

24 WITNESS CLAREY: Eight leaves I have.

25 MS. CHESTNUT: The bottom right photograph which

1 shows the duct -- are you on the right photograph?

2 WITNESS CLAREY: Yes; it is the two vertical, round
3 stainless steel covered pipes?

4 MR. HALL: Yes.

5 MS. CHESTNUT: This (indicating).

6 WITNESS CLAREY: Okay; here we are.

7 MS. CHESTNUT: Are we on the same photograph,
8 Mr. Clarey?

9 WITNESS CLAREY: Yes.

10 MS. CHESTNUT: Am I correct that the conduit shown
11 in that photograph is marked black and white?

12 WITNESS CLAREY: The background color is the iden-
13 tifying color, and it appears to be white. I can say my
14 memory is that red, white, blue and green are the four
15 safeguard channels electrically.

16 MS. CHESTNUT: Aren't the four safety-related colors,
17 Mr. Clarey, red, blue, green and brown? And Mr. Sproat
18 testified last week that white is non-safety-related?

19 WITNESS CLAREY: I don't recall that.

20 MS. CHESTNUT: Thank you. I have no further
21 questions at this time, Your Honor.

22 MR. WERSAN: Thank you, Your Honor.

23 CROSS-EXAMINATION

24 MR. WERSAN: Good morning, gentlemen.

25 WITNESS CLAREY: Good morning.

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1 WITNESS COUGHLIN: Good morning.

2 MR. WERSAN: First for Mr. Clarey: you would agree
3 with me that in your testimony identified as Statement 4C,
4 you discuss quantification of some costs of the plant, you
5 discuss manhours, et cetera, and you discuss discovery and
6 discovery sessions conducted by the Office of Consumer
7 Advocate during this case; is that correct?

8 WITNESS CLAREY: I recall the last Q&A asks about
9 the discovery process; yes, to that. There are other dis-
10 cussions about PECO costs or indirect costs.

11 Is there something more specific I --

12 MR. WERSAN: No. I was just sort of raising that as
13 an introductory question to get the field of where I'm
14 going. You discuss identification of costs, both PECO and
15 Bechtel costs, and you also discuss information that was
16 made available through discovery in your statement.

17 Your Honor, at this time I would like to identify as
18 Office of Consumer Advocate Exhibit No. 89, the company
19 answers to three interrogatories posed by the Office of
20 Consumer Advocate; the first being DR-OCA-6-1; the second
21 is DR-OCA-7-2; and the third is DR-OCA-4-8.

22 JUDGE MATUSCHAK: So marked.

23 (Whereupon, the documents were
24 marked as OCA Exhibit No. 89 for
identification.)

25 MR. WERSAN: Do you recognize any of these responses,

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1 Mr. Clarey?

(Witness Clarey perusing documents.)

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3 WITNESS CLAREY: I think I have read them somewhere
4 in the past.

5 MR. WERSAN: If I refer you first to the answer to
6 DR-OCA-6-1, would you agree with me that the company was
7 requested to provide actual total Bectel Power Corporation
8 costs for Limerick 1 and Common on either an annual or a
9 semi-annual basis; and the answer was that "Actual BPC
10 costs for Limerick 1 and Common on either an annual or a
11 semi-annual basis are not available. These costs were
12 tracked on a total project basis, that is, with Unit 1,
13 Common and Unit 2 combined"?

14 WITNESS CLAREY: Yes; that was the practice through
15 a significant portion of the project.

16 MR. WERSAN: With respect to the answer on DR-OCA-7-2,
17 where further information was requested about the answer in
18 DR-OCA-6-1, the company continued to state that the actual
19 project expenditures were not available on an annual or a
20 semi-annual basis, and that the estimating process used to
21 develop the answer at 6-2-A as referred to in the question
22 did not require a further breakdown of annual expenditures
23 into the requested Bechtel and PECO expenditures categories;
24 is that correct?

25 I am reading from the middle paragraph of 7-2.

1 WITNESS CLAREY: I see that, yes.

2 MR. WERSAN: And in the answer to DR-OCA-4-8, questions
3 were asked regarding a weekly listing, by craft, of data for
4 Unit 1 and 2 separately, and requested regular hours and
5 premium hours and also earnings, regular and premium, and
6 the company stated the information is only available on a
7 combined basis, meaning for both Unit 1 and Unit 2?

8 WITNESS CLAREY: Yes; that's what it says.

9 MR. WERSAN: I take it somewhere along the way the
10 company did some kind of an estimating process to divide
11 costs on an annual basis and divide manhours on an annual
12 basis between Unit 1 and Common and Unit 2?

13 MR. HALL: Do you have a reference, Mr. Wersan?

14 MR. WERSAN: No. I am asking if that actually
15 occurred.

16 MR. HALL: Do we have that data, Mr. Clarey?

17 WITNESS CLAREY: My memory is that unitized data was
18 not kept until -- or the separation was not made until
19 around Forecast 6, which would be the '81-'82 time frame,
20 as I recall.

21 Prior to that the costs had been forecast and the
22 project costs had been kept on a total project basis.

23 MR. WERSAN: And that would also be the case for
24 manhours?

25 WITNESS CLAREY: To the best of my memory. I'm

1 sorry; are we in panel here, or are you addressing --

2 MR. WERSAN: If Mr. Coughlin has information on that
3 question, he can answer.

4 WITNESS COUGHLIN: In the early phases of the pro-
5 ject there was not a record-keeping process which separated
6 costs for the unit; that's correct.

7 The systems that were set up to track costs on a
8 weekly, monthly or periodic basis by unit was established
9 approximately, my recollection is, in early-'81, or late-
10 '81; somewhere in that period.

11 Subsequent to that there were some studies done to
12 separate the costs of the units on a total-to-date basis.
13 Those studies I don't have with me. My recollection is
14 they were '82-'83 time frame; I cannot be more specific as
15 to when they were done at this point.

16 For the purposes of the analyses that was presented
17 here, the to-date information that was taken or was done at
18 that time period, we had to go back and take a look at, try
19 to segregate what costs had been collected on a total plant
20 basis.

21 That was a considerable amount of work. It was done
22 on the basis of quantities that we do have records of be-
23 tween the two plants. There were none -- there are no
24 records and there still exists no records to date by craft,
25 since that was not a central issue here on a biweekly basis,

1 but rather where the hours were charged and how they were
2 charged on an account structure basis.

3 MR. WERSAN: Mr. Coughlin, I guess I would like to
4 address this question to you. I'm sorry; there are so
5 many documents it takes me a minute to find them.

6 (Pause.)

7 MR. WERSAN: In your sur-surrebuttal testimony,
8 Statement 33A, at page 5, line 27, you are discussing the
9 379 man density level required to achieve the July 1982
10 schedule shown in your Case 1 analysis as you developed it,
11 based upon JJO'B-13; is that correct?

12 WITNESS COUGHLIN: That's correct.

13 MR. WERSAN: If I could at the same time refer you
14 to Schedule 3, Chart 1, of PECO Exhibit JJC-2/JRC-2.

15 Just so you recognize where I'm going, it looks
16 like this; a little picture of the containment and a bell
17 curve.

18 At the top it says "Sustained maximum manpower level
19 required for containment for OKA 7/82 fuel load." Do you
20 have that?

21 WITNESS COUGHLIN: Yes, sir.

22 MR. WERSAN: Would I be correct that you developed
23 the 379 man density level based upon what is in this Chart 1?

24 WITNESS COUGHLIN: Yes. Chart 1 is a depiction of
25 that.

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1 MR. WERSAN: In effect, the way to get to 379 would
2 be to take the total containment manhours of 2,598,000,
3 divide that by 171 weeks and also by 40 hours per week,
4 and you will get 379?

5 WITNESS COUGHLIN: You should, yes.

6 MR. WERSAN: Would you agree that the 171 weeks
7 that you have on Chart 1 is derived from your Case 1
8 analysis presented in your testimony?

9 WITNESS COUGHLIN: Would you please restate that
10 again? I'm sorry.

11 MR. WERSAN: Yes. Would you agree that the 171 weeks
12 of total containment is based upon your Case 1 analysis
13 that you have presented in your rebuttal testimony?

14 WITNESS COUGHLIN: Yes, I would; that does reflect
15 the adjustments we made to Mr. O'Brien's submittal.

16 MR. WERSAN: That's right.

17 Do you know the length of time or the number of
18 weeks that Mr. O'Brien's Schedule JJO'B-13 allowed to reach
19 fuel load for July 1982 without your adjustment?

20 WITNESS COUGHLIN: The comparable duration in his
21 schedule? I am working from memory. I believe it was 180.

22 MR. WERSAN: Will you accept, subject to check,
23 that to reach a July '82 fuel load there are available 231
24 weeks in Mr. O'Brien's JJO'B-13?

25 WITNESS COUGHLIN: I would not accept it without

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1 a verification.

2 MR. WERSAN: Mr. O'Brien will be on the stand later.
3 I can ask him that question.

4 WITNESS COUGHLIN: Very well.

5 MR. WERSAN: Accepting hypothetically that there are
6 231 weeks available in Mr. O'Brien's analysis, if we then
7 go back to the original calculation of dividing the
8 2,598,000 manhours by 231 weeks and 40 hours per week,
9 would you accept that the math gives you 284 men or man-
10 power density level?

11 WITNESS COUGHLIN: Again, assuming the arithmetic
12 is --

13 MR. WERSAN: Maybe I could have you just check the
14 arithmetic so that we don't have just an assumption on the
15 record, or would you accept that subject to check?

16 WITNESS COUGHLIN: Subject to check is fine.

17 MR. WERSAN: Now, on page 8 of your sur-surrebuttal
18 testimony you discuss your Limerick/Susquehanna schedule
19 comparison; is that correct?

20 WITNESS COUGHLIN: Yes; that's correct.

21 MR. WERSAN: At line 32, you state, "First of all,
22 the term mobilization in this context includes a myriad of
23 activities and is meant to include all work done at the site
24 up to the point where the structural concrete is 10% complete;
25 is that correct?"

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WITNESS COUGHLIN: Yes.

MR. WERSAN: Now, if we could look at PECO Exhibit JRC-2, which is your Susquehanna schedule and the foldout, or we can just talk about it and you can use it for reference. Would you agree that in that schedule you had Susquehanna receive its construction permit on June 21, 1974 for purposes of your comparison?

WITNESS COUGHLIN: Yes, I would.

MR. WERSAN: Now, that, of course, is not the actual Susquehanna construction permit date, but the one you started with.

WITNESS COUGHLIN: Yes.

MR. WERSAN: Why did you pick June 21, 1974?

WITNESS COUGHLIN: Because the intent of this is to try and see one, what the Susquehanna schedule would have been in the hypothetical case if they had had to build Limerick quantities or commodities, and to display that information on a time frame calendar that was comparable then to the Limerick time frame. So that required the adjustment in the construction permit date.

MR. WERSAN: Would you agree with me that you started off your schedule in Susquehanna with a 13-month mobilization period and then a one-month additional extension for an operating engineer strike before you reached ten percent complete for structural concrete?

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1 WITNESS COUGHLIN: Yes, I would.

2 MR. WERSAN: And the date on which you had Susque-
3 hanna reach ten percent structural concrete complete was
4 September 1, 1975 in your analysis; is that correct?

5 WITNESS COUGHLIN: That's correct.

6 MR. WERSAN: Would you agree that Limerick 1's
7 actual ten percent concrete level was achieved in October
8 of 1974, or almost a year earlier than your hypothetical
9 Susquehanna schedule?

10 WITNESS COUGHLIN: Yes, sir, I would.

11 MR. WERSAN: Mr. Coughlin, I take it you are still
12 working for Bechtel Power Corporation on the Limerick
13 project; is that correct?

14 WITNESS COUGHLIN: That's correct.

15 MR. WERSAN: And that means you are working not
16 only on this case, but on the Limerick 2 construction; is
17 that correct?

18 WITNESS COUGHLIN: Yes, that's correct.

19 MR. WERSAN: I take it you are familiar with
20 Limerick Unit 2's projected construction costs and
21 schedules?

22 WITNESS COUGHLIN: Yes, sir.

23 MR. WERSAN: Can you state for me Limerick 2's
24 current construction completion percentage?

25 WITNESS COUGHLIN: Unit 2 current; it's about 30

1 percent.

2 MR. WERSAN: Part of the discussion in this case is
3 based upon Forecast 7, Part 2, which was the company's
4 forecast for Unit 2 as presented in the Limerick 2 investi-
5 gation at Docket I-840381.

6 Do you recall whether or not Unit 2 was represented
7 as 30 percent complete in that forecast?

8 WITNESS COUGHLIN: No, I do not.

9 MR. WERSAN: Would you accept, subject to check,
10 that generally it was referred to as 30 percent complete
11 during the Limerick 2 investigation?

12 WITNESS COUGHLIN: Subject to check, yes.

13 MR. WERSAN: I would like to show you Forecast 7,
14 Part 2, and show you page 25 in that forecast, which
15 discusses schedule development.

16 You might want to take a minute to look at that. I
17 assume you are generally familiar with the forecast docu-
18 ment for Limerick 2.

19 WITNESS COUGHLIN: Yes.

20 MR. WERSAN: Would you agree that in Forecast 7,
21 Part 2, as presented in the Limerick investigation, Bectel
22 and PECO projected that Limerick 2 would take four years
23 and three months to go from 30 percent complete to fuel
24 load?

25 WITNESS COUGHLIN: Yes.

1 MR. WERSAN: In that four year and three month
2 schedule, there was an allowance of three months for con-
3 flicts due to the Limerick 1 refueling activities?

4 WITNESS COUGHLIN: Yes.

5 MR. WERSAN: Would you also agree that that Bechtel
6 forecast for Unit No. 2 showed potential schedules as short
7 as three years and six months, with a 16-month startup
8 duration?

9 WITNESS COUGHLIN: Yes, I would.

10 MR. WERSAN: Would you agree that that schedule was
11 based upon what is called five-eights, which is five
12 eight-hour shifts per week?

13 WITNESS COUGHLIN: Yes.

14 WITNESS CLAREY: Which schedule?

15 MR. WERSAN: Forecast 7, Part 2.

16 WITNESS COUGHLIN: And the associated labor per
17 activity improvements over the first unit that would be
18 required to support that; yes.

19 MR. WERSAN: Right. That was based upon a ten per-
20 cent assumed improvement by the company; is that correct?

21 WITNESS COUGHLIN: Yes.

22 MR. WERSAN: Now I would like to show you a page
23 from PECO Statement No. 8, which was the direct testimony
24 of James Love and Basil Kononetz in this case, and I would
25 like to show you page 26 in which the gentlemen from

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1 Theodore Barry discuss 1978. I will give you a chance to
2 read that.

3 (Witnesses Clarey and Coughlin perusing document.)

4 MR. WERSAN: Would you agree with me that that
5 document states that by the end of 1978, construction com-
6 pletion for Unit 1 and Common was reported at about 47
7 percent?

8 WITNESS COUGHLIN: Yes. That calculation, of
9 course, was done on a base which was significantly differ-
10 ent than what the final manhours were to complete the
11 plant, and if you perform the calculation on that basis
12 you will get a much different number.

13 MR. WERSAN: Do you know what the actual construction
14 completion was at the end of 1978 for Limerick Unit 1?

15 WITNESS COUGHLIN: Based on the actual hours? No,
16 I do not. I would have to go back and perform that
17 calculation.

18 MR. WERSAN: Suppose I show you a page from
19 Mr. Soppet's testimony in the Limerick 2 investigation, his
20 Exhibit CKS-8--do you recall Mr. Soppet was a witness for
21 the company on direct in this case also?

22 WITNESS COUGHLIN: Yes, I do.

23 MR. WERSAN: -- in which he lists the actual percent
24 complete for Unit 1 -- and I would note, without Common --
25 at year-end 1978 of 29 percent? Do you agree with me on

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1 that?

2 (Document shown to Witness Coughlin.)

3 WITNESS COUGHLIN: That is the number that is
4 written there; yes.

5 MR. WERSAN: Would you agree that this was
6 Mr. Soppet's rebuttal testimony in that case?

7 WITNESS COUGHLIN: Yes.

8 MR. HALL: Mr. Wersan, we would request the oppor-
9 tunity to check that number to see if we agree that it is
10 an actual percent complete or not.

11 We can do that today.

12 MR. WERSAN: You can. I would submit that
13 Mr. Soppet did present it as part of his testimony in
14 Limerick 2 as the actual percent complete.

15 MR. HALL: I recognize, Mr. Wersan, that you are
16 representing it as the actual percent complete as quanti-
17 fied by Mr. Soppet. I have not reviewed that testimony --
18 I don't know that -- and neither has Mr. Coughlin here.

19 All we are doing is reserving the right, if Your
20 Honor would permit us, to be able to look at that material
21 and provide a later confirmation or disagreement today if
22 we believe that is appropriate.

23 MR. WERSAN: That's fine. I have no objection to
24 your reviewing what Mr. Soppet stated or whether or not he
25 was accurate in his statement.

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1 Would you agree with me also, Mr. Coughlin, that
2 by the end of 1978, Limerick Unit 1 had already announced
3 two construction completion date deferrals -- let me
4 change that -- by the end of 1978 there had been three
5 announcements, but the ones focused on, I guess, in this
6 case, there was one in 1976 and again one in 1978?

7 WITNESS COUGHLIN: That's correct.

8 MR. WERSAN: So that the actual percent complete by
9 the end of 1978 reflects whatever actual construction was
10 completed under the company's construction program as it
11 went ahead during that time period?

12 WITNESS COUGHLIN: Could you please say that again?

13 MR. WERSAN: Sure. The actual percent complete at
14 the end of 1978 would reflect any construction slowdowns
15 or cash constraints, et cetera, as actually occurred through
16 the time frame up to the end of 1978?

17 WITNESS COUGHLIN: Well, the percent complete number
18 reflects the status of the job at that snapshot in time re-
19 gardless of what history may have transpired prior to that.

20 MR. WERSAN: But, of course, the status of the
21 project reflects the history that has gone on; is that
22 correct?

23 WITNESS COUGHLIN: Yes; that is correct.

24 MR. WERSAN: Mr. Coughlin, as you have stated in
25 your testimony, you work for Bechtel Power Corporation; is

1 that correct?

2 WITNESS COUGHLIN: That's correct.

3 MR. WERSAN: And you were involved in construction
4 of Limerick Unit 1; is that correct?

5 WITNESS COUGHLIN: Yes, I was.

6 MR. WERSAN: And you will also be involved in con-
7 struction of Limerick Unit 2; is that correct?

8 WITNESS COUGHLIN: Yes.

9 MR. WERSAN: You state in your testimony that
10 Bechtel Power Corporation builds many billions of dollars
11 in construction work on nuclear power stations; is that
12 correct?

13 WITNESS COUGHLIN: Yes.

14 MR. WERSAN: Would you agree with me that Bechtel
15 did not have a fixed cost contract in its job at Limerick
16 Unit 1?

17 MR. HALL: Your Honor, objection unless Mr. Wersan
18 can explain how this is related to the sur-surrebuttal
19 testimony or the rebuttal testimony of Mr. Coughlin.

20 Mr. Coughlin has presented here simply his analysis
21 with regard to the schedule of the Limerick plant; that is
22 his particular expertise on the Bechtel project team.

23 We had presented earlier Mr. Soppet, who was the
24 project manager and was involved in contract and financial
25 matters.

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1 MR. WERSAN: Your Honor, just as other witnesses in
2 this case, for example, Mr. Sanders, was asked whether or
3 not his bank or his investment firm was given work by
4 Philadelphia Electric, I believe the nature of the billing
5 arrangement and how Bechtel makes its money is relevant in
6 terms of reviewing the testimony presented by this
7 witness.

8 JUDGE MATUSCHAK: We will overrule the objection.

9 MR. WERSAN: Thank you, Your Honor.

10 Would you agree with me, Mr. Coughlin, that Bechtel
11 did not have a fixed price contract for Limerick Unit 1?

12 WITNESS COUGHLIN: I would agree that we, like our
13 competitors, the other A/Es in this business, have a
14 fixed price contract for this kind of work; yes.

15 MR. WERSAN: I'm sorry; you agreed that you did or
16 did not?

17 WITNESS COUGHLIN: I agree that we did have the same
18 type of contract as was prevalent in the industry at the
19 time it was done; yes. That type of contract was a cost
20 reimbursement contract.

21 MR. WERSAN: I take it that Bechtel was not finan-
22 cially hurt by extending the Limerick 1 schedule beyond the
23 earlier scheduled completion dates, and that whatever work
24 Bechtel did they were reimbursed for?

25 WITNESS COUGHLIN: Whatever work Bechtel did under

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1 this contract was reimbursed. The assertion that somehow
2 we benefit in a larger sense from the problems of the
3 industry I think is very short-sighted in that we would
4 all have a lot more to gain in the total picture of things
5 by good performance; and we certainly are hopefully smart
6 enough to see that.

7 MR. WERSAN: But you would agree with me that
8 Bechtel was not financially hurt by the fact that Limerick
9 took longer to build and cost more than originally
10 projected?

11 WITNESS COUGHLIN: Only in the narrow context of
12 this one contract; yes.

13 MR. WERSAN: The narrow context in that the company
14 paid Bechtel all of its costs plus the overhead assigned to
15 those costs.

16 WITNESS COUGHLIN: That is correct.

17 MR. WERSAN: Is that relationship going to continue
18 for Limerick Unit 2?

19 WITNESS COUGHLIN: There is currently contract
20 negotiations going on for Limerick Unit 2, which I am not
21 in a position to discuss in detail.

22 MR. WERSAN: That's all I have, Your Honor. Thank
23 you.

24 Thank you, gentlemen.

25 JUDGE MATUSCHAK: Any further cross-examination of

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these witnesses?

MR. KLEPPINGER: No, Your Honor.

JUDGE MATUSCHAK: Any redirect?

MR. HALL: Yes, Your Honor; if we could have a few minutes.

JUDGE MATUSCHAK: Very well.

(Recess.)

JUDGE MATUSCHAK: Can we agree on recessing at this time until -- what time?

MR. HALL: An hour-and-a-quarter?

MS. CHESTNUT: Can we make it less, Your Honor? We still have a lot to do today.

JUDGE MATUSCHAK: 1:45.

MR. HALL: Thank you, Your Honor.

(Witnesses temporarily excused.)

(Whereupon, at 12:32 p.m., the hearing was adjourned, to be reconvened at 1:45 p.m., this same day.)

AFTERNOON SESSION

(1:45 p.m.)

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3 JUDGE MATUSCHAK: When you're ready.

4 Before we start, Mr. Hall, Mr. Selkowitz has a
5 preliminary matter.

6 MR. SELKOWITZ: Thank you, Your Honor. Your Honor,
7 there was an on-the-record data request made of Mr. Pollock,
8 who testified on behalf of PAIEUG in this case. In response
9 to that, he provided us under cover of a letter dated
10 February 28, 1986, with a small schedule, which is marked
11 at the top "Data Request UUC/UP-PAIEUG-1," which we would
12 like to make an exhibit in our part of the case.

13 I have discussed this with Mr. Hall, and he has no
14 particular objection. I have discussed it with Mr.
15 Kleppinger, and it is his witness, and I believe he has no
16 objection.

17 I would like to have this marked as UUC/UP Exhibit
18 No. 10A. I am marking it 10A because I have no idea what
19 it is supposed to be marked, but I know none of them are
20 marked "A." I apologize to Your Honor and to the parties,
21 but that's the best I can do on short notice.

22 With that, I will mark it as 10A, and we will
23 distribute it to all of the parties that aren't here today,
24 and ask that it be admitted into evidence.

25 JUDGE MATUSCHAK: Any objection?

1 MR. HALL: No, Your Honor.

2 JUDGE MATUSCHAK: It is stipulated to be offered into
3 evidence without authentication?

4 (No response.)

5 JUDGE MATUSCHAK: Very well. The motion is granted.

6 (Whereupon, the document was
7 marked as UCC/UP Exhibit No.
8 10A for identification, and
9 was received in evidence.)

10 JUDGE MATUSCHAK: You may proceed, Mr. Hall.

11 Whereupon,

12 JAMES J. CLAREY
13 and
14 JAMES R. COUGHLIN

15 having previously been duly sworn, testified further as
16 follows:

17 **REDIRECT EXAMINATION**

18 MR. HALL: Mr. Coughlin, during cross-examination,
19 Mr. Wersan showed you three interrogatory responses which
20 the company had provided to the Office of Consumer Advocate
21 back I believe during the pre-case filing discovery period
22 in 1984, which the company permitted the Advocate.

23 Do you recall those three interrogatory responses?

24 MR. COUGHLIN: Yes. I have them in front of me.

25 MR. HALL: Mr. Coughlin, I believe that Mr. Wersan's
questions were whether you had employed in your analysis
as set forth in Exhibit JJC-1/JRC-1 data which was
requested by the Consumer Advocate in these three

1 interrogatories but which -- and I take this by implication --
2 was not provided to the Advocate by the company.

3 Do you recall that general line of questioning?

4 MR. COUGHLIN: Yes, I do.

5 MR. HALL: Looking at DR-OCA-6-1 and DR-OCA-7-2 as
6 set forth in OCA Exhibit 89, Mr. Coughlin, did you use any
7 data in your analysis as requested in either of these two
8 interrogatories that was not available to Mr. O'Brien and,
9 in fact, used by him in his analysis?

10 MR. COUGHLIN: No, I did not. In fact, I would like
11 to call your attention to page 2-3 of Exhibit JJC-1 /JRC-1
12 which shows the comparison of the different cash flows and
13 total cost for the different cases that we did in our
14 analysis.

15 In fact, the 1971 level cost columns on that sheet
16 you can see do have the same total numbers involved.

17 So the analysis that we performed was an analysis
18 to determine the appropriate schedule for Limerick Unit 1
19 under the scenarios or the assumptions that are listed in our
20 testimony and then to adjust the cash flow to support that.

21 The cash flow adjustments were made at the same level of
22 detail as Mr. O'Brien.

23 MR. HALL: And as I understand it, it was employing
24 the same data that was available and used by Mr. O'Brien?

25 MR. COUGHLIN: That is correct.

1 MR. HALL: Now, referring to the third interrogatory
2 answer contained in OCA Exhibit 89, this interrogatory
3 request asks for certain data related to manhours and
4 earnings of craft laborers; is that correct?

5 MR. COUGHLIN: That is correct.

6 MR. HALL: Could you state generally for me what the
7 answer signifies as you read it?

8 MR. COUGHLIN: The answer signifies that the
9 information is not available in the form or level of detail
10 requested but perhaps could be garnered from going through
11 information that was provided to the firm of Morgan, Lewis
12 and Bockius in their office.

13 MR. HALL: Did you in performing your analysis use
14 any data that was different or in addition to that that was
15 used by Mr. O'Brien?

16 MR. COUGHLIN: We developed a unit split of manhours
17 to separate Unit 1 and Unit 2 manhours and to take the
18 Unit 1 manhours down to the facility level of detail and the
19 type of work, and the performance of that study or analysis
20 was based on the historical information on the job that was
21 available to him.

22 MR. HALL: Was the data that you developed in fact
23 the same as that which is requested in the Items A to D in
24 the OCA interrogatory?

25 MR. COUGHLIN: No, it was not.

1 MR. HALL: When did you develop that data which you
2 did develop, Mr. Coughlin?

3 Mr. COUGHLIN: We developed it basically I guess in
4 the month of January of this year, January and February
5 of this year.

6 MR. HALL: Would I be correct that you developed it
7 from project documentation such as referenced in the answer
8 to this interrogatory?

9 MR. COUGHLIN: Yes, you would be.

10 MR. HALL: Mr. Coughlin, the Consumer Advocate asked
11 you certain questions with respect to a 231-week period and,
12 indeed, I believe he asked whether a certain man density
13 level, craft density level would have been experienced in
14 the dry well if dry well activities had a 231-week period
15 to be completed.

16 Do you recall that series of questions, Mr. Coughlin?

17 MR. COUGHLIN: Yes, I do.

18 MR. HALL: Do you accept the 231-week period as a
19 reasonable period to be used in such an analysis?

20 MR. COUGHLIN: No, I do not. It was based on
21 Mr. O'Brien's base schedule, apparently so, and for reasons
22 which are enumerated in our testimony, we feel that the
23 schedule is flawed and needs to be adjusted for several
24 problems, not the least of which is the start-up period
25 shown which would have a significant impact on that duration.

1 In addition to that, it appears from looking at the
2 schedule that to get to that kind of duration, that number
3 of 231, he would have to include in a pre-startup mode
4 activities for painting of the dry well and direction of
5 the reactor shield.

6 If that, in fact, is correct, I would submit that
7 that is an invalid assumption in that those other activities
8 I just mentioned for the most part preclude other activities
9 going on in parallel such as the mechanical/electrical bulk
10 installation.

11 MR. HALL: Mr. Coughlin, you were also questioned
12 about the possibility and extent of the mobilization of
13 labor at Limerick prior to issuance of the construction
14 permit.

15 Do you recall those questions, sir?

16 MR. COUGHLIN: Yes, I do.

17 MR. HALL: Do you --

18 MR. WERSAN: Your Honor, I don't believe that is
19 correct. I asked about mobilization at Susquehanna based
20 upon his schedule. I asked nothing about mobilization at
21 Limerick 1.

22 MR. HALL: I believe the question was: let's assume
23 that there was mobilization at Susquehanna such as there
24 was at Limerick. How would that affect your Susquehanna-
25 Limerick based analysis?

1 MR. WERSAN: No, I don't believe that was my question.
2 I asked him if he had a mobilization period at Susquehanna 1
3 of a certain length of time and a strike and then a date for
4 10 percent concrete and then asked him to tell me when
5 Limerick 1 reached 10 percent structural concrete complete.
6 That's all I asked him.

7 MR. HALL: My memory, Your Honor, is that there was
8 a question about the possibility of having mobilized earlier
9 at Limerick, and I simply wish to address that question.

10 JUDGE MATUSCHAK: I can't recall, but I think
11 Mr. Wersan is probably right. We will sustain the objection.

12 MR. HALL: Mr. Coughlin, you were provided by
13 Mr. Wersan with a document taken from the Limerick 2
14 investigation record which had been prepared by Mr. Soppet
15 of the Bechtel Power Corporation, and I believe it was
16 represented to you that that document showed a 29 percent
17 completion status for Limerick 1 only excluding common at
18 the end of 1978.

19 Do you recall that series of questions, Mr. Coughlin?

20 MR. COUGHLIN: Yes, I do.

21 MR. HALL: Have you had occasion to examine the
22 29 percent figure and to understand the basis of its
23 calculation?

24 MR. COUGHLIN: No, not really. We have made in the
25 intervening time span an attempt to contact Mr. Soppet and

1 have been unsuccessful. So we are not sure what the number
2 is or the method of calculation. Therefore, I cannot accept
3 it at face value. It appears that it is based on a dollar
4 expenditure level.

5 That, in fact, is not the same basis of the 30 percent
6 number that I referred to for Unit 2 in response to
7 Mr. Wersan's question. If, in fact, what I said is correct
8 that this number is based on dollar expenditures, there is
9 a somewhat different pattern there due to the effects of
10 inflation and whatnot. The expenditure of dollars does not
11 exactly follow necessarily the same pattern as an expendi-
12 ture of manhours on a job. So you can get into an apples
13 and oranges situation.

14 In addition to that, I guess I would like to point out
15 that if, in fact, one were to compare the two unit durations,
16 which apparently Mr. Wersan was trying to do, we do have
17 in the Unit 2 program, as I think you are familiar with,
18 certainly a more aggressive program than Unit 1 primarily
19 because of some assumptions we believe that are very valid
20 to assume for a second unit.

21 There should be and is to be experienced a significant
22 learning curve factor which should make the accomplishment
23 of the task of building a plant considerably more efficient
24 the second time around vis-a-vis the first time around. We
25 have a much higher state of completion of design at the

1 same relative points on Unit 2 as we had on Unit 1.

2 We feel the labor productivity will be significantly
3 improved. The marketplace is much better for that today
4 than it was at that time.

5 So for a lot of reasons we think that the Unit 2
6 program will go at a much faster rate than what Unit 1
7 experienced, and I guess I reject the contention and
8 implication that that projection of good Unit 2 performance
9 then can be used retroactively to evaluate Unit 1's
10 scheduling.

11 MR. HALL: Mr. Coughlin, is it your testimony that
12 you cannot at this point accept the 29 percent figure?

13 MR. WERSAN: Objection. That is a leading question.

14 MR. HALL: It is simply an effort at clarification,
15 Your Honor.

16 JUDGE MATUSCHAK: We will overrule the objection to
17 that.

18 MR. HALL: Mr. Coughlin, simply for clarification,
19 is it your testimony which you just provided that you cannot
20 accept the accuracy or use of the 29 percent figure in this
21 proceeding without further study?

22 MR. COUGHLIN: That's correct.

23 MR. HALL: Mr. Coughlin, you also addressed a second
24 factor, and would I be correct that that is the relevance
25 of the Limerick 2 proposed current schedule for evaluating

1 the possible completion period of Limerick 1?

2 MR. COUGHLIN: That's correct.

3 MR. HALL: Could you restate for me briefly, sir,
4 the specific reasons why it appears that you reject that
5 as a measurement tool?

6 MR. COUGHLIN: The conditions that exist on Unit 2
7 that allow a more expedited completion of Unit 2 did not
8 exist on Unit 1. There is a higher degree of design
9 completion on the second unit. There is an assumption,
10 which I believe is valid, on the amount of regulatory impact
11 to be expected. It will be significantly less on the
12 second unit than it was on the first unit and TMI and
13 others.

14 There is also a projection of a much better labor
15 productivity to be achieved and therefore fewer manhours
16 to complete the plant than there was experienced on
17 Unit 1.

18 For those reasons, I feel the Unit 2 program will
19 be as aggressive as we stated in that case, but I don't
20 believe it is comparable to Unit 1.

21 MR. HALL: That is all the questions I have, Your
22 Honor.

23 JUDGE MATUSCHAK: Anything further?

24 MR. WERSAN: Just one or two questions.
25

CROSS-EXAMINATION

1
2 MR. WERSAN: Mr. Coughlin, with respect to the man-
3 hours that you used to develop your analyses, am I correct
4 that the information at least through -- I'm not sure of
5 the date -- 1982 or 1983 for manhours was on a total station
6 basis?

7 MR. COUGHLIN: It was up through some period in '81,
8 but yes. As collected, yes.

9 MR. WERSAN: So for manhours prior to that date,
10 you had to make some assumption or develop some process by
11 which to allocate manhours to Unit 1, Common and Unit 2; is
12 that correct?

13 MR. COUGHLIN: That is correct.

14 MR. WERSAN: So that is not actual booked manhours
15 as they occurred but your attempt to develop that data
16 retrospectively using your estimates?

17 MR. COUGHLIN: The totals are checked, however, in
18 that we did produce documentation of what the totals were
19 for Unit 1, Common, and Unit 2. So you have check points
20 you have to tie it to.

21 I don't want to give anyone the impression it was
22 very arbitrary. It was not.

23 MR. WERSAN: It was checked by seeing whether or not
24 when you got done, it all added to the right final number;
25 is that correct?

1 MR. COUGHLIN: That is correct.

2 MR. WERSAN: Now, with respect to Mr. Soppet's
3 testimony in the Limerick 2 case, do you have any reason
4 to believe that Mr. Soppet misrepresented or provided
5 incorrect information on the percent complete of Limerick
6 Unit 1 at different times in his testimony?

7 MR. COUGHLIN: I don't believe I said that. I certainly
8 didn't mean to leave the impression if I did. All I said
9 is that I have not been able to contact Mr. Soppet despite
10 good faith efforts to do so and have not been able to
11 verify the calculation methodology of how the assumptions
12 were made.

13 MR. WERSAN: With respect to Unit No. 2 construction
14 in the future, you would agree with me that the assumption
15 on productivity at Unit 2 is that it will be 10 percent
16 better than the productivity on Unit 1?

17 MR. COUGHLIN: Yes.

18 MR. WERSAN: And that the job will be able to be done
19 in the time frame set forth in Forecast 2 based upon five
20 eight-hour shifts per week, meaning not additional second
21 or third shifts or a tremendous amount of overtime, simply
22 normal shifting and normal overtime?

23 MR. COUGHLIN: It is Forecast 7, by the way.

24 MR. WERSAN: Yes.

25 MR. COUGHLIN: I would agree that the program can

1 be accomplished with the assumptions as stated in the
2 forecast. As I recall, and I'm working from memory here,
3 there were some assumptions contained in there for selected
4 second shifting in critical areas and there were also
5 assumptions on overtime percentage probably in the neighbor-
6 hood of 5 percent or something. Within those parameters,
7 yes, I would agree.

8 MR. WERSAN: That's all I have, Your Honor. Thank
9 you.

10 JUDGE MATUSCHAK: Anything further of the witnesses?

11 MR. HALL: Nothing further, Your Honor.

12 MR. WERSAN: Your Honor, if there is nothing further,
13 I would like to move into evidence OCA Exhibit No. 89.

14 MR. HALL: No objection.

15 JUDGE MATUSCHAK: The motion is granted.

16 (Whereupon, the document marked
17 as OCA Exhibit No. 89 was
received in evidence.)

18 (Witnesses excused.)

19 MR. WERSAN: Your Honor, at this time the Office of
20 Consumer Advocate will present Mr. James J. O'Brien. He
21 has been previously sworn.

22 Whereupon,

23 JAMES J. O'BRIEN

24 having previously been duly sworn, testified further as
25 follows:

DIRECT EXAMINATION

1
2 BY MR. WERSAN:

3 Q Mr. O'Brien, could you please state your name
4 and address for the record?

5 A James J. O'Brien. My business address is Two
6 South Centre Street, Merchantville, New Jersey, 08109.

7 MR. WERSAN: Your Honor, at this time I would like
8 to mark for identification as OCA Statement No. 1B a
9 document entitled "Surrebuttal Testimony and Exhibits of
10 James J. O'Brien."

11 JUDGE MATUSCHAK: Very well.

12
13 (Whereupon, the document was
14 marked as OCA Statement No. 1B
15 for identification.)

16 BY MR. WERSAN:

17 Q Mr. O'Brien, do you have before you a document
18 that has now been marked for identification as OCA Statement
19 No. 1B?

20 A Yes, I do.

21 Q Is this document your surrebuttal testimony and
22 exhibits in this proceeding?

23 A Yes, it is.

24 Q Was this document prepared by you or under your
25 direct supervision?

A Yes, it was.

1 Q Mr. O'Brien, do you have any corrections to this
2 document at this time?

3 A Yes, I do. I have several. At page 23, line 6,
4 the installation rate should be changed from "17" to
5 "21 percent."

6 On page 25 at line 16 and line 22, the word
7 "productivity" should be changed to read "installation."

8 At page 26, line 21-22 -- it sort of falls in between--
9 the figure for large pipe hangers should be changed from
10 "plus 17" to read "plus 21 percent."

11 Then at lines 22-23, "Cable Tray and Gutter " should
12 be changed from a "minus 7 percent" to a "minus 6 percent."

13 At page 29, line 3, the word "not" should be added
14 after "would" and before "have." So it reads: "cost at
15 Limerick would not have been incurred if the plant loads
16 had been specified correctly."

17 A final change at page 30 at the bottom of the page,
18 line 26, "8A" should read "31."

19 Those are the only corrections that I have.

20 Q Mr. O'Brien, do you have any additions to your
21 testimony at this time?

22 A Yes, I do.

23 MR. WERSAN: Your Honor, at this time I would like to
24 pass out two documents which I would like to append to
25 Mr. O'Brien's testimony as Exhibit JJO'B-31 and JJO'B-32.

1 Mr. O'Brien will explain the basis for those exhibits.

2 BY MR. WERSAN:

3 Q Mr. O'Brien, referring first to the document
4 that says in the upper right-hand corner "OCA Statement 1B,
5 Exhibit JJO'B-31," will you please explain what this
6 document represents?

7 MR. HALL: Excuse me. Could we get additional copies
8 to provide to our people?

9 MR. WERSAN: Sure.

10 (Documents distributed to PECO personnel by Counsel
11 Wersan.)

12 MR. HALL: Mr. Wersan, can I ask that you make a
13 general offer as to what this document contains before we
14 go through all of the testimony?

15 MR. WERSAN: Yes. I was going to ask Mr. O'Brien to
16 explain what that document shows.

17 MR. HALL: Could we have a statement from you so the
18 company knows whether it wishes to object or not?

19 MR. WERSAN: Your Honor, for Statement 1B, Exhibit
20 JJO'B-31, this is a bar chart schedule comparison to try
21 to put in a picture format the schedules that are being
22 prepared in Mr. O'Brien's testimony in this case.

23 We thought that it might be helpful to put it all on
24 one page so you can see rather than jumping from document
25 to document or from large blueprint to large blueprint.

MR. HALL: And the other document?

1 MR. WERSAN: The second document will be an addition
2 to Mr. O'Brien's testimony discussing manpower density levels
3 and peak density levels as discussed in this case and as
4 discussed by the company in their sur-surrebuttal testimony.
5 Mr. O'Brien will explain exactly what it is that he is
6 presenting and why he believes it supports what he has
7 already stated in his testimony.

8 MR. HALL: Your Honor, I believe looking at the two
9 documents and reflecting on Mr. Wersan's statement, that
10 the second document seems to be a response to the company's
11 sur-surrebuttal statement which I have no objection to as
12 long as we are given a similar opportunity to respond if
13 we deem appropriate. That has been the normal course in
14 the past rate cases.

15 However, the first document seems to be simply a
16 recitation of data already included in the record and not
17 in response to the company's documents at all and I think,
18 therefore, is inappropriate.

19 MR. WERSAN: Your Honor, with respect to the second
20 one, we will let the company put a witness back on if it
21 would like to.

22 To the extent that Exhibit 31 is of help to show
23 what schedules are being compared and doesn't present new
24 information that the company hasn't already seen, I'm not
25 quite sure the basis for the objection.

1 MR. HALL: I think at this time, Your Honor, the
2 presentation of data -- obviously, we would have to examine
3 this, review it. I recognize Mr. Wersan's representation
4 as to what it is, but we would need to examine it, see what
5 other purposes it could be used for in the case.

6 It is not being presented, as I understand it, as
7 a final response to the company's sur-surrebuttal. It is
8 kind of a summation of all of the evidence, and that is
9 inappropriate I believe at this time.

10 JUDGE MATUSCHAK: Mr. Wersan, I think the company
11 counsel has a reasonable objection there since this is the
12 last day of presentation. We will sustain the company's
13 objection as to JJO'B-32.

14 MR. HALL: I believe, Your Honor, the objection went
15 to Exhibit JJO'B-31.

16 JUDGE MATUSCHAK: I beg your pardon?

17 MR. HALL: I think Your Honor mentioned the wrong
18 number. It went to JJO'B-31.

19 JUDGE MATUSCHAK: JJO'B-31, yes; I'm sorry.

20 BY MR. WERSAN:

21 Q. Mr. O'Brien, referring then to Exhibit JJO'B-32,
22 could you please state what it is that you are showing in
23 that exhibit?

24 A. At the top of the page, the typed material is
25 taken directly from Mr. Coughlin's JCC-2/JRC-2 at page 5,

1 and it is a calculation which he made which purports to show
2 that the maximum sustainable manpower in the containment is
3 284, and as part of that, the maximum sustainable in the
4 dry well is 200 men, and at peak could be 300 men. This
5 calculation assumes a day shift and a second shift -- an
6 eight-hour day shift and a second shift manned at two-thirds
7 density.

8 What my first figures show are a scenario that
9 suggests not a maximum, but if I could, he is using up
10 80 hours of the week and there are 168. I start with a
11 maximum effort density wherein I calculate the resulting
12 manpower from two shifts working four days at 10-hour days
13 and then two shifts working a three-day 12-hour day. So
14 you have four shifts in total.

15 Then using this approach, the maximum sustainable in
16 the dry well would be 456 people and at peak as many as
17 684.

18 At the bottom of the page, I compare that with the
19 statement which Mr. Coughlin claims we made using his, I
20 believe, 171 weeks saying that that would mean a sustained
21 manpower in the dry well of 379 and a peak of 566 and
22 through this calculation suggest that the maximum manpower
23 which could be applied to this critical area is in excess
24 of the number which Mr. Coughlin calculates.

25 Going on to page 2, I used part of his scenario saying,

1 "Okay; man the second shifts in each case at two-thirds,"
2 and I do a calculation that shows one shift at four tens,
3 two-thirds of the size of that shift working a second shift
4 at four tens, two weekend shifts made up of three-day
5 weekends, one shift fully manned, the second shift at
6 two-thirds.

7 By the way, when I say "manned," that uses the
8 120 people that Mr. Coughlin says is the maximum single
9 shift sustainable density.

10 I come up with a calculation that says even using
11 only two-thirds of the manpower on the second shifts, you
12 could sustain 390 people and you could peak at 585, and both
13 of these numbers are in excess of the number which
14 Mr. Coughlin says my calculation would demand.

15 Q. Mr. O'Brien, with your corrections and additions
16 to OCA Statement No. 1B, if I were to ask you the questions
17 contained in that document, would your answers be the
18 same as set forth therein?

19 A. Yes.

20 Q. Would those answers be true and correct to the
21 best of your knowledge, information and belief?

22 A. Yes.

23 MR. WERSAN: Your Honor, I have a few additional
24 questions that I would like to ask of Mr. O'Brien.
25

1 JUDGE MATUSCHAK: Do you want to offer this into
2 evidence.

3 MR. WERSAN: Okay; I will offer it at this time.
4 I would like to move into evidence at this time, subject to
5 any motions to strike, OCA Statement No. 1B.

6 MR. HALL: Your Honor, I would like to reserve
7 my right to move to strike this until I've had an
8 opportunity to speak to my people.

9 JUDGE MATUSCHAK: We are going to grant the
10 motion subject to that condition.

11 (Whereupon, the document marked
12 as OCA Statement No. 1B was
13 received in evidence.)
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1 BY MR. WERSAN:

2 Q Mr. O'Brien, regarding the number of weeks
3 allowed in your schedule to reach a fuel load date of
4 July 1982, would you please provide that number for us at
5 this time and explain your derivation?

6 MR. HALL: Your Honor, I am going to object to the
7 continued questioning. I think at this point Mr. Wersan
8 seems to be putting in simply additional direct testimony.
9 There has been no demonstration that this is responsive to
10 the company's sur-sur.

11 As I understand it, Mr. Wersan appears to be seek-
12 ing to develop a new basis, a third basis in this case, for
13 arguing that the company could have met the July '82 date.

14 None of this material with regard to the 231 weeks
15 is in the company's direct testimony that is at issue here
16 today.

17 MR. WERSAN: Your Honor, in their sur-surrebuttal
18 testimony they lay out a number of charts showing how they
19 come to their conclusions and the number of weeks that are
20 involved as they have adjusted the OKA schedules.

21 I asked Mr. Coughlin a number of questions today
22 on if he knew how many weeks were provided in Mr. O'Brien's
23 schedule, and it was my understanding that he wasn't
24 exactly clear on that.

25 I think the record should be clear on the number of

1 weeks in that schedule.

2 MR. HALL: Your Honor, I do think he did answer that
3 he was aware of it, and he disagreed with it, and that was
4 it. I don't think that there is any need for further
5 cross-examination.

6 This is really, I think, an effort to put in addi-
7 tional direct in support of theories that Mr. Wersan
8 advanced for the first time in the cross-examination this
9 afternoon. It is not directly tied in to any sur-surrebuttal
10 provided by the company.

11 MR. WERSAN: Your Honor, I disagree with Mr. Hall,
12 and I believe considering what is at issue in this case,
13 we should be allowed to put in the number that states the
14 number of weeks that Mr. O'Brien's schedule allows for.

15 JUDGE MATUSCHAK: Is that included anywhere in 1B?

16 MR. WERSAN: The specific number of weeks is not
17 stated, as I understand it, in the testimony. But, Your
18 Honor, I believe in their sur-surrebuttal testimony they
19 show the weeks of duration as they were utilized in the
20 different charts upon which I cross-examined Mr. Coughlin.

21 JUDGE MATUSCHAK: We will overrule the objection.

22 MR. WERSAN: Thank you, Your Honor.

23 BY MR. WERSAN:

24 Q Mr. O'Brien, could you please state the number
25 of weeks that your schedule provides to reach a July 1982

1 fuel load?

2 A. Actually, the number that we rechecked and cal-
3 culated is 250 weeks. That includes four months of float
4 time, and float being the time from -- our calculation,
5 you may recall, went to December 1981, and we added seven-
6 and-a-half months to that in our opinion that Limerick 1
7 could have been completed by July 1982.

8 So the calculation actually is -- our critical
9 path of work in the drywell plus some earlier large pipe
10 installation which was not in the critical path, that's 19
11 weeks; the critical path in the drywell after the reactor
12 vessel was set is 205 weeks, for a total of 224.

13 The reason that we added four months float to that
14 time period rather than seven-and-a-half is that in the
15 company's testimony, they explained or took a position that
16 there was about three-and-a-half months of both a hold in
17 the containment, starting April 9 of '75, I believe, and
18 concluding somewhere -- we don't have a date, an exact
19 date -- somewhere about 14 weeks later. So adding that
20 into our net work absorbs three-and-a-half months of the
21 float, leaving four months of float which would have been
22 available for the drywell work.

23 Q. Mr. O'Brien, in the company's sur-surrebuttal
24 testimony, they have questioned both your experience and
25 your ethics. Could you first, please, state for me the

1 professional organizations to which you are a member and
2 the Code of Ethics you subscribe to?

3 A. Well, I will limit my answer to two that I know
4 of a specific Code of Ethics: the American Society of
5 Civil Engineers, of which I am a Fellow, also the President-
6 Elect of the South Jersey branch; it has a very specific
7 Professional Code of Ethics which, as a professional
8 engineer, I believe I am also obligated to follow.

9 The Project Management Institute, of which I was
10 once President and Chairman of the Board, has a specific
11 set of Project Manager Ethics which I specifically sub-
12 scribed to as a pre-requirement to taking my examination in
13 that organization.

14 Q. The company also has challenged your knowledge
15 of the NRC and questioned your experience about the NRC.

16 Could you please state for us what experience you
17 have had with the NRC?

18 A. For approximately a year-and-a-half I worked as
19 a consultant for the AEC, from about 1972 into early 1974,
20 I believe, as a consultant at Bethesda. I was a consultant
21 to the Director of Licensing.

22 Q. Finally, the company questioned whether or not
23 you actually do construction management as compared to rate
24 case work. Can you please state your current construction
25 projections and experience?

1 A. Well, our company in total over the past two
2 years has had more than a billion dollars worth of construc-
3 tion under direct management; and by that I mean we were
4 named as the construction managers.

5 In the east coast that figure is over 500 million,
6 and currently and for the past more than a year I have been
7 the construction executive in charge of the construction
8 management effort for a portion of a \$360 million program
9 in process to regionalize the sewer system, sewer collec-
10 tion system and treatment in Camden County, New Jersey;
11 and specifically we have about 18 contracts concurrently
12 underway right now at a value, contract value, of about
13 \$130 million. I am the construction executive in charge
14 of that.

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

17 The witness is available for cross-examination

18 MR. HALL: Thank you.

19 Your Honor, I would like to reserve my right to
20 cross-examine Mr. O'Brien with regard to the Exhibit
21 JJO'B-32 until after I have had an opportunity to speak
22 with my experts.

23 JUDGE MATUSCHAK: Very well.

24 MR. HALL: Thank you, Your Honor.

25

CROSS-EXAMINATION

1
2 BY MR. HALL:

3 Q. Good afternoon, Mr. O'Brien.

4 A. Good afternoon, Mr. Hall.

5 Q. Mr. O'Brien, referring to page 5 of your direct
6 testimony, on lines 17 through 19, and also lines 23
7 through 24, you refer to a number of PWR units which had
8 commercial operation dates around late-1980 and during 1981.

9 Do you have that reference, sir?

10 A. Yes.

11 Q. If you know, Mr. O'Brien, when were the construc-
12 tion permit dates for those units?

13 A. They were fairly early in the 1970s, especially
14 for the No. 2 units. On page 5, four of the units are
15 second units.

16 Q. Indeed, they probably had construction permit
17 dates, would you say, in the '70-'71 time period?

18 A. Early-'70s. I wouldn't be surprised.

19 Q. Would you agree with me, sir, that all of these
20 units were essentially construction complete prior to the
21 occurrence of the TMI accident in March of 1979?

22 A. Well, construction would be close to complete;
23 startup would be in motion. Startup wouldn't be complete.

24 Q. Wouldn't it be correct, sir, that on virtually
25 each one of these units, in fact, they were basically only

1 awaiting an NRC license to load fuel by March of 1979?

2 A. I don't know that to be the case.

3 Q. I take it you do not know that not to be the
4 case either?

5 A. That's right.

6 Q. Mr. O'Brien, are you aware that the Consumer
7 Advocate proposed an adjustment to the Susquehanna plant
8 cost when that was claimed in rate base, arguing that the
9 Mark II corrective items on Susquehanna were a critical
10 path item on that unit and delayed the completion of that
11 unit?

12 A. I think that would be a fair characterization
13 of what I understand; yes.

14 Q. Do you also understand that this Commission re-
15 jected the Consumer Advocate's position on that matter and
16 found that indeed the Mark II items, based on that record,
17 were not a cause of delaying completion of the Susquehanna
18 plant?

19 A. I'm not familiar with the language of the
20 Commission's decision.

21 Q. Mr. O'Brien, at pages 11, 12 and I believe 13,
22 and perhaps even subsequent pages of your testimony, you
23 speak of a number of items which Theodore Barry in their
24 testimony have explained that it is their view are not in-
25 cluded in your critical path analysis but which they believe

1 should be included. Is that a fair characterization of the
2 nature of the discussion that you're making on pages 11 to
3 13?

4 A. Yes.

5 Q. Indeed, on page 12, at lines 10 to 11, you
6 state, do you not, that "every other activity shown on that
7 line is included in my network"? And I believe you mean
8 by that that you believe that you have included in your
9 critical path network all of the activities which
10 Theodore Barry has described, except for the ones that you
11 specifically state in your testimony here at pages 11 to
12 13.

13 A. Right, the containment hold and the additional
14 re-bar.

15 Q. Mr. O'Brien, I have here a copy of your Exhibit
16 5C, which reflects your actual critical path network. I
17 would like you to take a look at that, and I would like to
18 ask you about some additional items contained in the
19 Theodore Barry analysis.

20 Theodore Barry, in their testimony on Schedule 5,
21 Sheet 2 of 2, at page 29B, speaks of suppression pool and
22 cone lifts as not being contained in your Exhibit JJO'B-13,
23 that being an item which was critical path for some 50
24 weeks.

25 Can you find that item on your Exhibit JJO'B-13,

1 Schedule 5-C, Exhibit 5-C?

2 A. Yes.

3 Q. Where is that located, sir?

4 A. Form and pour cone lifts is A-77 to A-79.

5 Q. About what time period does that occur?

6 A. The time period is about December/January '76.

7 Q. Is that December '75/January '76?

8 A. Yes.

9 Q. What time period do you have for that item?

10 A. The one that I see is a time frame of about
11 a month-and-a-half, which would be the time that it was on
12 -- would you repeat what is included in your question, be-
13 cause that's cone lifts. What other things were in your
14 list, if I may?

15 Q. That was the only thing that was on my list at
16 the moment, Mr. O'Brien.

17 A. Okay.

18 Q. However, I think you have indicated that the
19 time period is only six weeks?

20 A. It appears to be about six weeks.

21 Q. Would you know, sir, what the actual as-built
22 time period was for that particular activity?

23 A. No, I don't.

24 Q. Would you agree with me that it was significantly
25 greater than six weeks?

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A. I don't know.

Q. How about with respect to complete reactor shield well?

A. I don't see it on our critical path, but it may be in a parallel path. This printout is only of the critical path.

Q. What about with containment structural steel, elevation 272 and 286?

A. I have structural steel to 283; and, again, this is a description taken from the Limerick schedule itself.

Q. I take it elevation 283 would be different than elevations 272 and 286, would it not?

A. Yes, it would. Again, they are not showing on the exhibit I am looking at, which is the critical path.

Q. And you don't know whether or not they are parallel activities or what-have-you at this point?

A. I believe they would be, but the proper thing would be to look at the entire network.

Q. But you don't know that for a fact?

A. Not from my recollection, no.

Q. That's all that I have on that document, Mr. O'Brien.

Mr. O'Brien, you have referenced the Zimmer Unit's litigation respecting the Mark II issue; is that not correct?

1 A. That's correct.

2 Q. And you have noted that the Zimmer owners are,
3 I believe, suing General Electric for some \$360 million
4 related to the Mark II issue; is that not correct?

5 A. I don't know the amount of their suit. The
6 \$360 million figure was taken from a company figure the
7 company had developed as the cost, the additional cost, I
8 believe, of Mark II.

9 As to what is actually listed in the suit, I believe
10 there are some broader fraud implications or a scenario
11 that may increase the number. So I don't know what number
12 they are suing for.

13 Q. Would you agree with me, Mr. O'Brien, that the
14 \$360 million number that you have provided or referenced
15 in your testimony includes a substantial schedule adjust-
16 ment, a substantial schedule effect cost?

17 A. Yes; my recollection is that it does.

18 Q. Is it not correct that Zimmer was a plant that
19 was on a significantly earlier schedule than Limerick and,
20 in fact, was a lead plant from the very beginning of the
21 Mark II analyses in 1974?

22 A. It was designated -- I think Zimmer, Shoreham,
23 and I don't know the third, were all designated lead plants.
24 It was designated as a lead plant. It slipped behind the
25 others.

1 Q Would you know when it slipped behind the others?

2 A No. I think it was sort of an ongoing thing.

3 As a lead plant they used the load bounding approach, and
4 that actually caused additional re-work when the new regs
5 came out.

6 MR. HALL: Your Honor, that's all the questions that
7 I have at this time, reserving the right to cross with re-
8 spect to JJO'B-32.

9 JUDGE MATUSCHAK: Very well.

10 Anything further?

11 MR. WERSAN: Your Honor, maybe just two minutes,
12 and I would request, so that Mr. O'Brien doesn't have to
13 stick around, because he has an appointment in New Jersey
14 this evening, that maybe you could take a short break and
15 look at JJO'B-32.

16 MR. HALL: We can do that right now, if Your Honor
17 wishes.

18 JUDGE MATUSCHAK: Very well.

19 (Recess.)

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1 JUDGE MATUSCHAK: When you are ready.

2 MR. HALL: Thank you, Your Honor.

3 MR. WERSAN: Your Honor, as I understand it, this
4 cross will be limited to JJO'B-32.

5 MR. HALL: Your Honor, I have one correction to make
6 to the cross that I did previously with regard to Mr.
7 O'Brien's computer network. I have one question in which
8 I want to correct something.

9 I have one question with regard to his alleged
10 AEC experience, which you brought up in your examination.

11 MR. WERSAN: Fine.

12 BY MR. HALL:

13 Q Mr. O'Brien, referring to Exhibit JJO'B-32, in
14 looking at the first scenario that you describe there, that
15 is a scenario, as you put it, which involves two shifts of
16 workers over a four-day period for ten hours a day; is that
17 correct?

18 A That's correct.

19 Q I take it those are 100 percent shifts?

20 A That's correct.

21 Q Now, we have two 100 percent shifts of workers
22 working 20 hours at Limerick over two shifts in four days,
23 and then in conjunction with that your suggestion in this
24 scenario is that there be in addition two shifts of workers
25 who would work over the remaining three days of the week

1 12 hours per day; is that correct?

2 A That's correct. This would be limited -- or could
3 be limited just to the drywell.

4 Q This, in essence, I take it, would involve work
5 in the drywell for all but, shall we say, 16 hours during
6 the week; is that not correct?

7 A Yes.

8 Q Now, Mr. O'Brien, in your quantification of costs
9 in your Statement Number 1 and 1A you did not assume this
10 kind of a work load shifting, did you?

11 A No.

12 Q In fact, this type of a shifting arrangement is
13 inconsistent with your cost quantification, is it not?

14 A I'm not sure I understand your question.

15 Q Well, you didn't provide funds for this kind of
16 a shifting network, nor did you provide this kind of a --
17 you didn't provide as an assumption and you didn't quantify
18 in doing your quantification of a Limerick adjustment a
19 shifting scenario such as this which provided for essentially
20 around the clock work at the Limerick plant?

21 A That's correct because my cost calculations are
22 based on single shift, and you will recall earlier today
23 I indicated that our schedule had in it between 224 and 250
24 weeks, and that would have been sufficient time to have done
25 the drywell work on single shift.

1 These scenarios say -- and I don't think I made this
2 clear -- if for the sake of argument I accept the 171-week
3 working period in the containment, then to achieve the
4 densities here is what would have to be done.

5 MR. HALL: Your Honor, with that I would move to
6 strike this document as being totally outside any relevant
7 and probative reach of Mr. O'Brien's testimony. This
8 document does not in any way support his cost quantification
9 presented here, either in his direct or his rebuttal
10 testimony. It is simply a document which says theoretically
11 you can work around the clock at a plant.

12 However, he has not sought to present here a case
13 or quantification which does that, and that being the case,
14 having examined this document, I think it is completely
15 irrelevant to this proceeding and completely improper as
16 testimony to be provided here today on the last day of
17 hearings on this matter.

18 MR. WERSAN: Your Honor, first of all, of course I
19 disagree with Mr. Hall. The purpose of JJO'B-32 is to say
20 the company said that Mr. O'Brien's schedule has 171 weeks
21 to do the work, and it could have been done, based upon the
22 manpower densities that fall out from a 171-week schedule,
23 with the manhours required to get done.

24 Mr. O'Brien has not relied upon a 171-week
25 schedule in the direct testimony, but in this exhibit says:

1 well, suppose it was 171 weeks; could the man loading have
2 been accommodated in the containment as the company says
3 it could not. He says: yes, it could. He's not asserting
4 that this is the manpower density that he put forward in
5 his schedule. Rather he is saying: even if you take what
6 the company has done and adjust the schedules around you
7 could get the manpower in there to do the job.

8 MR. HALL: But, Your Honor, in point of fact when
9 you boil it all down, this is completely inconsistent with
10 his quantification analysis presented here today, and I
11 don't think he can be allowed to change that at the last
12 day of hearings. He's admitted that.

13 MR. WERSAN: Your Honor, he's not changing his
14 quantification analysis; he is responding to the company's
15 argument about the ability to get men into the containment
16 in the time that the company contends would have been
17 available.

18 JUDGE MATUSCHAK: We are not going to strike it.
19 We will consider that aspect in the resolution of the case.

20 You can argue that matter in your brief, Mr. Hall,
21 as to what weight could be given to this in view of the
22 other testimony he has given. The motion is denied.

23 BY MR. HALL:

24 Q Mr. O'Brien, I take it it is your proposal here
25 today that this shifting should continue over a substantial

1 multi-year period for, shall we say, four years or perhaps
2 even more in order to work off the manhours that are involved
3 in the containment; is that not correct?

4 A That's right, rather than let the time overrun
5 occur due to the Mark II work. Again only on the basis
6 that if the company's 171 weeks, which is not a figure I
7 agree with, but if that were the amount of time you had
8 within which to do the Mark II work, then this is an approach
9 that gets it done within that time frame.

10 Q Mr. O'Brien, you haven't done an analysis of the
11 company's manhours in containment to know what percentage
12 of those were directly related to Mark II, have you?

13 A This was for all work in the drywell.

14 Q That would include all of the other regulatory
15 changes in addition to the Mark II; you have not segregated
16 them in any way?

17 A This would be using the company's manhours or
18 manhours of work in the containment area, which is just
19 approximately 2,600,000, just under that, and 171 weeks
20 and the company's own density figures; this is what I offer
21 as a solution.

22 Q But you don't content that this is required
23 simply because of Mark II-related work, do you?

24 A It covers all work in the containment.

25 Q Mr. O'Brien, I would be correct -- in fact I am

1 correct in stating, am I not, that there is no nuclear power
2 plant that has ever employed this type of a system in a
3 containment or elsewhere?

4 A You would be incorrect.

5 Q What plant has employed such a sytem over a four
6 or five year period?

7 A Oh, you added something. I don't know about a
8 four to five year period. I know that Georgia Power at the
9 Vogtle plant has employed similar large work forces on a
10 rolling shift basis when they had day and night and weekend
11 shifts. I believe the configuration was very similar to
12 my scenario. I believe that their night shifts were more
13 lightly manned.

14 Also at River Bend they used -- I believe they called
15 it the rolling four-tens, so that they worked four days.
16 I don't know if they worked second shift. I believe they
17 did, but I don't have the details.

18 But Vogtle was fairly similar to my scenario.

19 Q Is it not correct, Mr. O'Brien, that Vogtle is
20 a significantly more expensive plant than Limerick?

21 A That is correct.

22 Q And is it not correct that River Bend is a
23 significantly more expensive plant than Limerick?

24 A Yes, in terms of total cost or in dollars per
25 kilowatt; true.

1 Q And that's total costs direct and AFUDC for both
2 Vogtle and River Bend; they are most expensive than Limerick?

3 A I believe that is true, yes.

4 Q Is it not correct, Mr. O'Brien, that at River
5 Bend a rolling four-ten scenario such as you have pro-
6 posed here was tried with a second shift, but then abandoned?

7 A I don't know that to be the case. I don't know
8 either way.

9 Q Is it not correct that at Vogtle an around-the-
10 clock construction sequence such as you suggested here was
11 tried, but then abandoned?

12 A I believe Vogtle pursued this for over several
13 years.

14 Q But is it not correct that they have abandoned
15 it at this point?

16 A Abandoned -- they are trying to go to a five-
17 eight scenario. They haven't done it yet.

18 Q Other than the two examples that you have provided
19 us, that being Vogtle and River Bend, no other plant has
20 attempted this kind of a situation?

21 A Calloway in its last couple of years used an
22 approach such as this, particularly in the electrical area.
23 That was an approach which we criticized as being inefficient
24 because it was predicated less on shift work and more on
25 overtime.

1 Q Is there, if you know, Mr. O'Brien, difficulties
2 in trying to function with multiple shifts, and could you
3 describe those difficulties for me?

4 A Well, yes, there are difficulties. One difficulty
5 is that the new shift coming on has to interface with the
6 work of a different crew, so on a single shift scenario a
7 crew finishes at the end of a work day, comes back to the
8 same work, and picks up and has little or no learning curve.

9 On the multiple shifts scenario you are going from
10 different shifts working on the same amount of work. One
11 way at Vogtle they handled that was to have the shift super-
12 visor work additional overtime and come in and spend the
13 last hour or two with the day shift, and then he'd stay on
14 for the night shift. Similarly the day shift super would
15 come in early, size up the work, and they would keep a rolling
16 situation. But that is inherently inefficient.

17 Q Is there a concern over whether labor would
18 agree to this kind of a proposition involving 10-hour and
19 12-hour work days?

20 A Our experience -- I can't give you a citation.
21 My understanding is that labor has agreed, and oftentimes
22 like it because that gives them an extra day or two days
23 off per week, and in some cases they have negotiated to do
24 the four-tens with no increase, you know working it straight
25 time, and in other situations I think companies have paid

1 them more.

2 Q You don't know of any Northeastern plant which has
3 been able to negotiate an agreement to use this type of a
4 system; is that not correct?

5 A I'm not familiar with any. I'm not familiar with
6 any that didn't also.

7 Q I take it you have made no examination or investi-
8 gation as to whether labor in the Philadelphia area would
9 have agreed to the use of this type of a shifting arrange-
10 ment?

11 A This specific arrangement, no.

12 Q I take it you have made no investigation as to
13 whether the labor in the Philadelphia area would have
14 demanded premium time for any hours worked beyond eight hours
15 in a single day?

16 A I haven't.

17 Q And I believe, as you have indicated, in other
18 areas where this has been tried labor has on certain occa-
19 sions demanded and obtained that contract concession?

20 A I believe this happened both ways on the ten-
21 hour shifts.

22 Q Is there a loss of productivity, Mr. O'Brien,
23 in seeking to work labor for a 12-hour or a 10-hour shift
24 over working labor for an eight-hour shift?

25 A Well, there's a theory propounded by the Business

1 Roundtable that working overtime -- and their lowest number
2 was 50 hours per week -- over an extended period can cause
3 fatigue and result on lower productivity. However, in the
4 scenario I have offered there is sufficient time off
5 between the overtime periods that it is my belief that there
6 is nothing to indicate that it would be non-productive.

7 Q In other words, you don't believe trying to work
8 a craftsman for 12 hours would not result in any less out-
9 put per hour than simply working him eight hours in a given
10 day?

11 A It is my belief that doing this over an extended
12 period of time is counterproductive.

13 Q And you are proposing here, are you not, doing
14 it over an extended period of time?

15 A That's right. In the case of the people working
16 12-hour days they would have four days off between their
17 work experiences. And similarly for the people working 10-
18 hour days they would have a three-day weekend every weekend.

19 Q I take it you have made -- would I be correct
20 in stating that you have made no specific investigation
21 to determine whether the supervision and field engineering
22 required to support construction in the containment could
23 have been available to work in conjunction with this type
24 of a system?

25 A That's correct. I've assumed they would be

1 available. I've made no study as to availability.

2 Q I take it you have made no investigation to
3 determine whether or not the NRC regulatory change and
4 additional requirements related to the containment could
5 have been worked in, engineered, designed, recognized and
6 input into a system similar to this construction system
7 which you have proposed here?

8 A I have made no such study; that is correct.

9 Q Mr. O'Brien, you indicated in response to a
10 question from Mr. Wersan that you had done some work with
11 the Director of Licensing of the Atomic Energy Commission
12 back in the period of 1970 to 1972; is that not correct?

13 A No. I believe I said late '72 to early '74.

14 Q Was that work in fact simply providing to the
15 Director of Licensing a computer program for use in
16 managing the docket load of the Atomic Energy Commission
17 at that time?

18 A No, that was not what was involved.

19 Q What did you do?

20 A We did two studies. We did a study on the way
21 in which project managers, the licensing project managers,
22 carried out their reviews for both the construction permit
23 and the operating license, and the general thrust of the
24 study was to identify the process with a view toward apply-
25 ing within the AEC controls to encourage more expeditious

1 reviews without endangering any of the safety aspects. There
2 was concern by AEC management that in effect they didn't
3 want to hold up a license; that was their stated goal. They
4 did not want to hold up industry, and at the time they had
5 100 units in their licensing pipeline.

6 Part of this was because of Calvert Cliffs because
7 all of the units that hadn't received permits had to come
8 back in and submit environmental statements. The second
9 part of that was follow-on to identify what we called the
10 paper trail to identify delays as a result of both
11 industry submittal delays and also delays, potential
12 delays due to other government agency reviews.

13 Q This assistance that you provided, I take it,
14 was to the Atomic Energy Commission; is that right?

15 A Directly to William McDonald, who was a Branch
16 Chief, and he is now the Executive Director of the Federal
17 Energy Regulatory Commission. He was my contracting officer.

18 Q And subsequently the AEC was then reorganized
19 into the Nuclear Regulatory Commission?

20 A That's correct. The reorganization occurred
21 after I worked there.

22 Q Mr. O'Brien, finally I would like to turn to one
23 of the questions that I asked you with regard to your
24 schedule in your Exhibit 5C. I believe I asked a question
25 incorrectly. I had asked you, Mr. O'Brien, about whether

1 certain suppression pool and cone lifts were included on
2 the critical path of our schedule, and I believe you had
3 suggested that they were, but I think I asked the question
4 improperly.

5 I'm asking about the suppression pool and cone lifts
6 1 to 3; are those included in your schedule?

7 A I believe they are in the schedule, but they are
8 not on the critical path. Again, whatever would have been
9 reflected on the original 1974, I believe it was, Philadel-
10 phia Electric Company schedule would be the configuration
11 that we used.

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

14 JUDGE MATUSCHAK: Is there any further cross-examina-
15 tion of this witness?

16 (No response.)

17 JUDGE MATUSCHAK: Is there any redirect?

18 MR. WERSAN: No, Your Honor.

19 JUDGE MATUSCHAK: Thank you.

20 (Witness excused.)

21 MR. HALL: If Your Honor please, I would like to have
22 a very brief recess, I think about ten minutes, and then
23 I'll be prepared to put on Mr. Clarey and Mr. Coughlin to
24 respond to the additional testimony that Mr. O'Brien has
25 given.

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MS. CHESTNUT: What about Mr. Fawcett?

MR. HALL: And also Mr. Love has some comments.

MS. CHESTNUT: How about Mr. Fawcett, Mr. Hall?

MR. HALL: I will also during that break try to get myself ready to do whatever we will do with Mr. Fawcett.

JUDGE MATUSCHAK: We will take a ten-minute recess.

(Recess.)

JUDGE MATUSCHAK: Back on the record.

This witness has been sworn?

MR. HALL: No, he has not, Your Honor.

Whereupon,

JAMES O. LOVE

having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HALL:

Q Mr. Love, would you state your name and position with Theodore Barry and Associates for the record please?

A Mr. Hall, I am Executive Vice-President of Theodore Barry and Associates, and a member of the Office of President. My business address is Los Angeles, California, 1520 Wilshire Boulevard.

Q Mr. Love, would you describe briefly for the record you experience in reviewing nuclear power plant construction projects?

A I tend to lose count. I'm somewhere above 30

1 nuclear power plant construction projects that I have
2 reviewed over the last eight years, going on nine years.

3 Q Mr. Love, were you present during the additional
4 testimony of Mr. O'Brien this afternoon, and were you
5 present during his cross-examination by the company?

6 A Yes, I was present for part of the cross-
7 examination at least.

8 Q Mr. Love, have you had occasion to review Exhibit
9 JJO'B-32 as provided to us by Mr. O'Brien this afternoon?

10 A Yes, I have.

11 Q Could you state your understanding with respect
12 to the two scenarios that he has presented on pages 1 and
13 2 of that document for construction of the Limerick plant?

14 A The scenario I address myself to in looking at
15 JJO'B-32 is the two shifts of four days per week at ten
16 hours per day each, plus two shifts of three days per week
17 at 12 hours per day each.

18 My first sense of this was I had never seen any
19 shift like this before, any work plan of this sort before
20 in any of the 30 nuclear projects, and it strikes me that
21 this is very impractical and it borders on the desperate,
22 something you might do for a week or two in an effort to
23 finish something that you could manage over a short period
24 of time where you could ask the cooperation of a number of
25 people.

1 I guess the things that strike me most reduce them-
2 selves to about five points. First and foremost is the two-
3 shift process I have seen used, and where it was the most
4 useful was where there is usually a strong overlap in super-
5 vision from the first shift to the second shift. That's
6 important to communicate what the tasks were in progress
7 and to make sure those tasks continue as envisioned by the
8 first shift.

9 The second thing in a two-shift environment that is
10 very important is that there are lists of back-up work
11 because quite often the crew will run into an obstacle which
12 will stop them; for example, an interference where they are
13 not able to resolve it by themselves because the regula-
14 tions they are working under require that they have an
15 engineer input to tell them whether or not they can resolve
16 an interference with a duct, with a conduit, with a pipe,
17 without affecting the design integrity, the safety margin
18 that was built into the design.

19 So there has to be some engineering support available
20 at all times, and that's usually difficult around the clock.

21 There also has to be for a useful second shift clear
22 instructions on how to continue the work, and by that I mean
23 not just an overlap of supervision for a brief period of
24 time, but a sense that a crew can come in and often see
25 a piece of work and not be able to tell whether or not the

1 piece is being dismantled as in the case of rework, or being
2 finished as in the sense of a completion of the installa-
3 tion. Quite often they will have seen a piece of rework
4 going on the day before and presume that rework is in
5 progress unless the instructions are very specific. This
6 may not come to the first task that they start with so the
7 overlap in communication may take care of that, but quite
8 often in the follow-up tasks it is not unusual for a
9 second shift to begin to undo what the first shift does.
10 That's one of the major problems.

11 Third, second shift typically can only be a partial
12 shift because the availability of engineering information
13 often isn't adequate in a fast-track design construction
14 situation to provide for two full shifts of work. You need
15 a backlog, as I mentioned before, of engineering design.
16 And typically it is more of a hand to mouth operation
17 because of regulatory requirements causing changes, so you
18 can never quite get far enough ahead to backlog large
19 amounts of engineering information.

20 And the amount of shift work that is being talked
21 about here would presume that there is a tremendous backlog
22 of engineering information.

23 Another point I would make, based on my own observa-
24 tions and many, many studies in the literature, is that
25 rework tends to increase significantly and productivity

1 falls off with increases in shift work, so that often even
2 in the ten-hour shift you get no more productive work net
3 than you do in an eight-hour shift. And certainly that's
4 true of the 12-hour shift as well.

5 So the further you go into the day, the more hours
6 you add per workman, the less chance you have of getting
7 more than an eight-hour shift worth of productivity. You
8 each the point of diminishing returns very quickly.

9 One of the main benefits of the second shift is to
10 avoid the crowding that takes place on a shift. Often one
11 crew will be delayed totally.

12 OCA Witness O'Brien talked about the Project Manage-
13 ment Institute. One of the papers I gave to the Project
14 Management Institute talked about delays of a crew as
15 opposed to within a crew where one man wasn't working. By
16 that I mean a whole crew who is precluded from working
17 because when they get to the work station they find another
18 craft, for example the mechanical craft, occupying the same
19 physical space where they are supposed to be installing
20 conduit or ductwork or pulling cable or making terminations
21 or whatever it might be.

22 So the whole idea of a second shift is to cut down
23 the number of people so that you don't have crowding or,
24 as is usually the case, to take only one type of crew, for
25 example an electrical crew, and allow them to work on the

1 second shift and follow up on that type of work so they never
2 run into a mechanical crew or a heating, ventilation and
3 air conditioning crew or anybody else in their way.

4 In that way they become a little bit more effective
5 than a first crew, as long as they do have the supervision
6 and they do have a backlog of work and tasks they can turn
7 to and there is engineering support around to tell them how
8 to resolve problems that they encounter.

9 But the whole idea of having the second shift is to
10 get some of those benefits, to avoid the crowding that would
11 be implicit in trying to maintain a full second shift of
12 exactly the same type as the first shift.

13 Some other aspects: the magnitude of shift work that
14 OCA Witness O'Brien suggests I don't believe is sustainable
15 over a long period of time, certainly not over a five-year
16 period of the type we are talking about here for the
17 critical path activities in a drywell. Many projects have
18 shown -- one of the best cases I know of is the Trans-
19 Alaska Pipeline System project -- that by providing shift
20 work and extra overtime it is one of the greatest ways to
21 burn people out, to increase turnover, and what it does is
22 simply keep you from sustaining for more than maybe a few
23 months for any given worker the kind of process that we are
24 talking about here in double shifting.

25 This happens not only to the manual crew workers,

1 but also to the non-manual supervision and to the engineering
2 type support that we were talking about before.

3 My sense also is that you could not retain enough
4 high quality non-manual people willing to work on this kind
5 of a regimen to be able to support and sustain crew work
6 around the clock.

7 I also think, lastly, that the first thing I would
8 do before trying to implement this except for a very short-
9 term basis in an emergency situation is I would test the
10 cost/benefits of it. I think it is in the best interests
11 of the ratepayer to always ask the question: what is the
12 lowest cost schedule?

13 That's a question that we have asked many, many times
14 over the years, and you are asking a company to exert an
15 awesome amount of resources per day here with I think
16 productivity that you can predict net of rework will not
17 gain them very much.

18 So I think you need to really carefully look at what
19 the schedule acceleration benefits are, if any, of a regimen
20 of this type.

21 Q Mr. Love, based on your experience, reviewing,
22 as you have indicated, over 30 nuclear power plant construc-
23 tion sites on behalf of commissions, utilities and also
24 consumer advocates, do you believe that a program such as
25 that advanced by OCA Witness O'Brien this afternoon in

1 Exhibit JJO'B-32 would be a desirable or practical program?

2 A No, I do not.

3 MR. HALL: Your Honor, that's all the comments.

4 JUDGE MATUSCHAK: Is there any cross-examination?

5 MR. WERSAN: No, Your Honor.

6 JUDGE MATUSCHAK: The witness is excused.

7 (Witness excused.)

8 MR. HALL: Your Honor, we would like to present Mr.
9 Clarey and Mr. Coughlin also in response to Mr. O'Brien's
10 comments.

11 Whereupon,

12 JAMES J. CLAREY
13 JAMES R. COUGHLIN

14 having previously been duly sworn, testified further as
15 follwos:

16 DIRECT EXAMINATION

17 MR. HALL: Mr. Clarey, were you present today when
18 Mr. O'Brien presented his Exhibit JJO'B-32?

19 WITNESS CLAREY: Yes, I was.

20 MR. HALL: And Mr. Coughlin, similarly were you
21 present?

22 WITNESS COUGHLIN: Yes, I was.

23 MR. HALL: Have you two gentlemen had the opportunity
24 to review Exhibit JJO'B-32?

25 WITNESS CLAREY: Yes.

WITNESS COUGHLIN: Yes.

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1 MR. HALL: Could I ask Mr. Clarey: do you have an
2 opinion over whether the program set forth in Exhibit JJO'B-
3 32 is an appropriate and reasonable program which could have
4 been implemented at the Limerick plant; and if you believe
5 not, why not?

6 WITNESS CLAREY: Certainly I think it is the latter.
7 It is not an appropriate program. It would pretty much fly
8 in the face of any beliefs in maintenance of productivity,
9 high quality, and continuity of work that has been developed.

10 Really, I understand Mr. O'Brien's presentation very
11 well. As he said -- he didn't say this exactly, but
12 really in the vernacular it's just a way to burn manhours.
13 He looked for a way to use the hours that we both agreed
14 upon over a shorter span of time.

15 It's impractical for many reasons. For example, in
16 no order of priority, but how would labor view it? I
17 question the ability to implement such a program with the
18 some 20 craft labor unions that we have at the plant. If
19 you say just limit it to the drywell, that in itself would
20 be a major hang-up immediately because everyone would
21 want to participate in this sort of a windfall as far as
22 salary is concerned.

23 But that notwithstanding, there would be a very
24 difficult time in getting the labor unions to agree to that
25 kind of work schedule, particularly the three days.

1 As Mr. O'Brien admitted, to the best of our know-
2 ledge, the Vogtle plant is the only project that has tried
3 that concept, and the second group of workers is going to
4 be working 36 hours, and principally for the most part they
5 would be working at a premium time rate at either time and
6 a half or two times their regular hourly rate, which would
7 bring me to my second point, that it is extremely costly
8 to engage in such a program.

9 Over a long-term period I can see -- the only place
10 we have ever experienced anything like that -- and we even
11 frowned upon it -- would be in an outage situation. Per-
12 haps over a few days or weeks to return a unit to service
13 we might embark on such a program, but for a period of three
14 to four years is just unbelievable to me.

15 The availability of labor would become an issue,
16 the numbers of qualified workers who would be needed in that
17 highly skilled area of the plant, as well as the kind of
18 high quality supervision and field engineering and
19 resident engineering that you would have to have available
20 seven days a week practically around the clock in order to
21 maintain such a force, it if is at all maintainable.

22 In the case of Unit 1 design changes were flowing
23 regularly. In that kind of dynamic situation you can't plan
24 to use an organization such as this. If there were a
25 construction program for the installation of a large quantity

1 of rather repetitive items of some kind, a housing develop-
2 ment or a sewer project or a pipeline -- I don't know;
3 there might be possibilities there, but certainly not to
4 meet the requirements of a nuclear power plant.

5 I'd say those are some of the implementation problems.
6 The cost would be extremely high. We know from our contacts
7 with other utilities and the information that we share that
8 all the plants that Mr. O'Brien mentioned we had in our own
9 minds. River Bend, Vogtle and South Texas are all of higher
10 cost than Limerick, than Limerick Unit 1.

11 The only benefit that might be achieved from such
12 a program would be to improve the schedule, but I even find
13 that highly unlikely. To my own knowledge, I'm acquainted
14 with several individuals from the River Bend project, and
15 to talk about using not only one shift but two shifts, two
16 full shifts, or in the second scenario a two-thirds
17 shift seven days a week really is impossible.

18 They tried it at River Bend. You have the transfer
19 of information that was just referred to from the first
20 shift to the second shift, which means carrying over the
21 supervision to work 12 or 13 hours a day or more, depending
22 on that 12-hour day scenario; and then you have the same
23 problem as you move from the four-day crew interfacing with
24 a three-day crew. A tremendous problem in transferring
25 information, especially that kind of information that we

1 deal with in these plants.

2 The Vogtle people -- as we understand it, the
3 Vogtle people employed such a program. I'm not quite sure
4 why. Perhaps it would have been to attract labor, and
5 there's another trap that we get into. But they abandoned
6 it. And not to comment too much on the problems of other
7 plants, but that plant and the next one which I would name,
8 South Texas, had serious problems; serious. You cannot
9 manage this kind of work force in a nuclear power plant
10 effectively.

11 The last thing I would say is that we considered --
12 over the years we have considered the rolling four-ten
13 program for Limerick. We talked about it for Unit 2, and
14 knowing that the premium time would have to be paid for
15 certain portions of the week, and given all of the other
16 considerations, the premium costs for non-manual as well,
17 it was not cost-effective, in our view.

18 And finally I would just think as I'm talking about
19 that last item, to say that one can use 24 hours in one day
20 effectively is ludicrous because the worker must have a
21 lunch period. In fact, he would have two lunch periods
22 during a 12-hour day; and so there you effectively -- or
23 actually minute-wise have only 11 of 12 hours available.

24 Another major problem in working such a schedule in
25 the reactor building and in the drywell is the fact that

1 some portion of the day is required to perform radio-
2 graphic inspections of the piping and other structural
3 members and welding that the codes require be tested in
4 that fashion. And so normally the third shift or some
5 portion of that is kept available for that work because
6 workers must be excluded from the areas where radiographic
7 inspections are being accomplished.

8 So overall, again it is purely a way, as Mr. O'Brien
9 described it, I think, to work off or burn manhours, and
10 it certainly isn't a practical or appropriate program to
11 be used to construct a nuclear power plant, especially the
12 first unit of Limerick.

13 MR. HALL: Mr. Clarey, you referred to serious
14 problems at the Vogtle and South Texas plants. When you
15 refer to that, are you referring to -- what is the relation-
16 ship of their costs to Limerick; is it substantially greater,
17 or do you have a specific relationship?

18 WITNESS CLAREY: I don't have any specific figures
19 -- I'm sorry -- in mind at this point. The amount of labor
20 that is being used at the South Texas and Vogtle plants,
21 I've heard numbers of 10,000 workers on the site. For
22 example, at South Texas I understand there are on the order
23 of 10,000 workers on the site, and I know that there have
24 been continuing management problems, with a turnover of
25 supervision and management. Not only are there several

1 architect/engineers involved there, and I have personally
2 talked with individuals who have worked there for a time
3 and they describe the management process there as pretty
4 much being out of control.

5 I would expect that when you try to implement such
6 a program.

7 MR. HALL: Mr. Coughlin, do you have additional
8 comments to add?

9 WITNESS COUGHLIN: Yes. Just taking up on the point
10 that Mr. Clarey was just making, from our familiarity with
11 the Vogtle plant and the South Texas plant because of the
12 involvement of the company I work for, I can tell you that
13 attempts at working those kinds of accelerated programs
14 have been made there, and in addition to the problems --
15 I guess partly because of the problems that Mr. Clarey
16 mentioned that those accelerated programs in fact today have
17 been abandoned at the south Texas plant and at the Vogtle
18 plant.

19 In fact, neither of them ever got to the same
20 degree of implementation in this type of programs as Mr.
21 O'Brien has suggested as the solution, to use his words.

22 In fact, at the Vogtle plant I don't believe that
23 second shift ever exceeded 40 percent of the first shift.
24 So I would say from that standpoint that our experience in
25 the industry in this regard does not lend confidence to

1 our assessment of the ability to implement that type of
2 program.

3 I think Mr. Clarey hit the major points and concerns
4 that this creates. I don't think there is much to add to
5 that.

6 I would like to just, I guess, also add that Mr.
7 O'Brien offered this as a solution, accepting the shorter
8 duration. He does not accept our analysis, but I haven't
9 heard him refute ours either in terms of the start-up
10 duration which we feel is still dependable and an adjustment
11 appropriate to make to his schedule on the as-built work
12 through June 1, 1976. I still maintain that is a proper
13 adjustment to be made.

14 MR. HALL: Your Honor, we would ask the right -- we
15 do not have the data here today, but we would ask the right
16 to provide for the record the costs of the River Bend,
17 South Texas and Vogtle plants, which the company contends
18 are substantially greater than those of Limerick 1.

19 MR. WERSAN: Your Honor, I would note that Dr. Perl
20 from the company has put in many cost numbers for plants,
21 and I believe South Texas and River Bend are included in
22 his testimony.

23 MR. HALL: I don't know that. If in fact that is
24 true then we would not need to put in any additional numbers.
25 However, I would like to have the opportunity in light of

1 the late presentation of this material to provide for the
2 record a late-filed exhibit that would contain the actual
3 costs of those three plants.

4 JUDGE MATUSCHAK: Do you have any objection, Mr.
5 Wersan?

6 MR. WERSAN: Your Honor, I would object, but Mr.
7 Hall can put whatever he wants in really at this point.

8 MR. HALL: Thank you, Your Honor.

9 MR. WERSAN: I do have a question though, Your
10 Honor.

11 CROSS-EXAMINATION

12 MR. WERSAN: Mr. Coughlin and Mr. Clarey, you both
13 mentioned South Texas. To your knowledge, do you know
14 whether or not Mr. Love and Theodore Barry have presented
15 a retrospective review of the South Texas plant and made
16 conclusions about the prudent construction and management
17 practices of that plant?

18 WITNESS CLAREY: I do not, no.

19 WITNESS COUGHLIN: Same; I have no knowledge of that.

20 MR. WERSAN: Mr. Hall, since that has come up
21 subsequent to Mr. Love, I will just indicate I will ask
22 him about that when he is presented.

23 MR. HALL: That's fine.

24 JUDGE MATUSCHAK: Is there anything further?

25 (No response.)

1 JUDGE MATUSCHAK: Thank you.

2 (Witnesses excused.)

3 MR. HALL: If Your Honor would give me five minutes
4 we will be prepared to talk to Mr. Fawcett, if that is agree-
5 able.

6 JUDGE MATUSCHAK: We will take a short recess.

7 (Recess.)
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1 JUDGE MATUSCHAK: Do you want to make a statement
2 on the record, Mr. Hall?

3 MR. HALL: The company has reviewed the additional
4 material, Your Honor, that Mr. Fawcett put into the record,
5 and we have no additional response.

6 JUDGE MATUSCHAK: Very well. You may proceed.

7 MR. HALL: Your Honor, we have for presentation here
8 today Mr. James Love and Mr. Basil P. Kononetz of Theodore
9 Barry and Associates. Each witness has been previously
10 sworn.

11 Whereupon,

12 JAMES O. LOVE
13 and
14 BASIL P. KONONETZ

15 having previously been duly sworn, testified further as
16 follows:

17 DIRECT EXAMINATION

18 MR. HALL: Mr. Love, do you have before you a
19 document entitled, "Rebuttal testimony of James O. Love
20 and Basil P. Kononetz," PECO Statement No. 8A?

21 MR. LOVE: Yes, I do.

22 MR. HALL: Do you also have before you a document
23 entitled, "Sur-surrebuttal Testimony of James O. Love and
24 Basil P. Kononetz," PECO Statement No. 8B?

25 MR. LOVE: Yes, I do.

MR. HALL: And finally, do you have before you a

1 document entitled, "PECO Statement No. 8C, Sur-surrebuttal
2 Testimony of James O. Love and Basil P. Kononetz"?

3 MR. LOVE: Yes, I do.

4 MR. HALL: Mr. Love, do you have any corrections to
5 make to these three documents at this time?

6 MR. LOVE: Yes, I do.

7 The first correction is at page 11, line 7.

8 MS. CHESTNUT: What document is that that you are
9 referencing?

10 MR. LOVE: I'm sorry, starting with PECO Statement
11 No. 8A at page 11, line 7. The word "wave," W-A-V-E,
12 should be "waive," W-A-I-V-E.

13 Page 17, line 16, the word "affect" should be
14 "effect." Page 26a --

15 JUDGE MATUSCHAK: Excuse me, I didn't get that. Page
16 17, line 16 --

17 MR. LOVE: Page 17, line 16, the word "affect"
18 should be "effect." It appears in the middle of the line.

19 At page 26, line 31, the line that starts "and 208
20 percent," the percentage should read, "and 53 percent."

21 On Schedule 2, the following page, 26a, the third
22 line from the bottom of that schedule, starting with the
23 word "Conduit," the first column, under Forecast 1, where
24 the number 127,100 appears, it should be 255,590.

25 In the third column, under the word "Quantity

1 Increase," the number 264,556 should be 136,066.

2 In the last column, the number 208.1 percent should
3 be 53.2 percent.

4 On that same page in Schedule 3, under the column
5 labeled "Forecast 1," the third number from the bottom
6 appears as 33.03. It should be 32.36.

7 On the following page, 26b, the first column, the
8 word "Large Pipe Hangers" appears.

9 In that row, under "Forecast 1," the number is
10 246,670. The number should be 241,670.

11 In the third column, the number 1,685,510 should
12 be 1,690,510.

13 The last column, the same row, the number 603.3
14 percent should be 699.5 percent.

15 Four lines down, in the row marked "Conduit," for
16 the column "Forecast 1," the number 140,993 appears. It
17 should be 279,056.

18 Third column, under "Manhours," the number 1,060,691
19 appears. It should be 922,628.

20 In the last column, same row, the number 752.3 per-
21 cent appears. It should be 330.6 percent.

22 Finally, on that page, under the label "Other
23 Directs," at that line in the first column marked "Forecast
24 1," the number 4,673,662 appears. It should be 4,540,599.

25 The third column, under "Manhours," the number

1 6,152,710 appears. It should be 6,285,773.

2 Finally, the percentage, the same line, appears as
3 131.6. It should be 138.4.

4 Page 31, at line 19, the words "and poor shield"
5 appear. There should be a comma after "shield."

6 The following line, the words, "drywell large pipe
7 work," comma, appears. The comma should be removed.

8 On page 34, line 33, the line that ends "and impact
9 of", there should be a comma after the word "of".

10 Page 35, at line 45, the word "participants" appears.
11 It should be followed by a comma.

12 MR. HALL: Mr. Love, in the interest of time, can we
13 leave out the commas?

14 MR. LOVE: Sure. I have only a couple more.

15 At page 38, the word "second" appears. The word
16 should be "two," T-W-O.

17 At page 41, line 31, there is a hyphen misplaced
18 between the word "postulated" and "higher." The hyphen
19 should be between the words "than" and "actual."

20 In Appendix A, on page A-3, the very first line,
21 third column, the date appears as June 19, 1975. It should
22 be 1974.

23 On page 5 of the activity report of that appendix,
24 there is an activity that starts "A274, Weather Allowance."
25 The words "Weather Allowance" should be "Dummy" instead of

1 "Weather Allowance." That's all the corrections I have in
2 8A.

3 MR. HALL: Mr. Love, do you have any corrections to
4 make to PECO Statements Nos. 8B or 8C?

5 MR. LOVE: 8B I have one. At page 7, line 27, the
6 line starts with the word "inclusion." That should be
7 plural, "inclusions."

8 That's the only one I have in 8B.

9 MR. HALL: And in 8C?

10 MR. LOVE: 8C, page 11, line 21, the line that
11 starts "in both ahead of schedule," before the word "of,"
12 the words, "the publicly-announced" should appear.

13 The last correction is at page 23, line 37. The
14 word "months" in that line should be "weeks."

15 MR. HALL: Mr. Love, with these corrections, is the
16 data and information that you provide in PECO Statement No.
17 8A, PECO Statement No. 8B and PECO Statement No. 8C true
18 and correct to the best of your knowledge and belief?

19 MR. LOVE: No. I think I just made an error in my
20 last correction. I was on the wrong page. At page 23,
21 line 37, the word "months" should be "months." I'm sorry,
22 that was an error. Now they are true as I believe them to
23 be.

24 MR. HALL: Mr. Love, if I were to ask you the
25 questions contained in these documents, would your answers

1 be as set forth therein and would they be true and correct
2 to the best of your knowledge and belief?

3 MR. LOVE: Yes.

4 MR. HALL: Were the analyses set forth and described
5 in these documents and their attachments prepared under
6 your direction and supervision?

7 MR. LOVE: Yes, they were.

8 MR. HALL: Mr. Love, is the role of yourself and
9 Mr. Kononetz with respect to the preparation of this
10 testimony the same as is described in the direct testimony
11 that you have previously submitted?

12 MR. LOVE: Yes, it is.

13 MR. HALL: Mr. Kononetz, is your contribution to the
14 documents, PECO Statement No. 8A, 8B and 8C true and correct
15 to the best of your knowledge and belief?

16 MR. KONONETZ: Yes, they are.

17 MR. HALL: Your Honor, I would ask that these
18 documents be identified as PECO Statements Nos. 8A, 8B, and
19 8C for inclusion in this record, and that they be admitted
20 into the record.

21 JUDGE MATUSCHAK: The motion is granted subject to
22 timely motions or exceptions.

23 (Whereupon, the documents were
24 marked PECO Statements Nos.
25 8A, 8B and 8C for identifica-
tion and received in evidence.)

1 MR. HALL: Mr. Love and Mr. Kononetz are available
2 for cross-examination.

3 JUDGE MATUSCHAK: Staff?

4 MS. CHESTNUT: Your Honor, yes. Staff has a motion
5 to strike a piece of Mr. Love and Kononetz's testimony.
6 PECO Statement No. 8B, page 3, Your Honor, the sentence
7 that starts on line 25, he states there, Your Honor, "In
8 contrast, as described in our direct testimony, TB&A has
9 performed such a detailed analysis and concluded that the
10 process underlying the 1976 and 1978 deferral announcements
11 'was reasonable and reflected an informed position with
12 regard to both the costs and benefits of those decisions.'"

13 Your Honor, that statement is directly violative of
14 Your Honor's ruling on Staff's motion where Your Honor has
15 ruled that, "to the extent that any testimony submitted or
16 to be submitted by Philadelphia Electric Company which
17 relates solely to the issue of the reasonableness of the
18 company's 1976 and 1978 decisions to delay construction of
19 Limerick No. 1 is hereby stricken and may not be relied upon
20 by the parties."

21 The sentence I have identified, Your Honor, is
22 directly directed to the reasonableness of the 1976 and 1978
23 delays, and therefore, Your Honor, Staff requests that it
24 be stricken.

25 MR. HALL: Your Honor, I believe that the entire

1 discussion on pages 2 and 3 is intended by these witnesses
2 and by the company to go to the issue of quantification and
3 whether or not Staff has performed an appropriate quantifi-
4 cation analysis, and whether or not the Staff should in
5 fact do a detailed review with regard to the processes
6 involved in order to properly understand and develop a
7 quantification analysis.

8 I would agree with Ms. Chestnut that any statement
9 that is made and accompanies a testimony, rebuttal or
10 sur-surrebuttal, is subject to Your Honor's ruling and
11 cannot be used under Your Honor's ruling with respect to
12 attempting to demonstrate that the 1976 and 1978 decisions
13 were properly made and prudent, and we do not intend this
14 statement to go to that point.

15 And therefore, I think the matter is subject to Your
16 Honor's ruling, and whatever ruling you make at the end of
17 the case.

18 JUDGE MATUSCHAK: It's subject to our ruling. We
19 can resolve this at that point within the ruling. And that
20 statement will be stricken.

21 MS. CHESTNUT: Thank you, Your Honor.

22 MR. WERSAN: Your Honor, the OCA also has a motion to
23 strike, and it is with regard to two passages from Statement
24 No. 8C. The first one is on page 3 of 8C, starting at the
25 first line, paragraph number 7: "OCA Witness O'Brien shows

1 an unprofessional propensity for misquoting," et cetera,
2 through that paragraph.

3 The next one, along the same lines, is on page 14,
4 starting at line 3 through line 29, with the question, "You
5 previously noted an unprofessional propensity by Witness
6 O'Brien to misquote," et cetera.

7 And then he discusses the code of ethics and whether
8 or not in his opinion Mr. O'Brien subscribes to the code
9 of ethics that Mr. Love does.

10 Your Honor, I believe that under the Commission's
11 Rules, 1.4(e), it states, "The Commission may order
12 redundant, immaterial, impertinent or scandalous matter
13 stricken from documents filed with it."

14 I believe that for Mr. Love and Mr. Kononetz to come
15 in here and cast aspersions on the ethics of my witness is
16 certainly uncalled for and is not probative.

17 JUDGE MATUSCHAK: We agree with you. That portion
18 will be stricken.

19 MR. WERSAN: Thank you, Your Honor.

20 JUDGE MATUSCHAK: Do you have any cross-examination?

21 MS. CHESTNUT: Yes, Your Honor, I do.

22 CROSS-EXAMINATION OF
23 JAMES O. LOVE

24 BY MS. CHESTNUT:

25 Q. Good afternoon, Mr. Love.

A. Good afternoon.

1 Q. Mr. Love, I would like to refer you to PECO
2 Statement No. 8B, specifically page 3. Beginning on line
3 7 of that page, you discuss what you refer to as
4 assumptions which underlie Staff adjustments, and you use
5 the sentence, "It appears they would have the Commission
6 accept the following scenario." Do you see the reference?

7 A. Yes, I do.

8 Q. And the first one that you list is that "PECO's
9 announcements to defer construction in 1976 and 1978 have
10 been determined to be imprudent."

11 Are you aware, Mr. Love, that the Commission has
12 already made that determination?

13 A. What I am aware of is that the Commission has
14 made a determination only in the sense that it has been
15 accepted for the purposes of this proceeding that there has
16 been some imprudence.

17 What I am also aware of is that, as I have mentioned
18 several times in my direct and rebuttal testimony, that
19 there has been no determination of what the specifics of
20 that imprudence are, which is a difficulty I have in
21 understanding it or understanding whether the ruling was
22 meant to be a ruling of imprudence.

23 So, to that extent, that is what my awareness
24 consists of.

25 MS. CHESTNUT: If I could have just a second, Your

1 Honor, to find the appropriate reference; I seem to have
2 lost it here.

3 (Pause.)

4 BY MS. CHESTNUT:

5 Q Mr. Love, are you aware that the Commission made
6 the statement in its Limerick No. 1 order, "Considering the
7 foregoing, we are of the opinion that PECO management did
8 not exercise judgment sufficient to meet a reasonable man
9 standard in delaying construction of Limerick in 1976 and
10 1978"?

11 A Yes.

12 Q And is it your opinion, Mr. Love, that that is
13 not a definite finding of imprudence?

14 A Yes. It is not specific, in my opinion.

15 Q And do you disagree, Mr. Love, that the fact that
16 the completion date in effect for Limerick Unit 1 prior to
17 the 1976 deferral announcement was April, 1981, that that
18 was the publicly announced completion date?

19 A I show the publicly announced date as of May,
20 1976 to be October, 1982 for fuel load for Limerick 1.

21 Q Are you sure you're correct on that, Mr. Love?

22 A I show a construction target date of October,
23 1981 as of May, 1976. Since May, 1976 was the month of
24 the announcement, it is possible that the previous date of
25

1 October, 1980, the publicly announced date, we're talking
2 about the cusp, that that was the date, 10/80, just before
3 the announcement, probably, and just after the announcement
4 was 10/82.

5 Q Well, that 10/80 date, Mr. Love, is the fuel
6 load date as opposed to the in-service date, is that correct?

7 A It's the fuel load date.

8 Q And that a 10/80 fuel load date would translate
9 into an in-service date of April, 1981, allowing six months
10 for pre-commercial testing?

11 A Yes, that is my understanding of the plan at the
12 time.

13 Q So, you don't disagree that the in-service date
14 for Limerick Unit 1 prior to the 1976 announcement was in
15 fact April, 1981, the publicly announced in-service date?

16 A That was the intended in-service date at that
17 date.

18 Q And further in your statement, Mr. Love, you
19 discuss the simultaneous schedules, the publicly announced
20 schedule and the internal construction schedule, is that
21 correct?

22 A That is correct.

23 Q Do you think that Bechtel, the PECO personnel,
24 the subcontractors, and the vendors that you refer to on
25 page 8 were aware of the publicly announced completion

1 schedule?

2 A. I find it hard to believe that anything in the
3 industry is kept quiet for very long, especially anything
4 that is publicly announced, so I do believe in fact that
5 everyone knew.

6 Q. And Mr. Love, with respect to TB&A's involvement
7 in this project, did TB&A go to PECO with a proposal to
8 participate in this case, or did the electric company
9 approach you about your involvement?

10 MR. HALL: Your Honor, I don't see the relevance of
11 that to the sur-surrebuttal testimony. I believe those
12 questions were also asked of the TBA witnesses on direct,
13 and the matter has already been covered.

14 MS. CHESTNUT: Your Honor, in Statement No. 8A, at
15 various places, including the cover page, the title is
16 "Independent Assessment of the Reasonableness of the
17 Construction Schedule." I would like to probe a little into
18 that independence.

19 JUDGE MATUSCHAK: Which page is that?

20 MS. CHESTNUT: That's on the cover page of 8A, Your
21 Honor, and it's also referred to on page 35, for example, at
22 line number 3: "TB&A, as the result of extensive independent
23 retrospective review...." And I want to see how that differs
24 from the usual outside expert retained by a party.

25 MR. HALL: Your Honor, I would note that the same

1 area was covered in the cross-examination of TBA witnesses
2 on their direct testimony, which was also presented as an
3 independent assessment.

4 JUDGE MATUSCHAK: We will overrule the objection.

5 MS. CHESTNUT: Thank you, Your Honor. I just have
6 a few questions in this area.

7 BY MS. CHESTNUT:

8 Q Mr. Love, do you remember the outstanding
9 question?

10 A What I understand of the question is, did we go
11 to Philadelphia Electric Company or did they come to us?

12 Q Yes.

13 A I think that is very hard to determine. They
14 were aware of us since 1977, having worked on the other
15 side of the courtroom, so to speak, from counsel.

16 We were well known because of the Salem case, working
17 for the Office of Consumer Advocate, to Philadelphia
18 Electric Company and to the law firm, who eventually
19 decided to use our services.

20 We have always contacted utilities. That's one of
21 our principal businesses, and from time to time we have
22 renewed those contacts. I am sure we have done that with
23 Philadelphia Electric on occasion.

24 It is my opinion that that happened several times
25 over the course of the years. So, I am not exactly sure

1 why, but we were brought to Philadelphia Electric's
2 attention, and we found that we were able to provide a
3 service which we explained to them, and then made a presen-
4 tation to them and they decided to retain us.

5 Q So, it was TB&A's idea to testify in this
6 proceeding?

7 A It wasn't a matter of testifying at all.

8 Q That is what I am discussing here is presenting
9 testimony.

10 A I'm sorry. I thought you said doing an
11 independent review.

12 Q Well, I see them as being related.

13 A I distinguish between the two. The independent
14 review is something we explained to the company that we have
15 done for several other jurisdictions: Attorney Generals,
16 Public Advocates, Consumer Advocates, commissions and
17 utilities.

18 And we explained what we do in those reviews, what it
19 entailed, what we had in fact accomplished for others. And
20 part of those services sometimes include being a witness and
21 sometimes they do not. So, we did not volunteer to be
22 witnesses, necessarily.

23 We did present our credentials to conduct the
24 independent review, and it was already known to the company
25 that we had testified.

1 Q So, you want to the company and said, "We're
2 able to do this type of review that we think can be of
3 assistance to you"?

4 A No, I didn't.

5 Q Not you personally; I'm talking about your firm.

6 A I am not sure what the original contact was.

7 By the time it came to me, it was presented as an
8 opportunity to talk to someone who might be in need of the
9 same services that we have provided to others.

10 Q Did any entity besides the company have input
11 into your hiring?

12 A I am not sure which company you mean. We were
13 hired, my understanding was we were hired by Morgan, Lewis
14 & Bockius to assist them in their investigation.

15 Q Who is paying your fee, Mr. Love? Isn't it the
16 ratepayers?

17 A I really don't know the mechanics. I do know
18 that our bills are paid by Morgan, Lewis & Bockius.

19 Q Mr. Love, I will ask you to accept my represen-
20 tation that the costs incurred by the company in presenting
21 this case are recoverable as rate base expense from the
22 ratepayers.

23 A I have no reason to doubt that.

24 JUDGE MATUSCHAK: I think we're getting far afield.

25 MS. CHESTNUT: Yes, I do, too, Your Honor. Let me

1 try and get this back here.

2 JUDGE MATUSCHAK: As I recall, we had the
3 Philadelphia Electric case before in 1977-78. Theodore
4 Barry was on the other side with the Consumer Advocate.

5 BY MR. CHESTNUT:

6 Q Mr. Love, did anybody beside PECO and its law
7 firm, of course, have any input into your selection and
8 retention for this case?

9 A I have no idea how idea how our selection or
10 retention was handled.

11 JUDGE MATUSCHAK: Let's get to the heart of the
12 problem.

13 MS. CHESTNUT: Why don't we just forget this, Your
14 Honor. I think there is enough on the record without
15 belaboring it.

16 Thank you, that's all I have.

17 JUDGE MATUSCHAK: Consumer Advocate?

18 CROSS-EXAMINATION OF
19 JAMES O. LOVE

20 BY MR. WERSAN:

21 Q Good afternoon, gentlemen. Mr. Love, am I
22 correct that you have performed a retrospective review or
23 some analysis of the South Texas nuclear plant?

24 A Yes. Theodore Barry has performed a retrospective
25 review of the South Texas project.

1 Q Who retained you to do that?

2 A Baker and Bott, the law firm of Baker and Bott.

3 Q Who were they representing?

4 A Houston Lighting and Power Company.

5 Q Is that the owner of the plant?

6 A Yes, it is. That's one of the owners of the
7 multiple ownership.

8 Q Did you present testimony with respect to the
9 South Texas plant?

10 A Yes, I did.

11 Q And did you stand cross-examination on that?

12 A Yes, I did.

13 Q And did you submit testimony with regard to the
14 reasonableness of the costs of the South Texas plant?

15 A I presented a prudence review. I wouldn't
16 describe it as the reasonableness of the cost. We did no
17 cost reconciliation as we have done in this review.

18 Q Did you find that Houston Power and Lighting was
19 imprudent of its management of the South Texas project?

20 A No. We found that they were generally prudent,
21 generally reasonable.

22 Q Now I would like to refer you to page 15 of your
23 Statement No. 8C -- I'm sorry, starting at page 14. On the
24 bottom half of page 14, you state you are going to give an
25 example of a misquotation by OCA Witness O'Brien, is that

1 correct?

2 A. Yes.

3 Q. And what you are discussing there is what you
4 quote on page 15, starting at line 9 from Mr. O'Brien's
5 testimony, is that correct?

6 A. Yes.

7 Q. And am I correct that you are asserting that
8 Mr. O'Brien left out the sentence in your testimony stating
9 that, "Although intuitively credible, this assumption is
10 not necessarily correct and, even if it were correct, it is
11 encumbent upon the analysts to perform a thorough review,"
12 et cetera?

13 A. That is not the only thing he left out. He took
14 it completely out of context.

15 Q. Let me ask you this. If you look at page 4 of
16 Mr. O'Brien's testimony where you are quoting from, and look
17 at the bottom there, starting at line 20, would you agree
18 with me that starting at that line is the quote that you have
19 in your testimony, and then beyond the quote in your
20 testimony is the line, "Messrs. Love and Kononetz did not
21 necessarily agree that such cost increases would result in
22 a delay"?

23 A. That's what it says here in his testimony, yes.

24 Q. Now, I would like you to refer to page 2 -- and
25 I'd like to switch testimonies here to 8B, page 2, line 5.

1 And you state, starting at the end of line 5, "The
2 Commission's opinion, as we understand it, was related only
3 to the deferral announcements and not to any particular
4 length of time that the schedule may have been extended by
5 those announcements," is that correct?

6 A. Yes, it is.

7 Q. Now, I take it, Mr. Love, that you read the
8 Commission order in that case?

9 A. I read only parts of the Commission's order, yes.

10 Q. And which part did you read?

11 A. I read the -- I think it is very hard for me to
12 answer that in the abstract. I read the opinion that was
13 quoted from the Law Judge's decision. I read the findings
14 of the order.

15 But I don't purport to be an expert on the case. I
16 did not read anything beyond that document.

17 Q. So, you didn't read then the recommended decision
18 by the Administrative Law Judge in that case, I take it,
19 only that portion of his decision that was quoted in the
20 Commission's order?

21 A. No, I believe I have had occasion to read the
22 recommended decision as well.

23 Q. Have you reviewed testimony in that case that
24 dealt with the prudence in the announcements of the delays?

25 A. No, I have not.

1 Q Am I to take it, Mr. Love, from your statement on
2 page 2 of PECO Statement 8B that all the Commission found
3 imprudent in that Limerick investigation were the
4 announcements of deferral? Is that correct, is that your
5 position?

6 A I think it is my position, as I stated before,
7 that there isn't a very specific finding of imprudence
8 here. The most that I can draw out of it is that there
9 was a finding that the decision the company made was
10 imprudent.

11 Q And you state on page 2, it related only to the
12 deferral announcements, is that correct?

13 A Right, in other words, the decision to have a
14 deferral.

15 Q So, in your opinion, then, the only cost related
16 to the imprudence of making the deferral announcement would
17 be the imprudent cost of a press release and answering
18 phone calls on that press release, is that correct?

19 A No, I guess that's your statement. I don't
20 believe I have testified to that anyplace.

21 Q What other costs are there from announcements,
22 Mr. Love?

23 A I am not presenting any cost of announcements.

24 Q Are you saying there was anything imprudent
25 beyond the announcements, Mr. Love?

1 A. No. My analysis and the analysis of TBA in this
2 investigation that we made, this thorough investigation
3 over a long period of time, was that the company acted
4 prudently and reasonably, and beyond that, we thought, as
5 we have said in our direct testimony, managed this project
6 better than most projects that we have seen.

7 So, we did not have a finding of imprudence. I
8 thought was all stricken, though, but --

9 Q. That wasn't what I was asking you. I am asking
10 you your opinion of what the Commission, as you state on
11 page 2, found to be imprudent.

12 And what I understand you to be saying is that the
13 Commission's opinion was related only to the deferral
14 announcements, is that correct?

15 A. No. That is what you are saying. What I have
16 said is, I believe it's the deferral decision that the
17 Commission is referring to. I am using the words "deferral
18 announcement" here, meaning the deferral decision. I
19 explained that about two or three sentences ago.

20 Q. So, it's your opinion that the Commission spent
21 all that time in the original Limerick investigation to make
22 a finding of imprudence about an announcement of a decision?

23 A. No. You seem to be on a single-minded, broken
24 record track here. It seems to me that if they found
25 anything at all, it is that they found that the decision to

1 defer was imprudent, and nothing more specific than that.

2 Q I have basically one other question, Mr. Love.
3 Am I correct that in your testimony in this proceeding,
4 Mr. Love, you talked about the cost and the impacts of the
5 Mark II containment?

6 A That is correct.

7 Q Would you agree with me that, by your discussion
8 of that in your testimony, that makes you the fifth
9 Philadelphia Electric witness to discuss Mark II in his
10 testimony?

11 A I will accept that subject to your count. I
12 have not counted.

13 Q I suggest Mr. Vollmer, Dr. Levy, Mr. Boyer,
14 Dr. Mattson and yourself.

15 A It seems to me there were many more.

16 MR. HALL: Your Honor, I don't really see the
17 relevance of this line of inquiry.

18 JUDGE MATUSCHAK: It's not that the question is
19 improper. The record will speak for itself.

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

21 JUDGE MATUSCHAK: Any further cross-examination?

22 MS. CHESTNUT: May I have one further question,
23 Your Honor?

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CROSS-EXAMINATION (Continued)

OF JAMES O. LOVE

BY MS. CHESTNUT:

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3 Q Mr. Love, the Commission made no cost disallow-
4 ance associated with the 1976 and 1978 delays, is that
5 correct?

6 A It is my understanding that they said that that
7 was an improper time to be asking that sort of question,
8 because no costs were being asked for inclusion in rate
9 base at that moment.

10 Q The Commission thought any such disallowance
11 would be premature in that order?

12 A That is correct.

13 MS. CHESTNUT: Thank you. No further questions.

14 JUDGE MATUSCHAK: Any redirect?

15 MR. HALL: If Your Honor would give me just a minute,
16 please?

17 (Recess.)

18 MR. HALL: Your Honor, I have only one question on
19 redirect.

REDIRECT EXAMINATION

OF JAMES O. LOVE

BY MR. HALL:

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22 Q Mr. Love, the Consumer Advocate has cross-
23 examined you with respect to your review of the South Texas
24 project as respects the reasonableness of management actions
25 on that project. Do you recall that question?

1 A Yes, I do.

2 Q In performing that review, Mr. Love, did you
3 review the effects or experience related to use of the
4 rolling four tens labor arrangement that was discussed
5 earlier today?

6 A No. You must understand that our review, unlike
7 the Limerick project, came at mid-stream or at a very
8 early stage of completion of the South Texas project.

9 It was a hearing on including additional CWIP in
10 rate base for Houston Lighting and Power as a result of
11 their continuing expenditures on South Texas.

12 The idea of using rolling four tens was a new idea
13 which in fact had not been implemented at the time of our
14 review, so we neither saw it in action nor reviewed it as
15 part of our investigation.

16 Q Was that in fact a new idea developed in the
17 industry at the time you were undertaking your review?

18 A The first time I saw the idea was in 1979, I
19 believe it was, at the River Bend station, where it was a
20 very new idea. It was part of a new project-wide agreement,
21 project labor agreement, presidents' agreement. The
22 presidents of the various trade unions had agreed to the
23 rolling four ten concept.

24 And again, at the time that I was reviewing that
25 project, it had not been implemented yet.

1 MR. HALL: I have no further questions, Your Honor.

2 JUDGE MATUSCHAK: Anything further of these
3 witnesses?

4 (No response.)

5 JUDGE MATUSCHAK: You are excused.

6 (Witnesses excused.)

7 JUDGE MATUSCHAK: Any further testimony to be
8 offered?

9 MR. HALL: No, Your Honor.

10 JUDGE MATUSCHAK: Does Staff have any exhibits to
11 offer?

12 MS. CHESTNUT: Yes, Your Honor, we have several.

13 MR. DELANEY: Initially, I would like to have marked
14 as Commission Trial Staff Exhibit No. 41 the excerpts from
15 the I-80 Limerick 1 investigation which we collected
16 pursuant to your order incorporating parts of that entire
17 record.

18 (Whereupon, the document was
19 marked Staff Exhibit No. 41
20 for identification.)

21 MR. HALL: Your Honor, the company has no objection
22 to the exhibit. As discussed on I believe Thursday, the
23 company will be offering a similar exhibit.

24 We tried to get it ready for today but were unable
25 to do so mechanically. We would propose, subject to Your
Honor's agreement, to file that exhibit with you on

1 Wednesday if we could.

2 JUDGE MATUSCHAK: The motion is granted.

3 MS. CHESTNUT: And in addition, Your Honor, I have
4 an exhibit that I would request be marked as Staff Exhibit
5 No. 42. This is the company's response to a transcript
6 request I made of its Witness Gallagher, and we received
7 this response late this morning, so I did not have time to
8 make copies.

9 I would like for Your Honor to admit that, and I
10 will provide copies to Your Honor and to the parties and
11 the court reporter.

12 (Whereupon, the document was
13 marked Staff Exhibit No. 42
14 for identification.)

15 JUDGE MATUSCHAK: You have no objection to that?

16 MR. HALL: No, I have no objection.

17 JUDGE MATUSCHAK: The motion to file that exhibit as
18 a late exhibit is granted.

19 MS. CHESTNUT: Thank you, Your Honor.

20 JUDGE MATUSCHAK: That's Exhibit No. 42?

21 MS. CHESTNUT: 42, Your Honor, yes.

22 MR. DELANEY: Your Honor, at this point, the Staff
23 would move in 41 and 42, plus all of our previously
24 identified exhibits, if any weren't move at that time.

25 JUDGE MATUSCHAK: Exhibits 41 and 42 are admitted
into evidence.

1 (Whereupon, the documents
2 marked Staff Exhibits Nos. 41
3 and 42 were received in
4 evidence.)

5 MR. WERSAN: Your Honor, it is my understanding the
6 company will be providing the results of Mr. Carroll's
7 production cost run for use in the ECR-F portion of this
8 case?

9 JUDGE MATUSCHAK: Yes, I believe Mr. Carroll agreed
10 to furnish a re-run of fuel costs.

11 MR. HALL: We will do that. I am not familiar with
12 the agreement, but we certainly will do that. I am advised
13 it will be available on Thursday.

14 In addition, we will provide by Wednesday the cost
15 figures associated with the River Bend, Vogtle and South
16 Texas plants, assuming they are not already in the record.
17 Your Honor had agreed to permit the company to do that.

18 JUDGE MATUSCHAK: Yes, that motion is granted to do
19 that. With the understanding that the company will furnish
20 the re-run of the fuel cost, its exhibit on the first
21 Limerick investigation and -- what was the third one?

22 MR. HALL: The third one was these three cost
23 figures involving the three plants.

24 JUDGE MATUSCHAK: Very well, the motion is granted.

25 MR. KLEPPINGER: Your Honor, I have no procedural
26 matters. I would just like to discuss the briefing schedule

1 as I understand it. The main brief is due April 7, and I
2 believe we have established that as an in-hand date for
3 all parties.

4 With Your Honor being outside of Harrisburg, does
5 that mean we mail yours on Friday or Saturday beforehand,
6 or can we mail it Fed-Ex to you on the 7th so you get it
7 the 8th?

8 JUDGE MATUSCHAK: At the time of the prehearing
9 conference, we indicated as follows: "I would caution
10 counsel that those are dates of service, not dates of
11 mailing. We expect to be served with those briefs, and
12 the other parties will be served with those briefs on the
13 dates mentioned."

14 We expect to have those briefs on April 7th and
15 April 14th, and not to be mailed then and received later.
16 We are under short time here, and we have noted in the past
17 that mailing came in at various times, one, two, three days
18 later. And we can't operate under those conditions.

19 We have a very strict time schedule here, and we
20 expect to have them in our hands on those dates.

21 MR. KLEPPINGER: I understand. Thank you.

22 JUDGE MATUSCHAK: Anything further?

23 MR. HALL: No, Your Honor.

24 JUDGE MATUSCHAK: I want to compliment counsel for
25 their diligence in this proceeding, and I would appreciate

1 the fact that our resolution of this matter, with the
2 voluminous testimony that has been presented, could be
3 aided by well-prepared briefs, that would alleviate our
4 duties in this matter.

5 Of course, as in all cases, we have stated we cannot
6 promise that we will decide this matter in the exact way
7 that any of the parties would wish. The only thing that
8 we promise you is that we will try to exert the same
9 diligence that you have in this case, and that we will
10 call the shots as we see them and try to render a fair
11 resolution of this matter.

12 Thank you.

13 (Whereupon, at 5:17 p.m., the proceedings were
14 concluded.)

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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
under my direction; and that this transcript is a true
and accurate record to the best of my ability.

COMMONWEALTH REPORTING COMPANY, INC.

By: John A. Kelly

John A. Kelly

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